

Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts, V.S. Apte Commerce
And M.H. Mehta Science College, Palghar
(Best College – University of Mumbai)
(Amongst Top 100 Colleges in India by 'India Today – MDRA Survey 2022)



7.2.1 BEST PRACTICES

BEST PRACTICE - I

Preserving Biodiversity: A Green Campus Initiative



Title of the Practice: Preserving Biodiversity: A Green Campus Initiative

Objectives of the Practice: As per the G20 Climate risk analysis, in the next 30 years, the length of heatwaves will increase by 2,515%, driving heat-related deaths 25 times higher than in 1990 and also leading to a 15% loss of income to the economy and farmers in India. Keeping this in mind, the team initiated the task of moving towards the preservation of biodiversity. The primary action goals are

1. To identify, name and digitally record the various types of flora and fauna available within the campus.

2. To create awareness amongst various stakeholders and communities through the conduct of campaigns, exhibitions, project reports etc.

The Context: While implementing and designing the practice following points were considered:

1. **Ethical and Legal Considerations:** Guidelines for research involving flora and fauna were drafted and training was provided to the surveyors. Compliance with relevant laws and regulations was ensured.

2. **Biodiversity Knowledge and Expertise:** The project required a team with expertise in botany, zoology, ecology, and possibly other relevant fields to accurately identify and record the flora and fauna. Experts from the forest department were invited.

3. **Long-term Sustainability:** Developing strategies for the long-term sustainability of the project, including succession planning, institutional support, and ongoing monitoring and evaluation were given a thought.

The Practice: The institute campus where flora and fauna are maintained comprises 12 acres. To ensure the ethical and legal compliance of handling wildlife a well-planned structured process was carried out.

Objective 1: To identify, name and digitally record the various types of flora and fauna available within the campus.

Process: The entire process can be divided into three stages:

1. Planning Stage:

a. **Formation of Team:** A dedicated committee was appointed comprising of faculties and teachers from diverse departments to ensure a holistic and comprehensive view to the activity.

b. **Resource Allocation:** The required resources such as men and materials were assigned by the IQAC with in-principle approval from the Principal.

c. **Draft Guidelines:** The committee prepared draft guidelines that were duly approved by the concerned authorities.

d. Training and Support: Stakeholders involved in the process were provided with training and demonstration.

2. Execution Stage:

a. Survey: A team of 55 students and 15 faculty members from various departments were involved in the survey.

b. Species Identification: With the help of experts, 30 species of butterflies and 33 species of birds are identified.

c. Data Recording: The data was recorded digitally.

d. Data Classification:

e. Data Compilation: The team compiled the entire data using electronic resources.

f. Project Report: A physical copy of the report so maintained has been forwarded to various authorities for verification.

3. Post Planning Stage

a. Presentation of Report: The report was presented to IQAC for review and future course of action.

b. Report Approval: The report of fauna is under approval by the forest department.

Objective 2: To create awareness amongst various stakeholders and communities through the conduct of campaigns, exhibitions, project reports etc.

Process and Practice: The extension committee was involved and various competitions like poster making, awareness campaigns, conferences etc were conducted year-round.

Evidence of Success

The project successfully identified and digitally recorded 30 species of butterflies and 33 species of birds and 60 species of plants within the campus. This indicates a significant increase in biodiversity knowledge among participants and contributes to the overall understanding of local flora and fauna.

The conduct of campaigns, exhibitions, and project reports has led to increased awareness among various stakeholders and communities about the importance of biodiversity conservation. This is evidenced by the active participation in competitions like poster making, awareness campaigns, and conferences, indicating a positive impact on community engagement.

The project received approval and support from the IQAC and relevant authorities, demonstrating institutional backing. Compliance with ethical and legal considerations, including drafting guidelines for research involving flora and fauna, indicates the project's success in adhering to regulations and best practices.

The project's consideration of long-term sustainability strategies, such as succession planning, institutional support, and ongoing monitoring and evaluation, ensures its impact will continue beyond its initial phase. This indicates a commitment to preserving biodiversity over time.

This validates the project's success and its potential impact on future biodiversity conservation efforts.

6. Problems Encountered and Resources Required

Problems Faced: Approval of draft guidelines from forest department was challenging and consumed lot of time.

Resources:

Human Resources: A dedicated team comprising faculty and students from diverse departments was essential for the successful implementation of the practice.

Training and Support: Extensive training and support were required to equip stakeholders with the necessary skills and knowledge to identify and record flora and fauna accurately.

Equipment and Materials: Various equipment and materials, such as binoculars, field guides, and digital

recording devices, were required to conduct the survey and record the data.

Institutional Support: Support from the IQAC and other relevant institutional bodies was crucial for resource allocation and ensuring compliance with ethical and legal guidelines.

1. Title of the Practice: Fostering a Culture of Research and Innovation

2. Objectives of the practice:

- To align with the National Education Policy (NEP) 2020 by fostering a research-oriented approach to learning.
- To encourage collaboration and knowledge sharing among students, faculty, and researchers.
- To promote innovation and problem-solving skills among students.
- To enhance the reputation and academic standing of institutions in the Palghar district through research excellence.

3. The context

Research is paramount among faculties and learners in higher education institutes as it fuels knowledge creation and innovation. NEP 2020 emphasizes the importance of fostering a research culture in higher education institutions to drive innovation and address societal challenges. Through research, faculty and learners can explore new ideas, theories, and technologies, leading to advancements in various fields. Engaging in research also helps develop critical thinking, analytical, and problem-solving skills and enhancing individuals' ability to conduct independent inquiries and evaluate information effectively. Additionally, research enables faculty to stay updated with the latest developments in their field and enhances their professional reputation. For learners, engaging in research provides valuable hands-on experience and can improve their academic and career prospects. Furthermore, research often addresses societal

challenges and contributes to the development of solutions that benefit the community and the nation as a whole.

Overall, research is a fundamental component of higher education that drives innovation, advances knowledge, and prepares individuals for the challenges of the future, enhancing the quality of education and contributing to the betterment of society hence IQAC emphasized seeding the culture.

4. The Practice

- Formation of Research Committee: A specialized cell called the Research Committee acts as a driving force in encouraging and organizing activities to seed the culture in every activity.
- Resource Allocation: Necessary resources, including funding, infrastructure, and equipment, are allocated to support research initiatives. A budget of Rs.5,00,000 was approved for the academic year.
- Collaboration and Networking: Institutions are encouraged to collaborate with other institutions, industries, and research organizations to foster a culture of knowledge sharing and collaboration. The academic year 2022-23 witnessed collaborations with industries for quality enhancement in the research field.
- Research Seminars and Workshops: Regular seminars, workshops, and conferences are organized to provide a platform for students and faculty to present their research findings and engage with peers.
- Publication and Dissemination: Efforts are made to encourage students and faculty to publish their research findings in reputed journals and conferences to enhance the visibility and impact of their work. Financial incentives are offered to researchers for the same.
- Participation in various competitions: The IQAC and research cell work in close collaboration to ensure stakeholders participate in various research conventions.

5. Evidence of Success

The institute's support for research is further demonstrated by the significant research grants awarded to various departments, enabling them to pursue impactful research initiatives. Furthermore, the institute's encouragement and support for faculty research is evident from the numerous research paper publications, patent publications, and the appointment of new research guides. The organization of training programs and workshops further underscores the institute's commitment to enhancing the research capabilities of its faculty. Overall, these achievements reflect the institute's strong research culture and its commitment to advancing knowledge and innovation in its academic community. The details are enumerated herewith:

1. 89 students and 35 research projects participated in Avishkar Research Convention, University of Mumbai. The institute bagged the Zonal Championship and Gold Medal at Inter-University State Championship. The institute also represented the affiliating body, the University of Mumbai at Anveshan - National Research Convention.
2. Research Grants of Rs 11,15,000 were endowed to various departments during the academic year.
3. Dr. Sapna Jadhav received Patent Publication under Invention titled "Light weight and outstanding mechanical strength of agav fibre reinforced silica aerogel blanket" of application number 202221065528A. Financial support was provided by the institute.
4. Dr. Manish Deshmukh is appointed as mentor for research Convention by University of Mumbai
5. 63 faculties were sponsored with Rs 1,42, 861 for attending conferences and publication.
6. More than 25 research paper publications from faculty members and students were witnessed.
7. Three professors were appointed as research guides during the year.
8. More than 10 training programs were organized by the institute and faculties were encouraged to participate in various other workshops.

9. Research Project guidance as per ICSSR was provided resulting into faculties submitting research proposals.
10. Collaborations with other institutions, industries, and research organizations were established to foster knowledge sharing.

6. Problems Encountered:

Balancing research activities with academic responsibilities and other commitments was challenging for students and faculties however with constant commitment and motivation it was overcome.

Resources Required

- **Funding:** Sufficient funding is required to support research activities, including grants for research projects, travel grants for attending conferences, and financial incentives for publishing research papers.
- **Infrastructure and Equipment:** Access to research facilities, laboratories, and specialized equipment is essential for conducting research projects effectively.

FLORA OF SONOPANT DANDEKAR COLLEGE CAMPUS:

Sr. No.	Name of the Plants	Common Name	Sr. No.	Name of the Plants	Common Name
1.	<i>Polyalthia longifolia</i>	galse ashoka	30.	<i>Zizyphus jujuba</i>	bor
2.	<i>Cocus nucifera</i>	naral	31.	<i>Gardenia indica</i>	parijatak
3.	<i>Nerium oleander</i>	kahnerii	32.	<i>Syzygium cumini</i>	jambu
4.	<i>Tamarindus indica</i>	chinch	33.	<i>Moringa oleifera</i>	drum stick
5.	<i>Mangifera indica</i>	mango	34.	<i>Citrus limon</i>	Limbu
6.	<i>Azardirachta indica</i>	neem	35.	<i>Ocimum sanctum</i>	tulsi
7.	<i>Delonix regia</i>	gulmohor	36.	<i>Phoenix dactylifara</i>	kajar
8.	<i>Bauhinia acuminata</i>	kanchan	37.	<i>Cinnamomum tamala</i>	tej patta

9.	<i>Ficus glomerata</i>	Umber	38.	<i>Carica papaya</i>	papaya rose
10.	<i>Plethorum pterocarpum</i>	copper pod	39.	<i>Rosa indica</i>	Rose
11.	<i>Saraca indica</i>	sita ashok	40.	<i>Colocasia esculenta</i>	aalu
12.	<i>Passiflora sp.</i>	kondala	41.	<i>Phillo dendron</i>	sellum
13.	<i>Bougainvillea</i>	paper paint	42.	<i>Bryophyllum</i>	panphuty
14.	<i>Samanea saman</i>	rain tree	43.	<i>Ficus elastica</i>	rubber plant
15.	<i>Cycas revoluta</i>	sago palm	44.	<i>Pan cratium caribaeum</i>	spider lily
16.	<i>Lantana camara</i>	ghanerii	45.	<i>Bauhinia racemosa</i>	aapta
17.	<i>Eucalyptus globulus</i>	nilgiri	46.	<i>Parkia biglandulosa</i>	doruwa
18.	<i>Terminalia catappa</i>	badam	47.	<i>Leucaena leuciocephala</i>	subabhal
19.	<i>Hibiscus rosa sinensis</i>	jaswand	48.	<i>Plumia alba</i>	chafa
20.	<i>Millingtonia hortensis</i>	undir mar	49.	<i>Coleus scutellarioides</i>	maainmul
21.	<i>Helicters isora</i>	murud sheng	50.	<i>Acalypha wilkesiana</i>	kupi
22.	<i>Areca catechu</i>	supari	51.	<i>Combretum indicum</i>	madhumalati
23.	<i>Roystonea regia</i>	royal palm	52.	<i>Araucaria heterophylla</i>	chrismas tree
24.	<i>Ficus racemose</i>	cluster fig	53.	<i>Caryota sp</i>	fish tail
25.	<i>Musa indica</i>	banana	54.	<i>Nymphaea</i>	lotus
26.	<i>Grevillea tillifolia</i>	dhaman	55.	<i>Mimosa pudica</i>	lajalu
27.	<i>Jatropha curcas</i>	erand			
28.	<i>Tabernaemontana divaricat</i>	tagar			
29.	<i>Tecoma stans</i>	Ghanti phul			

INTRODUCTION

1. What is Bio diversity?

Biodiversity is the variety of Life on Earth.

2. Levels of Biodiversity.

- i. Genetic biodiversity
- ii. Species biodiversity
- iii. Ecosystem biodiversity

i. Genetic biodiversity:

It is concerned in variation in genes with a particular species

Genetic biodiversity gives us beautiful butterflies, roses, parrot, corals, etc.

ii. **Species biodiversity:**

It refers to variety of living organisms on earth.

iii. **Ecosystem biodiversity:**

It refers to the different types of habitat. e.g Corals, grasslands, wetlands, desert, tropical rainforest, etc are some example of ecosystem.

3. **Measurement of biodiversity:**

Biodiversity is measured by two measure components

- **Species Richness**
- **Species Evenness**

Species Richness:

It is the measure of number of species found in ecosystem.

- Alpha diversity: It refers to diversity in a particular area in a ecosystem
- Beta diversity: It is the compression of diversity in a ecosystem.
- Gemma diversity: It is the measure of the overall diversity. To the different ecosystem within a region.

OBJECTIVES

1. Conserve endangered species and their habitats to maintain biodiversity.
2. Restore degraded ecosystems to enhance biodiversity and ecosystem functions.
3. Promote sustainable use of biological resources to ensure their availability.
4. Increase public awareness about biodiversity importance and threats.
5. Conduct scientific research to understand biodiversity patterns and functions.

BIODIVERSITY

- The Aim of our project is to generate awareness about the rich biodiversity of our campus and to preserve it.
- We used survey method and field visit to make this project.
- We used some standard books to gathered information related to the names of birds, trees, etc. from our Library.
- These are some photographs which we have clicked from our college campus.
- We have made this report on the information which we have gathered from our college campus.

BIODIVERSITY OF SONOPANT DANDEKAR COLLEGE CAMPUS:

Observation:

- Less Social erosion and Social Degradation
 - Less Habitat Destruction
 - Biodiversity conservation
- I. Ex-situ conservation: Conservation biodiversity inside the area where they naturally occur. Ex: Sid banks botanical gardens, recreational gardens, horticultural gardens this are some examples of Ex-situ conservation.
 - II. In- Situ conservation: Conserving the animals and plants in their natural habitat. Ex: National park, Santuries biosphere reserved forest protected forest.

Biodiversity conservation in Sonopant Dandekar:

- Botanical Garden
- Horticulture Garden

WHAT MAY LEAD TO BIODIVERSITY LOSS?

- Natural causes - Floods, earthquake, landslide tribally among species. Species lack of Pollination and diseases.

- Man-made causes - Habitat destruction, uncontrolled commercial exploitation hunting and poaching extension of agriculture pollution, filling of wet lands destruction of Coastal areas.

REFERENCES

1.Environment - D•R Khullar, J.A-c.S. Rao the book of Indian

butterflies - Isuac Kehimkay.

Remedies: We have suggested some remedies to take the loss of biodiversity of our campus -

1) Sustainable construction:

We have seen more and more construction in our college campus. It is essential for development but we also have to take care about our rich biodiversity.

2) Making of butterfly garden.

We have around - species of butterflies in our campus. In present climate conditions the richness of species of butterflies in our campus is a good indicator that our campus will become their permanent home and for that we have to make a butterfly garden in our campus.

3) More plantation of Indian Trees -

We have so many trees but there are so many trees but there are so many foreign trees in our campus and these are useless trees for our rich biodiversity because that trees are not useful to animals and bird to make their nests on it and that trees are not good food sources to animals. So we need Indian trees in our campus.

Sample Photographs





BEST PRACTICE: II

Fostering a Culture of Research and Innovation

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Patent Documents

Acknowledgement

Received NEFT fund transfer application from Principal, S. D. Arts, V. S. Apte Commerce & M. H. Mehta Science
College, Palghar A/c. No. 059200100016201 for Rs. 20,502/- on _____ at _____ am/pm.
Beneficiary Name INNOVE INTELLECTS LLP IFSC: BARB0VIJGHA A/c No.: 31580200000373.



Signature: _____

Code/UTR: 5059230310011824

**Sonopant Dandekar Arts, V. S. Apte Commerce &
M. H. Mehta Science College**

PALGHAR, Dist. Palghar - 401 404.

Voucher No.

BP-958

Youself (NEFT)

Date 25/01/2023

Pay to Shri/Smt. Innovate Intellects LLP Rs. 20,502/-

(in words) Twenty thousand five hundred & two only

only by Cash/Cheque No. 131235 on 28/01/2023

and debit the sam to _____ Account _____

PARTICULARS	Rs.	Ps.
Patent Application fees -	20502/-	
Patent on		
"Smart Lab Online Temperature Monitoring System .		
TOTAL	20,502/-	

Accountant's
noting

[Signature]
Cashier

[Signature]
Officer

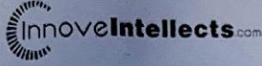
[Signature]
Principal

Received the sum of Rs. _____

(In words) _____

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Sign.
of
Receiver



INVOICE

InnoVe Intellects LLP
A-102, Sector-9, New Vijay Nagar
Ghaziabad 201009
9910627125
pooja@innoveintellects.com
GSTIN/UIN: 09AAHF8491E1Z0

DATE OF INVOICE

14/1/2023

INVOICE NUMBER

2022/2023/288

CLIENT NAME

**Sonopant Dandekar Arts, V.S.Apte Commerce
and M.H. Mehta Science College, Palghar**

DESCRIPTION	AMOUNT
Title of the Invention: "SMART LAB ONLINE TEMPERATURE MONITORING SYSTEM"	
Govt. Filing Fee of Patent Application	1,600
Govt. Filing Fee of Form-9 (Request for Early Publication)	2,500
Searching, Complete Specification Drafting, Documentation and Filing of the Patent application, Documentation and Filing of Form-9	13,900
18% GST Charges	2,502
TOTAL	20,502

Amount in words..... **Twenty Thousand Five Hundred and Two Rupees Only.**

Bank Details:
InnoVe Intellects LLP,
A/c No. 31580200000373
IFS Code - BARB0VIJGHA,
BANK OF BARODA VIJAY NAGAR GHAZIABAD

THANK YOU

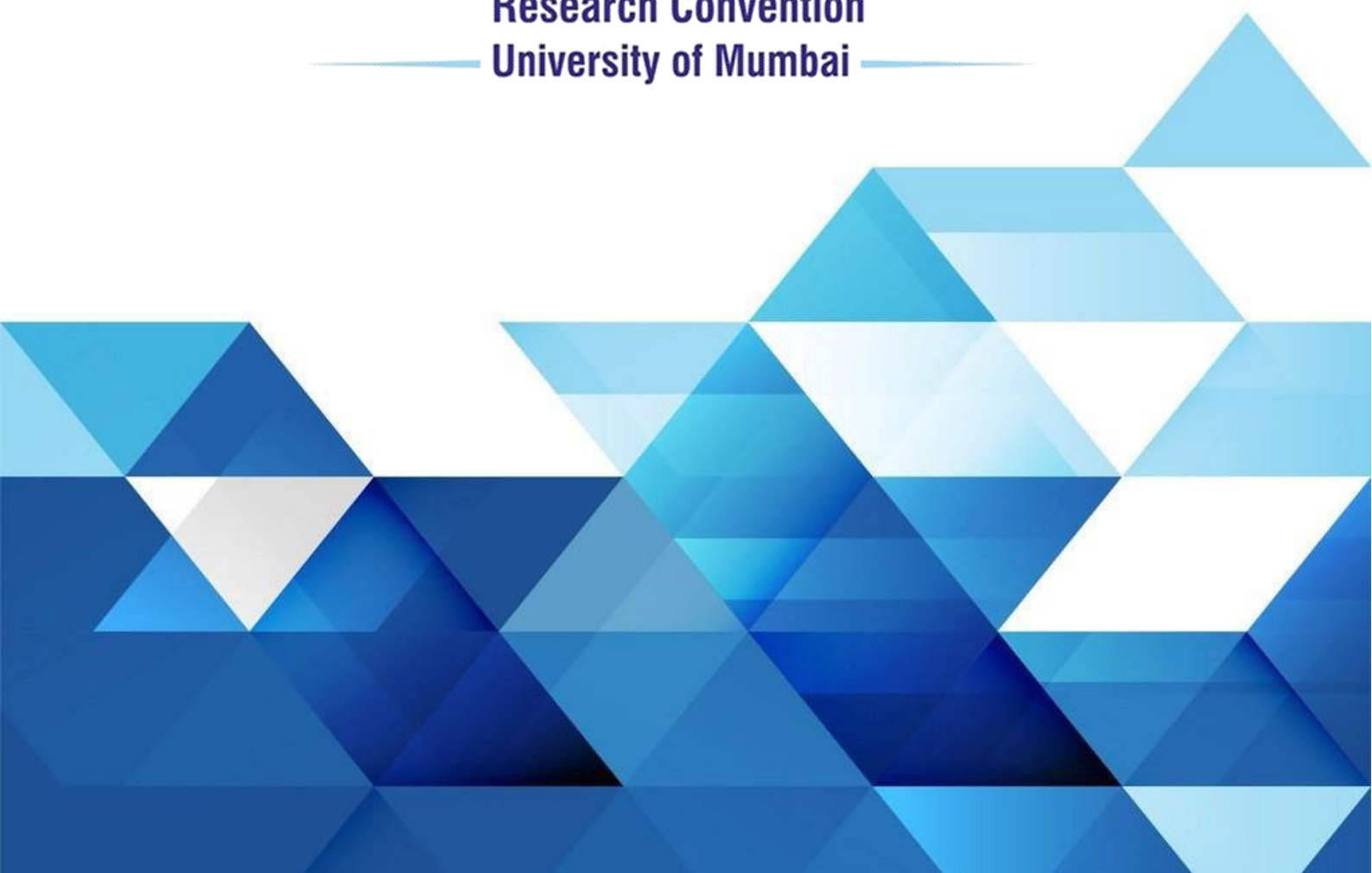
For questions concerning this invoice, please contact
Mrs. Pooja Kumar
9910627125
info@innoveintellects.com
www.innoveintellects.com



Sonopant Dandekar Shikshan Mandalis
Sonopant Dandekar Arts, V.S. Apte Commerce and
M.H. Mehta Science College, Palghar



Inter-Collegiate / Institute / Department
Research Convention
University of Mumbai



Avishkar Research Convention Report: 2022-23

Table of Content

Sr. No.	Particulars
1	Notice-Staff
2	Notice-Student
3	Appointment Letter
4	Introduction of “Avishkar”: Concept & Theme Of Avishkar
5	About Avishkar Competition(Format 5)
6	Annual Report of Avishkar Committee –2022-23 (Format 6)

Prof. Sapna Bakul Jadhav

College Co-ordinator

Prof. Mahesh Deshmukh

IQAC Co-ordinator

Dr. Kiran Save

Principal



Sonopant Dandekar Shikshan Mandali's

**Sonopant Dandekar Arts, V. S. Apte Commerce
& M. H. Mehta Science College, Palghar**

(Best College - University of Mumbai)

(Amongst Top 100 Colleges in India by 'India Today - MDRA Survey 2019')

Date: 05 / 08 /2022

CERTIFICATE

This is to certify that Dr. Sapna Bakul Jadhav is serving as an Assistant Professor in the Department of Physics at Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar, Dist. Palghar.

She has actively contributed in Intercollegiate Avishkar Research Competition 2022-23 of the institution as college coordinator of the academic year 2021-22.

(Dr. Kiran J. Save)

Principal

**Sonopant Dandekar Arts College,
V.S. Apte Commerce College &
M.H. Mehta Science College
PALGHAR (W.R.)
Dist. Palghar, Pin-401404**



Sonopant Dandekar Shikshan Mandali's

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25/11/2022

University of Mumbai

DEPARTMENT OF STUDENTS' DEVELOPMENT

15th Inter-Collegiate / Institute / Department

Avishkar Research Convention

Since the last few years, Sonopant Dandekar College has created its position at University and National level as a quality educational hub, through a lot of events and competitions where we proved our self. Last two years we got huge success in the Avishkar Research Convention.

Now this year due to present circumstances, it is not possible to organize Avishkar Research Convention as per regular mode. However, to keep the temperament of the research, the Board of Students' Development, University of Mumbai has decided to conduct this research activity on a Virtual Platform. This year, as working in the laboratories would not be possible, therefore the convention will be based on the research proposal as well as preliminary work (if done) by the students.

There will be two rounds for the convention-

- 1) Selection Round (District/Zone Level)
- 2) Final Round (University Level)

Following is the College Committee for **Avishkar Research Convention 2022**

Sr. No.	Name of the person	Designation	Department
1	Mrs. Sapna Jadhav	College coordinator	Science – Physics
2.	Mrs. Bhakti Raut	College Co-coordinator	Science -IT
3.	Mr. Vivek Kudu	Member	Arts – Marathi
4.	Dr. Shehnaz Ratnani	Member	Commerce
5.	Lt. Anagha Padhye	Member	Arts Philosophy
6.	Dr. Dilip Yadav	Member	Science – Chemistry
7.	Dr.Hrushikesh Deokar	Member	Science – Chemistry
8.	Mr, Ramdas Yede	Member	Arts History
9.	Ms. Shreya Mishra	Member	Commerce & Management
10.	Mr. Bhushan Bhoir	Member	Science – Zoology
11.	Mrs. Shailaja Palan	Member	Science - Biotechnology
12.	Mrs. Rashmi Varade	Member	Science – CS
13	Mr. Harshad Chaudhari	Member	Science – Botany
14	Mr. Tajes Chaudhari	Member	Science – Botany

The above members are supposed to motivate the student participants to prepare a quality research proposal and look at the other event organizing activity.



(Dr. Kiran Save)

PRINCIPAL
Principal
Sonopant Dandekar Arts College,
V.S. Apte Commerce College &
M.H. Mehta Science College
PALGHAR (W.R.)
Dist. Palghar, Pin-401404



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20/08/22

(Notice for All Senior College Teaching staff)

Avishkar Research Convention 2022-23

All the faculty members hereby informed that the Department of Students Development, University of Mumbai declared the dates for 'Avishkar Research Convention 2022-23'.

All teaching staff members have to submit the details of their student researcher and the project to **Mrs. Sapna Jadhav** on or before **30/08/2022**.

For assistance Contact: Dr. Manish Deshmukh 9822426815
Mrs. Sapna Jadhav 8169684857

Date: 22/08/2022

**Mrs. Sapna
Jadhav
College
coordinator**

Dr. Kiran Save
Principal
Sonopant Dandekar Arts College,
V.S. Apte Commerce College &
M.H. Mehta Science College
PALGHAR (W.R.)
Dist. Palghar, Pin-401404

INTRODUCTION TO “AVISHKAR”: CONCEPT & THEME OF AVISHKAR

The State Level Inter-university Research Competition was initiated by the Office of the Hon’ble Chancellor in the year 2007 with a very unique title i.e. “Avishkar”.

Research is an outcome basically of the innovative minds in the modern era with the support of well equipped laboratories and such other infrastructure. If the same is made available by the educational institution at right ages, it will not only stimulate the activities but will help to identify the students to be groomed further as acclaimed researchers in their respective fields. Much is discussed about the quality of research being carried out in the Universities. Concern has always been expressed about enhancing the standard of researches.

A peer group of like-minded talented persons inclined towards research leaves strong impact on the open minds at the tender age giving direction to take research as a career. Right opportunity when made available at the undergraduate level leads to forming such a peer group which can be molded in desired direction by motivated teachers, who became their mentors. The desired outcome of “Avishkar” would not be limited to the quality of the research in the University and to register maximum number of patents but would be to nurture the future of “Noble Laureates” ahead in forthcoming years doing fundamental research.

BASIC CONCEPT OF AVISHKAR:

- Identifying the hidden innovative scientific talents and capacities of the youth of Universities;
- Providing opportunities for inculcating research attitude in the youth and teachers of higher education system;
- Promoting talented researchers to participate at National/International events;
- Involving teachers in Minor and Major Research Projects and thus contribute in research development;
- To provide financial assistance in the form of fellowship / scholarship to the selected young researchers and teachers for innovative research development.

The organization of “Avishkar” promotes and encourages participation of multi-disciplinary faculties (six categories) of education at four different levels (UG, PG, PPG & Ph.D. teachers) to showcase novel innovative research projects under the unique theme of “Avishkar” i.e. **“Create, Sustain and Prosper”**.

About Avishkar Competition

1. Introduction

The frontiers of education are changing every day. We are moving from the knowledge based society to a society of innovation and thus research becomes one of the most important components of the higher education. Today, one of the indices for the measurement of the potential of any educational institution is its research activity. All stakeholders namely, students, teachers and other entities in the higher educational institutes should be enthused to engage themselves in research at various levels. It is essential to unveil the unknown and unexplored areas of knowledge in all fields of academic enquiry. Due to the increasing requisite of interdisciplinary approach, no discipline goes untouched from the research activity. Keeping in view the new challenges, the then Hon'ble Governor of Maharashtra and the Chancellor of the Universities in the State of Maharashtra initiated 'Aavishkar: Maharashtra State Inter-University Research Convention' in the academic year 2006-2007. Since 2006-2007 the University of Mumbai has started Aavishkar: Inter-Collegiate / Institute / Department Research Convention for its affiliated colleges, constituent colleges, recognized institutes and academic departments. The Convention is designed with the intention to develop a research culture and scientific temper among the students and research scholars. The activity will also help to develop skill, review new dimensions of explored areas of knowledge as well as the unexplored areas of enquiry. The University of Mumbai has a long tradition of 165 years with more than 852 colleges and over 9 lacs students studying in various academic departments, recognized institutes and affiliated and constituent colleges of the University. It shall be the collective responsibility of all of us to sensitize the students and teachers about the Convention and build confidence among the students to venture into research.

2. Objectives

- To identify the hidden innovative scientific talents and capacities of the students.
- To provide opportunities for inculcating research attitude in the students.
- To create academically sound youth by developing knowledge, skill and attitude of the research.
- To promote aptitude with emphasis on high standards of research and development activities for the benefit of the students.
- To explore the active student centred paradigm of education.
- To excel active learning standards of research.
- To develop personality and communication skills in the students.

- To produce a research scholars commensurate with the need of the future.
- To promote the interaction among the students for the exchange of various aspects of the research.
- To encourage the students to participate in research activities at inter-collegiate, district, University, state, zonal, national and international levels.
- To felicitate and recognize achievements of students by offering awards and honours.
- To provide financial assistance in the form of fellowships / scholarships to the selected researchers for the development of his/her innovative research.
- To provide conducive environment for the enhancement of entrepreneurial skills and incubate the valid research ideas.

3. Rules and Regulations –

A) Categories and Levels

Categories and Levels Students of the University of Mumbai are allowed to participate in any of the following category / discipline irrespective of their own discipline / course

Categories / Disciplines

Category 1: Humanities, Languages and Fine Arts

Category 2: Commerce, Management and Law

Category 3: Pure Sciences

Category 4: Agriculture and Animal Husbandry

Category 5: Engineering and Technology

Category 6: Medicine and Pharmacy

Students can participate in any of the above categories as per the levels whichever suits them as indicated below

Levels

Level 1: Undergraduate Students (UG)

Level 2: Postgraduate Students (PG)

Level 3: Post PG Students (PPG)

Level 4: In-service Teachers (TH)

B) Areas covered under each category

Category 1: Humanities, Languages and Fine Arts

It covers research areas like languages, social sciences, fine arts, education, humanities and other related fields which are of social interest like agricultural extension, preventive medicine and veterinary sciences, etc.

Category 2: Commerce, Management and Law

It covers research areas like commerce, accountancy, management, banking, insurance, law and other fields where these disciplines are applicable.

Category 3: Pure Sciences

It covers areas like all basic sciences, soil sciences, home sciences and other fields like biotechnology, microbiology, environmental sciences, life sciences, biochemistry, biophysics, bioanalytical, etc.

Category 4: Agriculture and Animal Husbandry

It covers areas like horticulture, agriculture, agronomy, entomology, fisheries, animal husbandry and other fields like biotechnology, microbiology, biophysics, biochemistry, bioanalytical chemistry, etc. where agricultural and animal husbandry aspects are covered.

Category 5: Engineering and Technology

It covers all branches of engineering and technology. It also includes computer science, information technology, agricultural engineering, food technology, dairy technology, biophysics, biomedical and biosensor, etc. where engineering and technology aspects are covered.

Category 6: Medicine and Pharmacy

It covers all branches of medicine and pharmacy. It also includes veterinary medicine, preventive medicine, epidemiology, clinical studies, etc.

C) The General Eligibility Criteria for Participation

1) The full time bonafide student enrolled in UG / PG / M.Phil. / Ph.D. / D.Sc. / D.Lit. Degree Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is eligible for the participation.

2) The student enrolled in UG Diploma Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai which is of a minimum duration of 1 academic year and whose examination is conducted by the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai subsequent to passing of 12th Class or HSC Examination or equivalent Examination is also eligible to participate in the UG level.

3) The student enrolled in PG Diploma Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai which is of a minimum duration of 1 academic year and whose examination is conducted by the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai subsequent to passing of graduation is also eligible to participate in the PG level.

4) Student enrolled in correspondence course/programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is NOT eligible for the participation.

5) Casual student, external student and student pursuing certificate course/programme and bridge course/programme in the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai are NOT eligible for the participation.

6) Student enrolled in distance education programme/course of the University of Mumbai is NOT eligible for the participation.

7) Student having provisional admission in the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is NOT eligible for the participation.

8) Student can represent only that affiliated college / constituent college / recognized institute / academic department of the University of Mumbai where he/she is pursuing his/her degree / diploma.

9) The student shall NOT be allowed to represent more than 1 affiliated college / constituent college / recognized institute / academic department of the University of Mumbai during his/her current academic year.

10) Student shall have valid Identity Card of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai.

11) Student shall have PRN No. / Registration No. of the University of Mumbai.

12) Student migrating from other University can participate only when his/her admission is regularized and he/she gets admitted as a bonafide student in the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai.

13) Student from any discipline can participate in any of the above category to which his/her research project fits.

14) Any disqualification of a participant on the ground of General Eligibility Criteria may result in removal of the participant from the 'Aavishkar: Inter-Collegiate / Institute / Department Research Convention' to be held in the following three years including current year of the participation.

15) Ethics of research must be delicately observed by the student and his/her mentor.

D) Eligibility Criteria for Categories and Levels

1) The rules for each level are as follows

A. Undergraduate Students (UG)

i) A full time bonafide student enrolled in UG Degree Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is eligible for the participation.

ii) A student enrolled in UG Diploma Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai which is of a minimum duration of 1 academic year and whose examination is conducted by the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai subsequent to passing of 12th Class or HSC Examination or equivalent Examination is also eligible to participate in the UG level.

iii) The age of the student shall not be more than 25 years as on 30th September of the academic year in which the Convention is being held.

B. Post-Graduate Students (PG)

i) A full time bonafide student enrolled in PG Degree Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is eligible for the participation.

ii) A student enrolled in PG Diploma Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai which is of a minimum duration of 1 academic year and whose examination is conducted by the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai subsequent to passing of graduation is also eligible to participate in the PG level.

iii) The age of the student shall not be more than 30 years as on 30th September of the academic year in which the Convention is being held.

C. Post PG Students (PPG)

i) A student who has post graduate degree and is duly registered for M.Phil. / Ph.D. / D.Sc. / D.Litt. degree in the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is eligible for the participation.

ii) A student pursuing Post-doctoral Research in the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai is NOT eligible for the participation.

iii) A student who has submitted his/her synopsis / thesis for his/her M.Phil. / Ph.D. / D.Sc. / D.Litt. degree and his/her viva-voce examination is awaited, is also eligible for the participation.

iv) A student who has successfully completed his/her viva-voce examination for his/her M.Phil. / Ph.D. / D.Sc. / D.Litt. degree is NOT eligible.

v) There is no age limit for the PPG students.

2) Rules for Computing Years for UG and PG levels

i) Not more than 7 years have elapsed since a student passed the examination qualifying him/her for first admission to a UG Degree or Diploma Programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai.

ii) Further, students can participate for 1 year more than the normal length of the academic programme which he/she is following.

Explanation

The restriction of participation to a period of one year more than the length/duration of the academic Programme means that student pursuing a three year degree programme (i.e. B.A, B.Sc., B.Com., etc.) can participate for four years, while a student pursuing four year degree programme (i.e. B.E., B. Tech., etc.) can participate for five years.

3) Rules for Computing Years for PPG level

Not more than 5 years have elapsed since a student was registered for the M.Phil. / Ph.D. / D.Sc. / D.Litt. programme of the affiliated college / constituent college / recognized institute / academic department of the University of Mumbai.

4. Mode of Convention/ Competition

1) The Convention shall be conducted in two modes

A) Poster and/or Model Presentation

i) Every research project shall be presented in the form of Poster and/or Model.

ii) The time for Poster and/or Model Presentation shall be 3 minutes followed by the discussion of not more than 3 minutes. However, there shall not be disqualification of the participant if the time exceeds. iii) The selected research projects shall be allowed for the Podium Presentation.

B) Podium Presentation

i) The selected research projects shall be presented in the form of Podium Presentation.

ii) Each research project shall be presented in a maximum of 7 minutes. A warning bell shall be given in the 6 th minutes. The participant has to finish the presentation in the given time. In case, if the time is exceeded, the research project shall be disqualified. However, 15 seconds grace period shall be allowed. iii) The presentation shall be followed by the discussion not exceeding more than 3 minutes.

iv) In the discussion only Judges are allowed to ask the questions to the student participant.

v) The results shall be announced at the Prize Distribution Ceremony.

2) Language of Presentation

The student participant shall present his/her research in Marathi or Hindi or English language.

Rounds in the Convention

The Convention shall be conducted in three rounds

1) College/Institute/Department Round

2) Zonal Round and Final Round

1) College/Institute/Department Round (Aavishkar: College Research Convention OR Aavishkar: Institute Research Convention OR Aavishkar: Department Research Convention)

i) Each Affiliated College of the University of Mumbai shall conduct Aavishkar: College Research Convention for their students OR Each Constituent College of the University of Mumbai shall conduct Aavishkar: College Research Convention for their students OR Each Recognized Institute of the University of Mumbai shall conduct Aavishkar: Institute Research Convention for their students OR Each Academic Department of the University of Mumbai shall conduct Aavishkar: Department Research Convention for their students.

ii) The College/Institute/Department shall conduct the Convention 20 days before the commencement of Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) of the University of Mumbai.

iii) The College/Institute/Department shall invite Panel of renowned Judges for the evaluation of the research projects in the Convention.

iv) The Convention shall be conducted in two modes

(A) Poster and/or Model Presentation and

(B) Podium Presentation.

v) Initially, every research project shall be presented in the form of Poster and/or Model. The time for Poster and/or Model Presentation shall be 3 minutes followed by the discussion with Judges of not more than 3 minutes. However, there shall not be disqualification of the participant if the time exceeds. The selected research projects shall be allowed for the Podium Presentation.

vi) The selected research projects shall be presented in the form of Podium Presentation. Each research project shall be presented in a maximum of 7 minutes. A warning bell shall be given in the 6th minutes. The participant has to finish the presentation in the given time. In case, if the time is exceeded, the research project shall be disqualified. However, 15 seconds grace period shall be allowed. The presentation shall be followed by the discussion with the Judges, not exceeding more than 3 minutes.

vii) Use of fireworks / arms / explosive materials at the venue of the Convention is strictly prohibited. However, if it is unavoidable for an exhibit, its imitation may be used with the prior permission of the Principal/Director/Head of the College/Institute/Department.

viii) The best research projects shall be given merits as First Rank / Second Rank / Third Rank / Consolation. The College shall honor the students securing First Rank / Second Rank / Third Rank / Consolation at the time of its Annual Prize Distribution by offering certificates and medal/trophy. The Recognized Institute OR Academic Department of the University of Mumbai shall organize Special Prize Distribution Programme for these students.

ix) The College/Institute/Department shall select maximum 48 research projects from the Convention to depute to Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) of the University of Mumbai.

x) The College/Institute/Department shall invite Expert(s) to refine the selected research projects and enhance presentation skills. The College/Institute/Department may invite its own faculty or outside renowned person(s) in the concerned field as an Expert(s).

xi) Each College/Institute/Department shall depute maximum 48 research projects for the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) not exceeding more than 8 research projects in each level per category.

xii) If number of the research projects exceeds 48 (OR more than 8 in particular level) by the mistake of the College/Institute/Department then the right of the cancellation of concerned research project(s) shall be reserved with Director, Students' Development. Such cancelled research projects shall not be considered for declaration of merit at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round).

2) Zonal Round [Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round)]

i) The Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) shall be conducted on behalf of University of Mumbai at following different Zones.

ii) The Director, Students' Development may change the structure of the above mentioned zones by reviewing the participation in each zone and with the permission of the Board of Students' Development and shall communicate the revised structure of the zones to all Colleges/Institutes/Departments of the University of Mumbai in the beginning of the academic year.

iii) The Director, Students' Development shall approve the Schedule and Host Colleges/Institutes/Departments of the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) from the Board of Students' Development and communicate it to all Colleges/Institutes/Departments of the University of Mumbai in the beginning of the academic year. However, the Director, Students' Development may revise the Schedule and Host Colleges/Institutes/Departments because of changes in the schedule of examinations of the

University of Mumbai or any unavoidable circumstances. The Director, Students' Development shall inform the revised 'Schedule and Host Colleges/Institutes/Departments' to all Colleges/Institutes/Departments of the University of Mumbai.

iv) The student(s) shall present his/her research project in the respective Zone only. However, if the student(s) fail(s) to present his/her research project in the respective Zone due to his/her appearance/participation in the University examination/activity or college examination, then such student(s) shall be given a chance to present his/her research project in another Zone. In such case the concerned student(s) shall take prior permission of the Director, Students' Development through his/her/their Principal/Director/Head. If such research project is selected for Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) then for declaration of Zonal Championship the same project shall be considered in a Zone where the College/Institute/Department of the student(s) is located.

v) The Convention shall be conducted in two modes

(A) Poster and/or Model Presentation and

(B) Podium Presentation.

vi) Initially, every research project shall be presented in the form of Poster and/or Model. The time for Poster and/or Model Presentation shall be 3 minutes followed by the discussion with Judges of not more than 3 minutes. However, there shall not be disqualification of the participant if the time exceeds. The selected research projects shall be allowed for the Podium Presentation.

vii) The selected research projects shall be presented in the form of Podium Presentation. Each research project shall be presented in a maximum of 7 minutes. A warning bell shall be given in the 6th minutes. The participant has to finish the presentation in the given time. In case, if the time is exceeded, the research project shall be disqualified. However, 15 seconds grace period shall be allowed. The presentation shall be followed by the discussion with the Judges, not exceeding more than 3 minutes. In the discussion only Judges are allowed to ask the questions to the participant(s).

viii) Use of fireworks / arms / explosive materials at the venue of the Convention is strictly prohibited. However, if it is unavoidable for an exhibit, its imitation may be used with the prior

permission of the Principal/Director/Head of the Host College/Institute/Department and/or Zone Co-ordinator and/or OSD, Aavishkar and/or Director, Students' Development, University of Mumbai

The best research projects from each category and level shall be selected for the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round). Names of the Students and details of such selected projects shall be declared at the Prize Distribution Ceremony.

3) Final Round [Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round)]

i) The Director, Students' Development shall approve the Schedule and Host Colleges/Institutes/Departments of the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) from the Board of Students' Development and communicate it to all Colleges/Institutes/Departments of the University of Mumbai in the beginning of the academic year. However, the Director, Students' Development may revise the Schedule and Host Colleges/Institutes/Departments because of changes in the schedule of examinations of the University of Mumbai or any unavoidable circumstances. The Director, Students' Development shall inform the revised 'Schedule and Host Colleges/Institutes/Departments' to all Colleges/Institutes/Departments of the University of Mumbai.

ii) The best research projects selected from the Zonal Round shall be allowed to present in the Final Round.

iii) The Convention shall be conducted in two modes (A) Poster and/or Model Presentation and

(B) Podium Presentation.

iv) Initially, every research project shall be presented in the form of Poster and/or Model. The time for Poster and/or Model Presentation shall be 3 minutes followed by the discussion with Judges of not more than 3 minutes. However, there shall not be disqualification of the participant if the time exceeds. The selected research projects shall be allowed for the Podium Presentation.

v) The selected research projects shall be presented in the form of Podium Presentation. Each research project shall be presented in a maximum of 7 minutes. A warning bell shall be given in the 6th minutes. The participant has to finish the presentation in the given time. In case, if the time is exceeded, the research project shall be disqualified. However, 15 seconds grace period shall be allowed. The presentation shall be followed by the discussion with the Judges, not exceeding more than 3 minutes. In the discussion only Judges are allowed to ask the questions to the participant(s).

vi) Use of fireworks / arms / explosive materials at the venue of the Convention is strictly prohibited. However, if it is unavoidable for an exhibit, its imitation may be used with the prior permission of the Principal/Director/Head of the Host College/Institute/Department and/or OSD, Aavishkar and/or Director, Students' Development, University of Mumbai.

vii) The best research projects shall be given ranks (First Rank / Second Rank / Third Rank / Consolation) based on the merit. The said ranks shall be declared at Prize Distribution Ceremony.

viii) First three winning research projects (First Rank, Second Rank and Third Rank) from UG and PG level and first two winning research projects (First Rank and Second Rank) from PPG level from each category shall be deputed to Aavishkar: Maharashtra State Inter-University Research Convention. However, only one student from the team shall represent the University of Mumbai for the Aavishkar: Maharashtra State Inter-University Research Convention. Such student from the team shall be selected by the Expert Panel of the University of Mumbai.

ix) In case, if the selected student withdraws his/her participation under unavoidable circumstances / valid reason then the opportunity shall be given to another student of the same team. The University of Mumbai reserves the right of selection of another student for Aavishkar: Maharashtra State Inter-University Research Convention. Such student from the same team shall be selected by the Expert Panel of the University of Mumbai. In case, if the whole winning team withdraws their participation under unavoidable circumstances / valid reason, then the opportunity shall be given to the next team in the order of merit. The University of Mumbai reserves the right of replacing research project(s) to be deputed for Aavishkar: Maharashtra State Inter-University Research Convention. However, the merit / rank of such project(s) declared at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) as well as Aavishkar:

Inter-Collegiate / Institute / Department Research Convention (Final Round) shall remain the same and shall be counted for Zonal Championship / Category-wise Championship / Overall Second Runner-up Championship / Overall Runner-up Championship / Overall Championship.

x) In case, in a particular level of category if there is no participation of students then the Director, Students' Development shall nominate the new research project in discussion with Expert Panel and OSD, Aavishkar. In case, in a particular level of category, there is no suitable research project, then University reserves the right to depute any other appropriate research project to Aavishkar: Maharashtra State Inter-University Research Convention. In such case, the Director, Students' Development shall nominate such research project in discussion with Expert Panel and OSD, Aavishkar.

5. Awards/ Honours and Scholarships

1. Selection Round

Certificate of Participation

Every participant and his/her mentor will receive the e-Certificate of Participation.

Certificate of Merit

The participants and their mentors whose research proposals are qualified for Final Round will receive the e-Certificate of Merit.

Zonal / District Championship

Certificate for Zonal / District Championship will be given to the College / Recognized Institute / University Department whose maximum research proposals are qualified from the particular Zone / District for Final Round.

2. Final Round

Certificate of Participation

Every participant and his/her mentor will receive the e-Certificate of Participation.

Certificate of Merit

The participants and their mentors whose research proposals secured First Rank, Second Rank, Third Rank and Consolation shall receive the e-Certificate of Merit.

Category-wise Championship Certificate for the Category-wise Championship will be given to the College / Recognized Institute / University Department scoring maximum points in a particular category. The calculation of the points shall be done on the basis of 3 points for First Rank, 2 points for Second Rank and 1 point for Third Rank. Overall Championship Rotating Overall Championship Trophy and Certificate shall be given to the College / Recognized Institute / University Department who scores maximum points at the Final Round. The calculation of the points shall be done on the basis of 3 points for First Rank, 2 points for Second Rank and 1 point for Third Rank.

Overall Runner Championship Rotating Overall Runner Championship

Trophy and Certificate shall be given to the College / Recognized Institute / University Department who scores second best maximum points at the Final Round. The calculation of the points shall be done on the basis of 3 points for First Rank, 2 points for Second Rank and 1 point for Third Rank.

Overall Second Runner Championship Rotating

Overall Second Runner Championship Trophy and Certificate shall be given to the College / Recognized Institute / University Department who scores third best maximum points at the Final Round. The calculation of the points shall be done on the basis of 3 points for First Rank, 2 points for Second Rank and 1 point for Third Rank.

Ten Grace Marks

All the participants securing First Rank, Second Rank and Third Rank from every level of each category shall be awarded with ten grace marks as per University Ordinance 0.229 after completion of the necessary formalities by the Examination Cell of the College / Recognized Institute / University Department / University of Mumbai. The Teacher Co-ordinator and/or concerned participant/s should download the Letter of Award for 10 Grace Marks from the website www.unimumbaidsd.com and complete the formalities as per the circular to be issued by Director, Students' Development in this concern.

Aavishkar: Maharashtra State Inter-University Research Convention

i) Aavishkar: Maharashtra State Inter-University Research Convention is organized every year for all State Universities in the Maharashtra by the Office of Hon'ble Governor, Raj Bhavan, Mumbai.

ii) As per Revised Guidelines for the Conduct of Aavishkar: Maharashtra State Inter-University Research Convention issued by the Office of Hon'ble Governor, Raj Bhavan, Mumbai, the University of Mumbai deposes 48 research projects to Aavishkar: Maharashtra State Inter-University Research Convention. It includes 6 categories and 3 levels as mentioned above in Point No. 3. The University of Mumbai deposes 3 research projects in UG level, 3 research projects in PG level and 2 research projects in PPG level in each category. The University deposes only one student per research project. iii) The contingent of the University of Mumbai shall follow the instructions given by Director, Students' Development / OSD, Aavishkar / Team Manager(s) / Staff of the Department of Students' Development time to time.

iv) It is obligatory for the selected student(s) to make themselves available for the grooming sessions, rehearsal sessions and Aavishkar: Maharashtra State Inter-University Research Convention, failing which their prizes bagged at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) and/or Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) shall be cancelled and his/her/their performance at the Convention may be considered as null and void. Such student and his/her/their College/Institute/Department shall be liable for appropriate disciplinary action as decided by the Board of Students' Development.

v) In the State level, the Convention shall be conducted in two modes

(A) Poster and/or Model Presentation and

(B) Podium Presentation.

vi) Initially, every research project shall be presented in the form of Poster and/or Model. The time for Poster and/or Model Presentation shall be 3 minutes followed by the discussion with

Judges of not more than 3 minutes. However, there shall not be disqualification of the participant if the time exceeds. The selected research projects shall be allowed for the Podium Presentation.

vii) The selected research projects shall be presented in the form of Podium Presentation. Each research project shall be presented in a maximum of 7 minutes. A warning bell shall be given in the 6th minutes. The participant has to finish the presentation in the given time. In case, if the time is exceeded, the research project shall be disqualified. However, 15 seconds grace period shall be allowed. The presentation shall be followed by the discussion with the Judges, not exceeding more than 3 minutes. In the discussion only Judges are allowed to ask the questions to the participant.

6. Certificate of Participation

1) Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) i) Certificate of Participation Every student participant and his/her mentor of the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) shall get the digital Certificate of Participation from the University of Mumbai.

ii) Certificate of Merit Every student participant and his/her mentor whose research project is selected for Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) shall get the digital Certificate of Merit from the University of Mumbai.

iii) Trophy and Certificate for the Zonal Championship Trophy and Certificate for the Zonal Championship shall be given to the College/Institute/Department whose maximum research projects are selected for Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round). If the student participant of one Zone participates in another Zone under certain circumstances, his/her merit shall be considered for the Zone to which his/her College/Institute/Department belongs.

2) Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round)

i) Certificate of Participation Every student participant and his/her mentor of the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) shall get the Certificate of Participation from the University of Mumbai.

ii) Certificate of Merit and Medal Every student participant and his/her mentor whose research project secured merit (First Rank / Second Rank / Third Rank / Consolation) at the Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round) shall get the Certificate of Merit from the University of Mumbai. The same student participants shall also get Gold, Silver and Bronze medal for First Rank, Second Rank and Third Rank respectively. iii) Trophy and Certificate for the Category-wise Championship The Trophy and Certificate for the Category-wise Championship shall be given to the College/Institute/Department scoring maximum points in the particular category. iv) Trophy and Certificate for the Overall Championship Rotating Trophy and Certificate for the Overall Championship shall be given to the College/Institute/Department scoring maximum points at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round). v) Trophy and Certificate for the Overall Runner-up Championship Rotating Trophy and Certificate for the Overall Runner-up Championship shall be given to the College/Institute/Department scoring second best maximum points at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round).

vi) Trophy and Certificate for the Overall Second Runner-up Championship Rotating Trophy and Certificate for the Overall Second Runner-up Championship shall be given to the College/Institute/Department scoring third best maximum points at Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Final Round). vii) Allocation of Points for Championship The points for the declaration of Category-wise Championship, Second Runner-up Championship, Runner-up Championship and Overall Championship shall be 5 for First Rank, 3 for Second Rank and 2 for Third Rank. viii) Ten Grace Marks/Equivalent Credits All student participants securing First Rank, Second Rank and Third Rank from every level of each category shall be awarded with ten grace marks/equivalent credits as per University Ordinance 0.229 after completion of the necessary formalities by the Examination Cell of the concerned College/Institute/Department OR Examination Section of the University of Mumbai. The Teacher Co-ordinator and/or concerned participant(s) shall download the Letter of Award of 10 Grace Marks from the portal available on www.unimumbaidsd.com and complete the formalities as per the circular issued by the Director, Students' Development in the month of March/April of the current academic year.

Aavishkar: Maharashtra State Inter-University Research Convention

- i) **Blazer** Every student participant selected for Aavishkar: Maharashtra State Inter-University Research Convention, Team Managers and Experts of the University of Mumbai shall be provided a Blazer with a Crest of University Logo by the University of Mumbai. Aavishkar: Inter-Collegiate / Institute / Department Research Convention Department of Students' Development, University of Mumbai 39
- ii) **Certificate of Participation** Every student participant of the University of Mumbai who participated in Aavishkar: Maharashtra State Inter-University Research Convention and his/her mentor are awarded the Certificate of Participation from the Host University on behalf of Raj Bhavan, Office of Hon'ble Governor of the Maharashtra.
- iii) **Certificate of Merit and Medal/Trophy** Every student participant of the University of Mumbai whose research projects secured First Rank, Second Rank and Third Rank in UG level, First Rank, Second Rank and Third Rank in PG level and First Rank and Second Rank in PPG level at Aavishkar: Maharashtra State Inter-University Research Convention are awarded the Certificate of Merit and Medal/Trophy from the Host University on behalf of Raj Bhavan, Office of Hon'ble Governor of the Maharashtra. The mentors of all these students shall get the Certificate of Merit.
- iv) **Cash Prizes** The details of cash prizes for Aavishkar: Maharashtra State Inter-University Research Convention are as follows

UG Level:

1 st Rank: Rs. 5000/-

2 nd Rank: Rs. 3000/-

3 rd Rank: Rs. 2000/-

PG Level:

1 st Rank: Rs. 5000/-

2 nd Rank: Rs. 3000/-

3 rd Rank: Rs. 2000/-

PPG Level:

1 st Rank: Rs. 5000/-

2 nd Rank: Rs. 3000/-

v) The Trophy and Certificate for the Category-wise Championship

The Trophy and Certificate for the Category-wise championship are awarded to the University scoring maximum points in the particular category.

vi) The Trophy and Certificate for the Overall Championship

The Trophy and Certificate for Overall Championship are awarded to the University scoring maximum points in Aavishkar: Maharashtra State Inter-University Research Convention.

vii) The Trophy and Certificate for the Overall Runner-up Championship

The Trophy and Certificate for Overall Runner-up Championship are awarded to the University scoring second best maximum points in Aavishkar: Maharashtra State Inter-University Research Convention..

viii) Fellowship

a) Fellowship are awarded to the students secured First Rank, Second Rank and Third Rank in UG level, First Rank, Second Rank and Third Rank in PG level and First Rank and Second Rank in PPG level at Aavishkar: Maharashtra State Inter-University Research Convention.

b) It is awarded to the students secured First Rank, Second Rank and Third Rank in UG level for 1 year, First Rank, Second Rank and Third Rank in PG level for 1 year and First Rank and Second Rank in PPG level for 2 years.

c) The fellowships are

UG Level:

1 st Rank: Rs. 35,000/-

2 nd Rank: Rs. 30,000/-

3 rd Rank: Rs. 25,000/-

PG Level:

1st Rank: Rs. 35,000/-

2nd Rank: Rs. 30,000/-

3rd Rank: Rs. 25,000/-

PPG Level:

1st Rank: Rs. 1,20,000/-

2nd Rank: Rs. 1,00,000/

Annual Report of Avishkar Committee –2022-23

1. Name of the Committee: Avishkar Research Convention

2. Formation of the Committee

Sr. No.	Name of the Teacher	Designation in the Committee
1	Dr. Manish Deshmukh	Zonal Coordinator
2	Dr. Sapna Jadhav	College Coordinator
3	Mrs. Bhakti Raut	College Co-coordinator
4	Mr. Vivek Kudu	Member
5	Lt. Anagha Padhye	Member
6	Dr. Dilip Yadav	Member
7	Mr. Ramdas Yede	Member
8	Ms. Shreya Mishra	Member
9	Mr. Bhushan Bhoir	Member
10	Mrs. Shailaja Palan	Member
11	Mrs. Rashmi Varade	Member
12	Mr. Harshal Chaudhari	Member
13	Mr. Tejas Chaudhari	Member

3. Activities undertaken by Avishkar Committee* (**Annexure-1** of each activity)

Sr. No.	Name of the Activity	Date	Participation
1	Workshop on Avishkar Research Competition	30/07/2022	120
2	Mentoring Session	Weekly	Around 25

(*Workshops, University Workshops, Mentoring Sessions, Project Guide/Expert Session)

4. Details of participation of students in Avishkar events in the year* 2022-23.

Sr. No.	Level	Date	Participation	Shortlisted for the final round	Winners
1	Zonal level		30	12	3
2	Intercollegiate level		12	3	1
3	State level		1	1	1

*(Zonal, University & State level)

5. Success story:

6. Photographs of the event

7. List of participants (With college seal and stamp)

Annexure-1

Activity Report of Avishkar

Workshop on Avishkar Research Convention

Venue : BMS Seminar Hall

1. About Avishkar Committee:

The purpose of initiating the organization of “Avishkar” every year by the Chancellor’s office is to provide a platform for youth from the various Universities and extending the helping hands to understand the research attitude and acquiring the scientific knowledge thus transforming for the cause of development. This will also educate youth and teachers to understand their responsibility towards societal development. Through this activity, the Research culture should be created amongst the students of our institute, with this view of our institute had formed a special committee for Avishkar Research Convention 2022-23 under the view of the college co-ordinator Dr. Sapna B. Jadhav (Asst. Professor, Department of Physics) and Zonal co-ordinator Dr. Manish M. Deshmukh (Asst. Professor, Department of Commerce). Avishkar research Committee members guided and motivated students after pandemic situation to keep the temperament of the students to participate in Avishkar Research Convention.

2. Brief description about the activity:

After pandemic circumstances, it is difficult to motivate students for participation Avishkar Research Convention as per regular mode. Through the online workshop, we have demonstrated the new format of the convention, the rules/regulation and different rounds of 15th State level Avishkar Research Convention. Also, we have provided the guidelines to present research proposals presentation.

3. Attendance report of activity conducted:

Separate PDF attached of scan copy of attendance

4. Activity Photos:

A) Invitation Mail

B) Photo of Workshop



Sonopant Dandekar Shikshan Mandali's

**SONOPANT DANDEKAR ARTS, V. S. APTE COMMERCE
AND M. H. MEHTA SCIENCE COLLEGE**

Tal. Palghar, Dist. Palghar, Pin - 401 404.

Code.: (02525) 252163, Prin : 252317 • Resi.: 252316

website : www.sdsmcollege.com • Email: sdsmcollege@yahoo.com

Ref. No. :

Date : 26th July, 2022

To
Dr. Minakshi Gurav
Associate Professor
D.G. Ruparel College of Arts, Science and Commerce

**Subject: An invitation as an Expert Speaker in State level Avishkar Research Convention
Competition**

Respected Madam,

As per the telephonic conversation with you regarding to your talk as an Expert speaker in **State level Avishkar Research Convention Competition**, I would like to extend my invitation for the same on 30th July, 2022.

I would like to give the brief introduction of the Institution. The founder visionaries established the institution on 14th August, 1968 with a dream of providing higher education to tribal area, especially for Adivasi and Women folk in the vicinity of the Thane district. (Now Palghar District).The dream came true in June, 1970 in the form of 'Sonopant Dandekar Arts, V. S. Apte Commerce College' in the name of philosopher saint and son of the soil Late Sonopant Dandekar.

Sonopant Dandekar Shikshan Mandali's College will be holding seminar on State Level Avishkar research convention competition. On behalf of S.D.S.M. College, Palghar, I would like to cordially invite you to our college for guidance on Avishkar Research competition.

I would be grateful if you took part on this occasion and shared your expertise on the topic with our participants. Your knowledge would be an excellent addition to our program.

We hope you would be able to fit this event in your busy schedule. I would be honored if you decide to take part on this occasion. Please do not hesitate to contact me if you have any query.

Looking forward to your acceptance hear back from you.

Thanking you,

Yours sincerely,

(Dr. Kiran Save)



Sonopant Dandekar Shikshan Mandali's

**SONOPANT DANDEKAR ARTS, V. S. APTE COMMERCE
AND M. H. MEHTA SCIENCE COLLEGE**

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Thanking you,

Yours sincerely,

(Dr. Kiran Save)



Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts, V. S. Apte Commerce &
M. H. Mehta Science College, Palghar-401404

Organizes

“Workshop on Avishkar Research Competition”

30th July, 2022

Resource Person

Dr. Minakshi Gurav

OSD of Avishkar Research Convention, University of Mumbai

Ruparel College, Mumbai



Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts, V. S. Apte Commerce &
M. H. Mehta Science College, Palghar-401404

WORKSHOP

ON

“State Level Avishkar Research Convention Competition”

Notice

All HOD's, mentors of Avishkar competition projects and students are hereby informed that our senior college has organized workshop for guidance on **“State Level Avishkar Research Convention Competition.”**

Resource Person: Dr. Minakshi Gurav

Date: 30th July, 2022

Time: 1.00 - 2.30 p.m.

Venue: BMS Seminar Hall.

P.S.: Attendance for all is mandatory

Avishkar Competition Co-ordinator

Mrs. Sapna B. Jadhav


Principal
Sonopant Dandekar Arts College,
V. S. Apte Commerce College &
M. H. Mehta Science College
PALGHAR (W.R.)
Dist. Palghar, Pin-401404



Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts, V. S. Apte Commerce &
M. H. Mehta Science College, Palghar

Organizes

“Workshop on Avishkar Research Competition”

30th July, 2022

PROGRAMME (Dated : 30th July, 2022)

12.30 p.m. : Arrival of the Guests

12.30 p.m. to 01.00 p.m. : LUNCH

Welcome (01:00 to 01.10 pm)

In Chair (Chief Guest)

Prof. Minakshi Gurav,
Ruparel College, Mumbai

01.10 p.m. to 01.15 p.m.	: Introduction of the Programme	Ms. Harshita Shenoy
01.15 p.m. to 01.20 p.m.	: Felicitation	
01.20 p.m. to 01.25 p.m.	: Welcome Speech	Principal Dr. Kiran Save
01.25 p.m. to 01.30 p.m.	: Introduction of Resource Person	Avishkar College Co- Ordinator Mrs. Sapna B. Jadhav

Programme

01.25 p.m. to 02.50 p.m.	: Guidance on Avishkar Research Competition	At the hands of Dr. Minakshi Gurav
02.00 p.m. to 02.10p.m.	: Vote of Thanks	Lt. Anagha Deshmukh

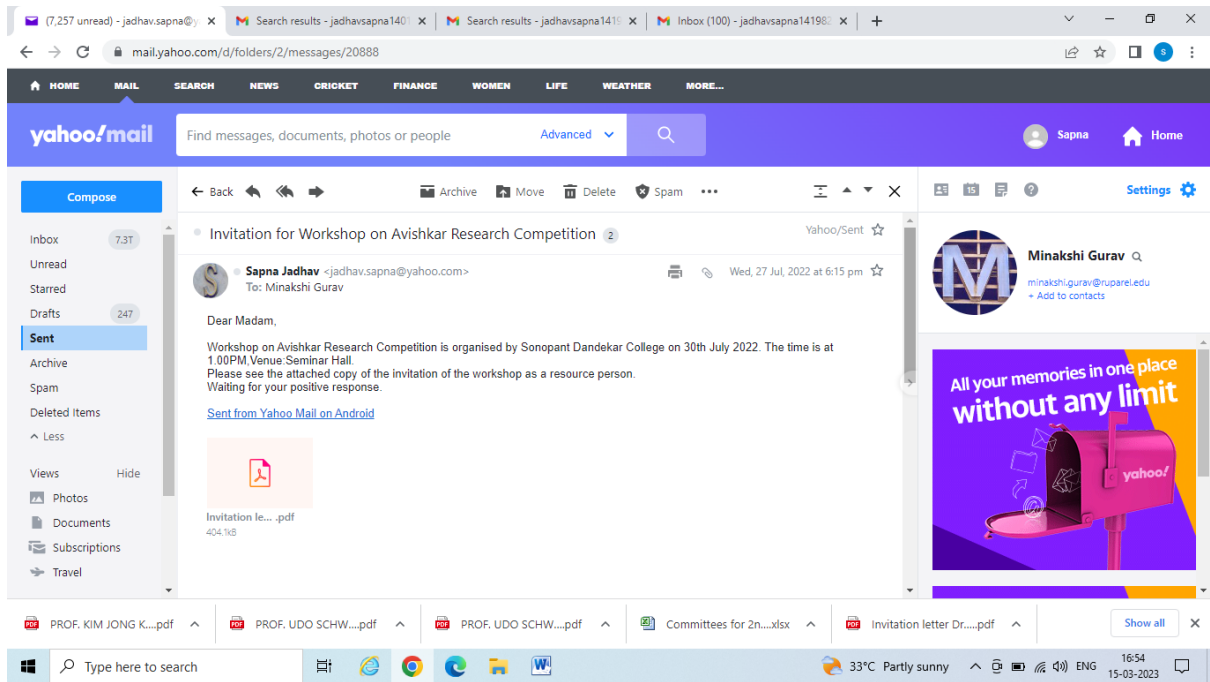


Photo of Workshop









University of Mumbai Department of Students'
Development
17th Inter-Collegiate/Institute/Department Avishkar
Research Convention

AY-2022-23

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)

Zone: Palghar

Consolidated Entry Form-I (for Research Project Fees)

Sr.No	Category	Level	No. of Research Projects	Total No. of Participants	Entry Fees per Research Project	Amount
1	Humanities, Languages and Fine Arts	UG	4	15	100	400
		PG	2	6	100	200
		PPG			100	0
2	Commerce, Management and Law	UG			100	0
		PG	1	1	100	100
		PPG			100	0
3	Pure Sciences	UG	4	8	100	400
		PG	5	11	100	500
		PPG	1	1	100	100
4	Agriculture and Animal Husbandry	UG	2	3	100	200
		PG	4	9	100	400
		PPG			100	0
5	Engineering and Technology	UG	8	26	100	800
		PG			100	0
		PPG			100	0
6	Medicine and Pharmacy	UG	2	6	100	200
		PG	1	2	100	100
		PPG	1	1	100	100
Grand Total			35	89		3500

Teacher Co-ordinator

College Seal

Principal

Date:

Place:

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

Category: Humanities, Languages and Fine Arts

Level: UG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
1	LGBTQ	Burange Om Prakash (Presenter)	09/08/2003	S.Y.B.A.F	Xyz	20113	
2	LGBTQ	Patel Astha Kalpesh (Presenter)	21/10/2002	T.Y.B.M.S	Xyz	98028	2020016401231580
3	LGBTQ	Patel Ishika Pralay (Presenter)	02/05/2003	S.Y.B.A.F	Xyz	20037	2021016400861580
4	LGBTQ	Shinde Sayali Babu (Presenter)	23/06/2003	S.Y.B.A.F	Xyz	20038	2021016400831080
5	LGBTQ	Mulay Nivedita Dimesh	23/02/2003	T.Y.B.M.S	Xyz8855003	98084	2020016401240480
6	Do Electric Bikes Make Sense Over Petroleum Bikes. ?	Vekhnde Unnat Dipak (Presenter)	26/06/2003	T.Y.B.SC.		2676	2020016400908720
7	Do Electric Bikes Make Sense Over Petroleum Bikes. ?	Shaikh Shaziya Salim	23/04/2003	T.Y.B.SC.		2678	2020016400983550
8	Do Electric Bikes Make Sense Over Petroleum Bikes. ?	Mali Manasvi Ghanshyam (Presenter)	17/03/2003	T.Y.B.SC.		2673	2020016400983970
9	BINGE (WEB SERIES) WATCHING IN NEW ERA	Rajwadi Gaurav Anthony	13/03/2002	T.Y.B.M.S		98091	2020016401245890
10	BINGE (WEB SERIES) WATCHING IN NEW ERA	Thakur Jeet Dhiraj	31/08/2001	T.Y.B.M.S		98035	2020016401240040

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

11	BINGE (WEB SERIES) WATCHING IN NEW ERA	Pawar Surbhi Bajirao	04/12/2001	T.Y.B.A. F.		21031	2020016401233710
12	BINGE (WEB SERIES) WATCHING IN NEW ERA	Palkar Samiksha Anant (Presenter)	19/04/2001	T.Y.B.A. F.		21024	2020016401229740
13	पालघर तालुका यातील फुदगी समाजावर आयोजित समाजासंबंधी तज्ञांच्या असलेल्या भाव	Patil Athashri Pankaj (Presenter)	27/11/2001	B.A.	A	755	Xyz
14	पालघर तालुका यातील फुदगी समाजावर आयोजित समाजासंबंधी तज्ञांच्या असलेल्या भाव	Patil Swaranjali Anil	12/07/2003	TYBA	A	691	Xyz
15	पालघर तालुका यातील फुदगी समाजावर आयोजित समाजासंबंधी तज्ञांच्या असलेल्या भाव	Churi Harshit Ramesh	16/03/2003	TYBA	A	732	Xyz

Level: PG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
16	Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.	Kini Arpita Atmaram (Presenter)	24/12/2000	M.S C PART II	Xyz	47008	
17	Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.	Singh Aabha Manojkumar	13/09/1999	M.S C PART II	Xyz	47021	2018016401507650
18	Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.	Tiwari Alok Shivshankar	03/07/2000	M.S C PART II	Xyz	47014	2017016401584170

19	महामंडळातील विद्यार्थ्यांच्या बोलीवषयक दृष्टीकोन आणि तो संविधानात करण्यासाठी उपाययोजना	Jadhav Akshata Kishor (Presenter)	15/03/2000	M.A	A	709	Xyz
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Consolidated Entry Form-II (for Registration of Research Project)

20	महाराष्ट्र राज्यीन विश्वविद्यालय बोलीविविषयक दृष्टीकोन आणि तो संविधित करणया उपाययोजना	Panhale RituArun	07/12/2000	MA	A	710	Xyz
21	महाराष्ट्र राज्यीन विश्वविद्यालय बोलीविविषयक दृष्टीकोन आणि तो संविधित करणया उपाययोजना	More Krutika Mangesh	04/12/2001	MA	A	705	Xyz

Category: Engineering and Technology

Level: UG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
22	Personal Security Guard(PSG)	Khatik Chetan Kishan (Presenter)	22/09/2002	T.Y.BS C(IT)	A	69016	2020016401131340
23	Animal Intrusion Detection device using IoT	Raut Khushi Santosh (Presenter)	29/10/2003	S.Y.I.T.		68018	
24	Animal Intrusion Detection device using IoT	Patil Yash Hemant	22/12/2003	S.Y.I.T.		68039	
25	Animal Intrusion Detection device using IoT	Jaiswal Krishna Vinod	19/02/2001	S.Y.I.T.		68086	
26	Animal Intrusion Detection device using IoT	Jadhav Dipali Nitin	25/01/2001	S.Y.I.T.		68017	
27	LUMINATING BOTTLE BY USING IOT	Pawar Priyanka Sambhaji (Presenter)	04/02/2002	T.Y.I.T.		69042	
28	LUMINATING BOTTLE BY USING IOT	Shrivastav Aditi Amresh kumar	05/02/2003	T.Y.I.T.		69044	

Consolidated Entry Form-II (for Registration of Research Project)

29	LUMINATING BOTTLE BY USING IOT	Kothari Dhrutika Bhushan	05/02/2002	T.Y.I.T.		69043	
30	LUMINATING BOTTLE BY USING IOT	Vishwakarma Isha Mahendra	25/01/2002	T.Y.I.T.		69045	
31	IOT BASED RADAR DETECTION USINGARDUINO	Dandekar Siddique Saquib (Presenter)	02/09/2004	S.Y.I.T.		68025	
32	IOT BASED RADAR DETECTION USINGARDUINO	Bafna Aanchal Sagar	25/04/2003	S.Y.I.T.		68024	
33	IOT BASED RADAR DETECTION USINGARDUINO	Bhirud Khushbu Pramod	22/01/2004	S.Y.I.T.		68030	
34	Floor Cleaning Robot	Save Samruddhi Milind (Presenter)	18/02/2003	S.Y.I.T.		68022	
35	Floor Cleaning Robot	Sabale Ishwary Gajanan	13/04/2004	S.Y.I.T.		68013	
36	INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE	Khot Atharva Ramchandra	09/11/2003	S.Y.B.SC	A	68006	Xyz
37	INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE	Mahato Aarti Jaylal (Presenter)	23/07/2002	S.Y.B.SC	A	68031	Xyz
38	INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE	Agrawal Mansi Devendra	01/08/2003	S.Y.B.SC	A	68031	Xyz
39	Smart Mirror -Mirror with computing capabilities	Bind Abhishek Somaru (Presenter)	25/12/2000	T.Y.B.S C	Xyz	66040	

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

40	Smart Mirror -Mirror with computing capabilities	Mali Ritvik Bhupesh (Presenter)	02/12/2002	T.Y.B.S C	Xyz	66020	2020016401232560
41	Smart Mirror -Mirror with computing capabilities	Pandey Anant Anil (Presenter)	01/09/2002	T.Y.B.S C	Xyz	66021	2020016401231570
42	Smart Mirror -Mirror with computing capabilities	Patil Pratham Narottam (Presenter)	22/08/2001	T.Y.B.S C	Xyz	66030	2020016401257460
43	Plant monitoring system	Mishra Shriram Sanat (Presenter)	10/08/1999	TY BSC	A	66032	2020020000000000
44	Plant monitoring system	Kadu Deep Bharat	30/07/2002	TY BSC	A	66019	2020020000000000
45	Plant monitoring system	Raut Aniket Jaiprakash	26/12/2001	TYBSC	A	66022	
46	Plant monitoring system	Singh Nilesh Kshitij	30/05/2004	SY BSC (CS)	A	65040	
47	Plant monitoring system	Ugarkar Sumedh Sachin	14/12/2002	SY BSC (CS)	A	65049	

Category: Medicine and Pharmacy

Level: PPG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
48	SYNTHESIS ANDSTUDY OF BIOLOGICAL ACTIVITIES OF BIMETALLIC COMPLEX	Parab Shraddha Shankar (Presenter)	03/12/1993	PH.D.	Nil	22	

Level: PG

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
49	Anti-microbial Activity of Natural Deep Eutectic Solvent(DES) of Eugenol and Cetrimide	Dhanmeher Gauri Narendra (Presenter)	05/01/1999	M.SC. PART II	A	613	2017016401347960
50	Anti-microbial Activity of Natural Deep Eutectic Solvent(DES) of Eugenol and Cetrimide	Shivgan Sahili Sudhakar (Presenter)	12/09/2000	M.SC. PART II	A	633	2018016401504990

Level: UG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
51	PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS	Raut Mansi K (Presenter)	28/12/2001	T.Y.B.S C	Xyz	Xyz	
52	PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS	Behere Akanksha M (Presenter)	19/09/2003	S.Y.B.S C	Xyz	Xyz	
53	PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS	Edachali Alakanandha Karthikeyan (Presenter)	28/03/2003	S.Y.B.S C	Xyz	Xyz	
54	Risk Assessment Of Adolescents For Diabetes	Gite Varsha Ashok	04/11/2002	TYBSC		26162	2020016400894400
55	Risk Assessment Of Adolescents For Diabetes	Dhangada Priyanka Ramesh (Presenter)	25/04/2001	TYBSC		26170	2020016400905300

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

56	Risk Assessment Of Adolescents For Diabetes	Jadhav Tanvi Sanjay (Presenter)	14/08/2002	TYBSC		29154	2020016401049760
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Category: Pure Sciences

Level: PPG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
57	TO STUDY ANTIMICROBIAL ACTIVITY OF BIMETALLIC COMPLEX	Shinde Pooja Vilas (Presenter)	02/10/1994	PH.D.	Nil	23	

Level: PG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
58	Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract	Gupta Sumit Manoj (Presenter)	03/03/2000	M.SC . PART II		608	2018016400127340
59	Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract	Hussen Rabina Zakir (Presenter)	04/05/2001	M.SC . PART II	Nil	626	2018016401503470
60	Diversity of Insects in Apti (Khurd) Village of Vikramgad Tehsil, Palghar.	Kudu Harshal Pundalik (Presenter)	31/07/2000	M.SC . PART II	Nil	47003	2018016402553091

61	Bio-waste to Bio-catalyst:An efficient route for chemical synthesis	More Babita Vijay (Presenter)	21/11/2000	M.SC. PART 2	Xyz	637	2018016401503500
62	Bio-waste to Bio-catalyst:An efficient route for chemical synthesis	Patil Anjali Laxman	19/11/2000	M.SC . PAR TII	Xyz	642	2018016401503390

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

63	Bio-waste to Bio-catalyst:An efficient route for chemical synthesis	Raul Mayuri Mahesh	26/01/2001	M.SC . PAR TII	A	638	2018016401016890
64	Bio-waste to Bio-catalyst:An efficient route for chemical synthesis	Shingada Pankesh Mohan	28/07/2000	M.SC . PAR TII	A	639	2018016401319400
65	Piezo Electric Harvesting : Towards Green Energy	Jha Aashish Jaygovind (Presenter)	06/06/1998	SY	Xyz	45002	
66	Piezo Electric Harvesting : Towards Green Energy	Kadu Grinabh Naresh	30/12/2000	M.S C PAR TII	Xyz	45006	Xyz
67	Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract	Hussen Rabina Zakir (Presenter)	04/05/2001	M.S C PAR TII	Xyz	626	2018016401503470
68	Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract	Gupta Sumit Manoj	03/03/2000	M.S C PAR TII	Xyz	608	2018016400127340

Level: UG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
69	Synthesis of Bio- Adsorbent for Dyeremoval	Jain Bhavesh Dinesh (Presenter)	27/02/2003	TYBSC	Xyz	95022	
70	Synthesis of Bio- Adsorbent for Dyeremoval	Rai Vani dutt Ashokkumar	20/07/2004	SYBSC	Xyz	94009	Xyz
71	Synthesis of Bio- Adsorbent for Dyeremoval	Prajapati Om Sarojkumar	09/01/2003	SYBSC		94010	Xyz
72	Effect of Sunlight on Quality of Packaged Water	Patel Mokshika Amrut (Presenter)	25/09/2003	S.Y.B.S C	Xyz	25005	

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (CODE: 5-05)(Zone: Palghar)

Consolidated Entry Form-II (for Registration of Research Project)

73	Smartlab Innovators	Harad YadnyeshSanjay (Presenter)	17/02/2001	TYBSC	Xyz	2701	2019016401204190
74	Smartlab Innovators	Harad YadnyeshSanjay (Presenter)	17/02/2001	TYBSC	Xyz	2701	2019016401204190
75	Smartlab Innovators	Pawade SahilSantosh	26/08/2002	TYBSC	Xyz	2671	2020016400911040
76	Smartlab Innovators	Pawade SahilSantosh	26/08/2002	TYBSC	Xyz	2671	2020016400911040

Category: Agriculture and Animal Husbandry

Level: UG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
77	Soilless Cultivation of Indigenous Variety Crop of Palghar District for Conservation of Biodiversity	Patil Dhruvika Dinesh (Presenter)	20/01/2004	S.Y.B.SC	A	2302	2021016401061900
78	Herbal Air Room Freshener - An Application of Ethnobotany	Siddiqui Sana parveen Md. kausar (Presenter)	09/01/1999	TY BSC	A	2708	2020020000000000
79	Herbal Air Room Freshener - An Application of Ethnobotany	Siddiqui Shama parveen Md. kausar	23/03/2000	TYBSC	A	2709	2020020000000000

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
80	Biorise-A perfect Agri-solution!	Gautam Kishankumar Bindulal (Presenter)	03/07/2002	M.SC.PAR TII		13014	2018016401496540 page 9/11

College: Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar (**CODE: 5-05**)(**Zone: Palghar**)

Consolidated Entry Form-II (for Registration of Research Project)

81	Biorise-A perfect Agri-solution!	Prajapati Sonelal Santhoshkumar (Presenter)	05/01/2001	M.SC.PAR TII		13012	2018016401506770
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82	Nanoparticles based biofilters using carbonised coconut husk for effluent water treatment	Nair Sarath Unnikrishnan (Presenter)	20/10/2000	M.SC.PART II		13007	
83	Nanoparticles based biofilters using carbonised coconut husk for effluent water treatment	Nair Arun Muralidharan (Presenter)	20/04/2000	M.SC.PART II		13006	
84	Utilization Of Floral Waste into Aromatic Amicable Wrist Band	Kale Madhu Ganesh (Presenter)	11/10/2000	M.SC. PART II	A	6581	2018016401503940
85	Utilization Of Floral Waste into Aromatic Amicable Wrist Band	Padvale Roshani Santosh	24/08/2000	M.SC. PART II	A	Xyz	2018016401506570
86	Herbal Aids to Save User Against the Common Pathogens	Potdar Omkari Mangesh (Presenter)	13/08/2001	M.SC PART I	Xyz	15004	2019016402489310
87	Herbal Aids to Save User Against the Common Pathogens	Rane Surabhi Mohan	31/10/2000	M.SC PART I		15005	2019016401065300
88	Herbal Aids to Save User Against the Common Pathogens	Rane Surabhi Mohan	31/10/2000	M.SC PART I		15005	2019016401065300

Category: Commerce, Management and Law

Level: PG

Sr.No	Project Title	Name	DOB	Class	Division	Roll No	PRN/PG Registration No.
89	Demystifying women shopping behavior preand post Covid 19 in Palghar	Sankhe Mitali Suryakant (Presenter)	07/11/1992	M.COM PART I	A	11102	2010016401391832



Sonopant Dandekar Shikshan Mandal's

**SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE AND
M.H. MEHTA SCIENCE COLLEGE, PALGHAR**

Palghar, Dist – Palghar, Pin – 401 404, E – Mail: sdscollege@yahoo.com

Year wise consolidated Report of Avishkar competition

Sr. No.	Title	Name of the Student	Name of the Mentor	category	level	Zonal /Inter collegiate	link/photo of presentation/poster
1	Remote Monitoring System	Yadnesh Harad	Dr. Sapna Jadhav	Pure Science	UG	State Level	Poster: https://drive.google.com/file/d/17uofgJcM1IpeuE8AYPIQ9HzT89x0RxLh/view?usp=share_link PPT: https://docs.google.com/presentation/d/1vEZZXrYvQa_2hR7yXHTDg_C9yZuOwGqY/edit?usp=share_link&oid=115741290271181653586&rtpof=true&sd=true
2	Animal Intrusion Detection device using IoT	1.Raut Khushi Santosh 2.Patil Yash Hemant	Mrs. Bhakti Raut	Engineering and Technology	UG	Zonal	https://drive.google.com/drive/folders/1oQO_of2n7KqRklm30kWeHAOU96OIBZdG?usp=share_link

		3.Jaiswal Krishna Vinod 4.Jaiswal Krishna Vinod					
3	LUMINATING BOTTLE BY USING IOT	1.Pawar Priyanka Sambhaji 2.Shrivastav Aditi Amresh kumar 3.Kothari Dhritika Bhushan 4.Vishwakarma Isha Mahendra		Engineer ing and Technol ogy	UG	Zonal	https://drive.google.com/drive/folders/1oQO_of2n7KqRkIm30kWeHAOU96OIBZdG?usp=share_link
4	IOT BASED RADAR DETECTI ON USING ARDUINO	1.Dandekar Siddique Saqib 2.Bafna Aanchal Sagar 3.Bhirud Khushbu Pramod		Engineer ing and Technol ogy	UG	Zonal	https://drive.google.com/drive/folders/1oQO_of2n7KqRkIm30kWeHAOU96OIBZdG?usp=share_link
5	Personal Security Guard(PS G)	Khatik Chetan Kishan		Engineer ing and Technol ogy	UG	Zonal	https://drive.google.com/drive/folders/1oQO_of2n7KqRkIm30k

							WeHAOU96OIBZdG?usp=share_link
6		Harshal Kudu		Pure Science	PG	Zonal	<p>PPT:</p> <p>https://drive.google.com/file/d/1Scgz6i34v0fSpqYzWNHJOcGWqpyMqSfE/view?usp=drivesdk</p> <p>Poster :</p> <p>https://drive.google.com/file/d/1Se8kdhRU6J4V8MvaNCNZvOvIRLzonNa6/view?usp=drivesdk</p>
7	Demystifying Women Shopping Behaviour Pre and Post Covid 19 in Palghar	Mitali Sankhe	Dr. Manish Deshmukh	Commerce, Management & Law	PPG	Zonal Level	<p>PPT:</p> <p>https://docs.google.com/presentation/d/1qP8VcmZa_d1vEqxk-h3HwmPPQy4ruA38/edit?usp=share_link&oid=106178760019501495124&rtpof=true&sd=true</p>

8	Nanoparticle based biofilter using carbonised coconut husk for effluent water treatment	Sarath Nair/ Arun Nair		Pure science	PG	Zonal	<p>PPT: https://docs.google.com/presentation/d/1I3ZXXzEIqUICSUcjpCiqY-JcatKB3YXz/edit?usp=drivesdk&oid=105171957795022186338&rtpof=true&sd=true.</p> <p>Poster: https://docs.google.com/presentation/d/1I3_64FgV3O_Iq5Xukv5fjME7UnDLPetu/edit?usp=drivesdk&oid=105171957795022186338&rtpof=true&sd=true</p>
9	FLOOR CLEANING ROBOT USING IoT	SamruddhiS ave		Engineering and Technology	PG	Zonal	<p>Poster: https://drive.google.com/drive/folders/1vn</p>

		Ishwary Sabale					QtKQtN-S6D8VcYilGVneqKNcWRA_Qu PPT: https://drive.google.com/drive/folders/1vnQtKQtN-S6D8VcYilGVneqKNcWRA_Qu?usp=share_link
10	Biorise - A perfect Agri-solution	Gautam Kishan , Sonelal Prajapati		Pure Science	PG	Intercollegiate Level	PPT: https://drive.google.com/file/d/1zI3s1VcUnCT1KVJsPxn9K7imhz3y9FFK/view?usp=drivesdk Poster: https://docs.google.com/presentation/d/1zI3s1VcUnCT1KVJsPxn9K7imhz3y9FFK/edit?usp=drivesdk&oid=109954156532049360653&rtpof=true&sd=true

11	Synthesis of Bio-adsorbent for dye removal	Bhavesh jain/Om Prajapati/ VaniDatt Rai	Dr. Shaileja Palan	Pure Sciences	PG	Intercollegiate	<p>(PPT)</p> <p>https://docs.google.com/presentation/d/1J7Dm8V5E9w0NtKoVA7vqpYjvYd9Whm vTxCPYlSy0K6c/edit?usp=drivesdk</p> <p>poster:</p> <p>https://docs.google.com/presentation/d/1mEnEiWYQWe2zWfWhAPqqXWMcig14br4N/edit?usp=drivesdk&oid=116017194271406279112&rtpof=true&sd=true</p>
12	Plant Monitoring System	Ram Mishra, Deep kadu, Sumedh Ugarkar, Kshitij Singh, Aniket Raut -	Ms.Tejal	Engineering and Technology	UG	Zonal	<p>(PPT)-</p> <p>https://drive.google.com/file/d/1C4X7BvzYIEWYYjafFK62McEJ_qV8r1he/view?usp=sharing</p> <p>(Poster)-</p> <p>https://drive.google.com/file/d/1Dbb0Wtt</p>

							fXUNniNZ-JNUkG0i-fzHxqlX/view?usp=sharing
13	Phyllanthus Emblica- A Rich Source Of Antimicrobial And Antioxidant Phytochemicals	Mansi Raut, Alaknanda E, Aakansha Bahere-	Ishwari Mehta	Medicines and Pharmacy	UG	Intercollegiate	Poster: https://drive.google.com/file/d/1TY7UWNukhMir6WNYfbWID3DVqjfM7G5X/view?usp=drivesdk PPT(Zonal) https://docs.google.com/presentation/d/1PyAOaFoPI_yrIkq0R1gTbX2qb0WLTVM/edit?usp=drivesdk&oid=110490727616736278699&rtpof=true&sd=true PPT(Intercollegiate) https://drive.google.com/file/d/1rai5cVg0GGWoWv4qPzVbLiMpJ1o2HxcN/view?usp=drivesdk
14	Risk Assessment of Adolescents for Diabetes	Priyanka Dhangada/Tanvi Jadhav/Varsaha Gite	Jobin George	Humanities, Languages and Fine Arts	UG	Intercollegiate Level	Poster: https://docs.google.com/presentation/d/1Gji8VxnRUSFaC6_RMgNbIMgslsDkx5vc/edit?usp=share_link&oid=11812305112

							9671019654&rtpof=true&sd=true PPT: https://docs.google.com/presentation/d/1VsqfqK-8jHT6V90nWrZMRCnfHvD3rcCV/edit?usp=share_link&oid=118123051129671019654&rtpof=true&sd=true
15	Post covid childhood obesity and related health	Arpita Atmaram Kini, Aabha Manojkumar Singh, Alok Shivshankar Tiwari -	Dr. Harshad Vanmali	Humanities, Languages and Fine Arts	PG	Intercollegiate Level	Zonal Level -Poster https://drive.google.com/file/d/1q9SdY7oHVOF1f2KTvQAfPYI6OG1qRYKM/view?usp=drivesdk PPT: https://1drv.ms/p/s!AjY6RDk-z-0_gTTYfNUXsfuiySB1 Intercollegiate Level – (Poster) https://drive.google.com/file/d/1q5XALWU2ezwZ5WME6WeI90VDhUBGxYQ0/view?usp=drivesdk PPT: https://1drv.ms/p/s!AjY6RDk-z-

							0_gTTYfNUXsfuiySB1
16	Herbal Aids to Protect the User Against the Common Pathogens	Omkari Potdar ,Surabhi Rane -	Tejes Chaudhary	Pure Science	PG	Zonal Level.	<p>Zonal Level:</p> <p>Ppt https://docs.google.com/presentation/d/1Ry63dmJ1njRI3o0piRRdEnNKoud4jH/edit?usp=drivesdk&oid=118152439393273300035&rtpof=true&sd=true</p> <p>Poster https://drive.google.com/file/d/1S0voanqksq3QRCThwS04Rib9LccdQp9w/view?usp=drivesdk</p>
17	Anti-microbial Activity of Natural Deep Eutectic Solvent (DES) of Eugenol and Cetrimide	Sahili sudhakar shivgan/Gauri Narendra Dhanmeher/aniket rajendra patil -	Dr. Dilip Yadav	Pharmacy	PG	Zonal	<p>PPT: https://drive.google.com/drive/folders/1lo9rp_dv5YbMQh_syzUAHjOcasio8h6V?usp=share_link</p> <p>POSTER: https://drive.google.com/drive/folders/14vni-jcv9xCKzewwrfHzB oiWSDBIR1mZ?usp=share_link</p>

18		Manasvi Mali/Unnat Vekhande/S haziya Shaikh -	Mrs. Dipali Mali	Humanities, Languages and Fine Arts	UG	Zonal level	<p>PPT:</p> <p>https://docs.google.com/file/d/1pEJrewio0vHEGCTBzcEYNCCDrWsUOXQd/edit?usp=docslist_api&filetype=mspresentation</p> <p>POSTER:</p> <p>https://drive.google.com/file/d/1bpR3wWPiI8QQi7G6w2NtJg9r9U9fuUfy/view?usp=drivesdk</p>
19	Binge (web series) watching in new era	Surbhi Pawar/ Samiksha Palkar/Jeet Thakur/ Gaurav Rajwadi-	Archana Pawar	Humanities, Language and Fine Arts	UG	Zonal	<p>PPT:</p> <p>https://docs.google.com/presentation/d/1Kot3vIT8V42SJ0gbcvod867UJqqg7Cr/edit?usp=share_link&oid=100206788533971736188&rtpof=true&sd=true</p> <p>POSTER:</p> <p>https://docs.google.com/presentation/d/1EuXrANr4I7zH0ELbErDHQPsjETOj9a6/edit?usp=share_link&oid=100206788533971736188&rtpof=true&sd=true</p>

20		Ms Babita More, Anjali Patil, Pankesh Shingada, Mayuri Raul	Hrushikesh Deokar	Pure Sciences	PG	Intercollegiate	PPT: https://drive.google.com/drive/folders/1bPIHAIYKiv4mVGDDpyiuS59hBktHXAPs?usp=sharing

Success Story

University of Mumbai 15th State Level Avishkar Research Convention 2022-23

The convention is designed with the intention to develop a research culture and scientific temper among the students, scholars and teachers from undergraduate to doctoral level in the state of Maharashtra. It is a matter of great pride for the youth of the Maharashtra State that, the Office of the Chancellor has initiated four major events in the interest of the student community in various fields. The Avishkar, a State Level Inter-University Research Convention is one of the most prestigious events among those. The purpose of initiating the organization of “Avishkar” every year by the Chancellor’s office is to provide a platform for youth from the various Universities and extending the helping hands to understand the research attitude and acquiring the scientific knowledge thus transforming for the cause of development. This will also educate youth and teachers to understand their responsibility towards societal development.

Through this activity, the Research culture should be created amongst the students of our institute, with this view of our institute had formed a special committee for Avishkar Research Convention 2022-23 under the view of the college co-ordinator Dr. Sapna B. Jadhav (Asst. Professor, Department of Physics) and Zonal co-ordinator Dr. Manish M. Deshmukh (Asst. Professor, Department of Commerce).

The Inter collegiate Avishkar Research Convention 2022-23 was scheduled on 11th December, 2022 for our college zone i.e. Zone V. The committee members has guided and motivated to our student of different categories for UG, PG and PPG levels for 15th Avishkar research convention 2022-23. About 35 groups of various streams from our college participated in the Research convection with their innovative ideas. Almost 12 Projects won the gold medal at zonal level from various categories at different levels under the guidance of college mentors. Our institute won three projects at the intercollegiate level competition. In which, one Gold medal under the title of “SMARTLAB INNOVATOR” in pure science at UG level, Bronze medal under the title of “महाविद्यालयीन विद्यार्थांचा बोलिविषयक दृष्टीकोन आणि तो संविधित करण्याचा उपाययोजना” in Humanities, Languages and Fine Arts at PPG and Consolation prize under the title

of “POST COVID CHILDHOOD OBESITY AND RELATED HEALTH PROBLEMS IN PALGHAR” at PPG level.

It's historical moment for our institute, for the first time in the history of institute, a student Yadnesh Harad (T. Y. B.Sc. Physics) won Gold Medal at 15th State Level Avishkar Research Convention under the guidance of Teacher mentor Dr. Sapna Bakul Jadhav and herself was champion of 14th State Level Avishkar Research Convention. He had presented project with working model in Pure Science category of undergraduate (UG) level, under the title on “SMARTLAB INNOVATOR”.

Photos of Success story









1. Photos of Certificate of Team Manager (At Zonal, Intercollegiate & State level)

A) Zonal Level

- I. Certificates of Participant**
- II. Certificates of Participant Mentor**

B) Intercollegiate Level

- I. Certificates of Selected Participant**
- II. Certificates of Participant Mentor**
- III. Certificates of participants Selected for State Level**

C) State Level

- I. Certificates of State Level Winner**
- II. Certificates of Mentor**



University of Mumbai

17th
Aavishkar

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Jadhav Tanvi Sanjay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai

December 11, 2022
Palghar





University of Mumbai

17th
Aavishkar

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Dhangada Priyanka Ramesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai

December 11, 2022
Palghar





University of Mumbai

17th
Aavishkar

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Gite Varsha Ashok** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai

December 11, 2022
Palghar





University of Mumbai

17th
Aavishkar

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Patil Swaranjali Anil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai



December 11, 2022
Palghar





University of Mumbai

17th
Aavishkar

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Patil Athashri Pankaj** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG Level** at **17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round)** organized by the University of Mumbai at **Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar** on **December 11, 2022** for **Palghar** zone.

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This is to Certify that **Ms. Mulay Nivedita Dimesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LGBTQ in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Shinde Sayali Babu** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LGBTQ in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Patel Ishika Pralay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LGBTQ in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Patel Astha Kalpesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LGBTQ in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Mali Manasvi Ghanshyam** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....? in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Shaikh Shaziya Salim** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Palkar Samiksha Anant** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **BINGE (WEB SERIES) WATCHING IN NEW ERA** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Pawar Surbhi Bajirao** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **BINGE (WEB SERIES) WATCHING IN NEW ERA** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. More Krutika Mangesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Panhale Ritu Arun** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संबंधित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Jadhav Akshata Kishor** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Singh Aabha Manojkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Kini Arpita Atmaram** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Churi Harshit Ramesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG Level** at **17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round)** organized by the University of Mumbai at **Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar** on **December 11, 2022** for **Palghar** zone.

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This is to Certify that **Mr. Burange Om Prakash** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LGBTQ in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Vekhande Unnat Dipak** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Thakur Jeet Dhiraj** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **BINGE (WEB SERIES) WATCHING IN NEW ERA** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Rajwadi Gaurav Anthony** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **BINGE (WEB SERIES) WATCHING IN NEW ERA** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Tiwari Alok Shivshankar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Sankhe Mitali Suryakant** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Demystifying women shopping behavior pre and post Covid 19 in Palghar in Commerce, Management and Law** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Patel Mokshika Amrut** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Effect of Sunlight on Quality of Packaged Water** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Hussen Rabina Zakir** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract in Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Raul Mayuri Mahesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Patil Anjali Laxman** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. More Babita Vijay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mrs. Shinde Pooja Vilas** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **TO STUDY ANTIMICROBIAL ACTIVITY OF BIMETALLIC COMPLEX** in **Pure Sciences** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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Certificate of Participation

This is to Certify that **Mr. Prajapati Om Sarojkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Rai Vani Dutt Ashokkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Jain Bhavesh Dinesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Pawade Sahil Santosh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **mart Product to Reduce Human Errors in Industries in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Harad Yadnyesh Sanjay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **mart Product to Reduce Human Errors in Industries in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Gupta Sumit Manoj** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract in Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Kadu Grinabh Naresh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Piezo Electric Harvesting : Towards Green Energy in Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Shingada Pankesh Mohan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Jha Aashish Jaygovind** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Piezo Electric Harvesting : Towards Green Energy in Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Kudu Harshal Pundalik** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Diversity of Insects in Aпти (Khurd) Village of Vikramgad Tehsil, Palghar.** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Siddiqui Shama Parveen Md. Kausar of Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Herbal Air Room Freshener - An Application of Ethnobotany in Agriculture and Animal Husbandry** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Siddiqui Sana Parveen Md. Kausar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Herbal Air Room Freshener - An Application of Ethnobotany in Agriculture and Animal Husbandry** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Patil Dhruvika Dinesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Soilless Cultivation of Indigenous Variety Crops of Palghar District for Conservation of Biodiversity in Agriculture and Animal Husbandry** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Rane Surabhi Mohan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Herbal Aids to Save User Against the Common Pathogens in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Potdar Omkari Mangesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Herbal Aids to Save User Against the Common Pathogens in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Padvale Roshani Santosh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Utilization Of Floral Waste into Aromatic Amicable Wrist Band in Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Kale Madhu Ganesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Utilization Of Floral Waste into Aromatic Amicable Wrist Band in Agriculture and Animal Husbandry Category** and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Nair Arun Muralidharan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Nanoparticles based biofilters using carbonised coconut husk for effluent water treatment in Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Nair Sarath Unnikrishnan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Nanoparticles based biofilters using carbonised coconut husk for effluent water treatment in Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Prajapati Sonelal Santhoshkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Biorise-A perfect Agri-solution!** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Gautam Kishankumar Bindulal** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Biorise-A perfect Agri-solution!** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Agrawal Mansi Devendra** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE** in **Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Mahato Aarti Jaylal** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE** in **Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Sabale Ishwary Gajanan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Floor Cleaning Robot in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Save Samruddhi Milind** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Floor Cleaning Robot in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Bhirud Khushbu Pramod** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **IOT BASED RADAR DETECTION USING ARDUINO** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Bafna Aanchal Sagar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **IOT BASED RADAR DETECTION USING ARDUINO** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Vishwakarma Isha Mahendra of Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LUMINATING BOTTLE BY USING IOT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar zone**.

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This is to Certify that **Ms. Kothari Dhruvika Bhushan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LUMINATING BOTTLE BY USING IOT** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Shrivastav Aditi Amresh Kumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LUMINATING BOTTLE BY USING IOT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Pawar Priyanka Sambhaji** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **LUMINATING BOTTLE BY USING IOT** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Jadhav Dipali Nitin** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Animal Intrusion Detection device using IoT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Raut Khushi Santosh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Animal Intrusion Detection device using IoT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Ugarkar Sumedh Sachin** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Singh Kshitij Nilesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Raut Aniket Jaiprakash** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Kadu Deep Bharat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Mishra Shriram Sanat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Patil Pratham Narottam** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Smart Mirror -Mirror with computing capabilities in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Pandey Anant Anil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Smart Mirror -Mirror with computing capabilities** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Mali Ritvik Bhupesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Smart Mirror -Mirror with computing capabilities** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Bind Abhishek Somaru** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Smart Mirror -Mirror with computing capabilities in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Khot Atharva Ramchandra** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE** in **Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Dandekar Siddique Saquib** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **IOT BASED RADAR DETECTION USING ARDUINO** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Jaiswal Krishna Vinod** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Animal Intrusion Detection device using IoT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Patil Yash Hemant** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Animal Intrusion Detection device using IoT in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mr. Khatik Chetan Kishan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Personal Security Guard (PSG) in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Edachali Alakanandha Karthikeyan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Behere Akanksha M** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Raut Mansi K of Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Shivgan Sahili Sudhakar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Anti-microbial Activity of Natural Deep Eutectic Solvent(DES) of Eugenol and Cetrimide in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Ms. Dhanmeher Gauri Narendra** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Anti-microbial Activity of Natural Deep Eutectic Solvent(DES) of Eugenol and Cetrimide in Medicine and Pharmacy Category and PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Mrs. Parab Shraddha Shankar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **SYNTHESIS AND STUDY OF BIOLOGICAL ACTIVITIES OF BIMETALLIC COMPLEX** in **Medicine and Pharmacy** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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Certificates of Zonal project Mentors



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This is to Certify that **Krutika D Patel** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **LGBTQ** which was presented by **Mr. Burange Om** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mrs Bhakti P. Patil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Personal Security Guard(PSG)** which was presented by **Mr. Khatik Chetan** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Suhas P. Janwadkar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **SYNTHESIS AND STUDY OF BIOLOGICAL ACTIVITIES OF BIMETALLIC COMPLEX** which was presented by **Mrs. Parab Shraddha** in **Medicine and Pharmacy** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Suhas P. Janwadkar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **TO STUDY ANTIMICROBIAL ACTIVITY OF BIMETALLIC COMPLEX** which was presented by **Mrs. Shinde Pooja** in **Pure Sciences** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Vaibhava Sachin More** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract** which was presented by **Mr. Gupta Sumit** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dipali Mali** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** which was presented by **Mr. Vekhande Unnat** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Viraj D. Chabake** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Soilless Cultivation of Indigenous Variety Crops of Palghar District for Conservation of Biodiversity** which was presented by **Ms. Patil Dhruvika** in **Agriculture and Animal Husbandry** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Archana Vishnu Pawar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **BINGE (WEB SERIES) WATCHING IN NEW ERA** which was presented by **Ms. Palkar Samiksha** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Lisa Sam** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Biorise-A perfect Agri-solution!** which was presented by **Mr. Gautam Kishankumar** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mr. Hardik Shyam Churi** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Nanoparticles based biofilters using carbonised coconut husk for effluent water treatment** which was presented by **Mr. Nair Sarath** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mrs Bhakti P. Patil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Animal Intrusion Detection device using IoT** which was presented by **Ms. Raut Khushi** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mrs Bhakti P. Patil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **LUMINATING BOTTLE BY USING IOT** which was presented by **Ms. Pawar Priyanka** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Krutika Hrudaynath Churi** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Floor Cleaning Robot** which was presented by **Ms. Save Samruddhi** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Suprit Sanjay Narvankar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Diversity of Insects in Aпти (Khurd) Village of Vikramgad Tehsil, Palghar**. which was presented by **Mr. Kudu Harshal** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Hrushikesh P. Deokar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** which was presented by **Ms. More Babita** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr.shailaja .p.palan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal** which was presented by **Mr. Jain Bhavesh** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Pooja H. Kini** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Effect of Sunlight on Quality of Packaged Water** which was presented by **Ms. Patel Mokshika** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. sapna Bakul Jadhav** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Piezo Electric Harvesting : Towards Green Energy** which was presented by **Mr. Jha Aashish** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Dilip K. Yadav** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Anti-microbial Activity of Natural Deep Eutectic Solvent(DES) of Eugenol and Cetrimide** which was presented by **Ms. Dhanmeher Gauri** in **Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Ashwin D. Bhagat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **INSECT ROBOT DETECTING LANDMINES FOR DEFENCE PURPOSE** which was presented by **Ms. Mahato Aarti** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Dr.harshad Vanmali** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** which was presented by **Ms. Kini Arpita** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mr. Harshal Chaudhari** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Utilization Of Floral Waste into Aromatic Amicable Wrist Band** which was presented by **Mr. Kale Madhu** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Ishwari Nitesh Mehta** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** which was presented by **Ms. Raut Mansi** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Tejal Dipak Bagul** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Smart Mirror -Mirror with computing capabilities** which was presented by **Mr. Bind Abhishek** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr. Vaibhava Sachin More** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Ecofriendly Approach to Designed Fluorenone by Using Tamarind Pulp Extract** which was presented by **Ms. Hussien Rabina** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Mr. Tejas Narhar Chaudhari** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Herbal Aids to Save User Against the Common Pathogens** which was presented by **Ms. Potdar Omkari** in **Agriculture and Animal Husbandry** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Dr.darshana Salil Chaudhari** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** which was presented by **Ms. Patil Athashri** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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This is to Certify that **Vivek Kudu** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** which was presented by **Ms. Jadhav Akshata** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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December 11, 2022
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Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Jobin George** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Risk Assessment Of Adolescents For Diabetes** which was presented by **Ms. Dhangada Priyanka** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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Certificate of Participation

This is to Certify that **Tejas Narhar Chaudhari** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Herbal Air Room Freshener - An Application of Ethnobotany** which was presented by **Ms. Siddiqui Sana parveen** in **Agriculture and Animal Husbandry** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Tejal Dipak Bagul** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Plant monitoring system** which was presented by **Mr. Mishra Shriram** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Dr. Manish M. Deshmukh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Demystifying women shopping behavior pre and post Covid 19 in Palghar** which was presented by **Ms. Sankhe Mitali** in **Commerce, Management and Law** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.

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This is to Certify that **Dr. Sapna Bakul Jadhav** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Smart Product to Reduce Human Errors in Industries** which was presented by in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** zone.


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Certificates of selected project Mentors



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Certificate of Merit

This is to Certify that **Dr. Suhas P. Janwadkar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **TO STUDY ANTIMICROBIAL ACTIVITY OF BIMETALLIC COMPLEX** which was submitted by **Mrs. Shinde Pooja** in **Pure Sciences** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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Certificate of Merit

This is to Certify that **Dipali Mali** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** which was submitted by **Mr. Vekhande Unnat** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr. Hrushikesh P. Deokar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** which was submitted by **Ms. More Babita** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr.shailaja .p.palan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal** which was submitted by **Mr. Jain Bhavesh** in **Pure Sciences** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr.harshad Vanmali** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** which was submitted by **Ms. Kini Arpita** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).

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This is to Certify that **Ishwari Nitesh Mehta** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** which was submitted by **Ms. Raut Mansi** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar Zone**. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr.darshana Salil Chaudhari** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** which was submitted by **Ms. Patil Athashri** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar Zone**. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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Certificate of Merit

This is to Certify that **Vivek Kudu** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** which was submitted by **Ms. Jadhav Akshata** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr. Manish M. Deshmukh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Demystifying women shopping behavior pre and post Covid 19 in Palghar** which was submitted by **Ms. Sankhe Mitali** in **Commerce, Management and Law** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Dr. Sapna Bakul Jadhav** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has guided a Research Project titled **Smart Product to Reduce Human Errors in Industries** which was submitted by in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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**Certificates of Selected Participants
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Certificate of Merit

This is to Certify that **Mrs. Shinde Pooja Vilas** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **TO STUDY ANTIMICROBIAL ACTIVITY OF BIMETALLIC COMPLEX** in **Pure Sciences** Category and **PPG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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Certificate of Merit

This is to Certify that **Mr. Vekhnde Unnat Dipak** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Shaikh Shaziya Salim** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).

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This is to Certify that **Ms. Mali Manasvi Ghanshyam** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Do Electric Bikes Make Sense Over Petroleum Bikes.....?** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. More Babita Vijay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Patil Anjali Laxman** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Raul Mayuri Mahesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Shingada Pankesh Mohan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Bio-waste to Bio-catalyst: An efficient route for chemical synthesis** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Jain Bhavesh Dinesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Rai Vani Dutt Ashokkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Prajapati Om Sarojkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Synthesis of Bio-Adsorbent for Dye removal in Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Kini Arpita Atmaram** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).

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This is to Certify that **Ms. Singh Aabha Manojkumar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Tiwari Alok Shivshankar** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Post Covid Childhood Obesity and related health problems in Palghar, Maharashtra.** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Raut Mansi K of Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Behere Akanksha M** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Edachali Alakanandha Karthikeyan** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **PHYLLANTHUS EMBLICA- A RICH SOURCE OF ANTIMICROBIAL AND ANTIOXIDANT PHYTOCHEMICALS** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Patil Athashri Pankaj** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Patil Swaranjali Anil** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Churi Harshit Ramesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव** in **Humanities, Languages and Fine Arts** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Jadhav Akshata Kishor** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Panhale Ritu Arun** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. More Krutika Mangesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **महाविद्यालयीन विद्यार्थांचा बोलीविषयक दृष्टीकोन आणि तो संवर्धित करण्याच्या उपाययोजना** in **Humanities, Languages and Fine Arts** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Gite Varsha Ashok** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Dhangada Priyanka Ramesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes** in **Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar Zone**. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Ms. Jadhav Tanvi Sanjay** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Risk Assessment Of Adolescents For Diabetes in Humanities, Languages and Fine Arts** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Mishra Shriram Sanat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Mishra Shriram Sanat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Kadu Deep Bharat** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Raut Aniket Jaiprakash** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Singh Kshitij Nilesh** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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This is to Certify that **Mr. Ugarkar Sumedh Sachin** of **Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Plant monitoring system in Engineering and Technology** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


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Academic Year 2022-23

Certificate of Merit

This is to Certify that **Ms. Sankhe Mitali Suryakant of Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar** has participated and presented a Research Project titled **Demystifying women shopping behavior pre and post Covid 19 in Palghar in Commerce, Management and Law** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Sonopant Dandekar Arts, Vaman Shreedhar Apte Commerce and M.H. Mehta Science College, Palghar on December 11, 2022 for **Palghar** Zone. The said Research Project is selected for 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Final Round).


Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai


Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai

December 11, 2022
Palghar



State Level

Certificates of State Level Winner



I. Certificates of Mentor



II. Overall Pure Science First Rank



- E Overall Championship Certificate
- I Zonal Level Championship



II Appreciation for Zonal Round Conduction



2. Photos of Poster

17th Avishkar Research Convention 2022-23

Category: Engineering and Technology
Personal Security Guard (PSG)
Slot No:
Level: UG

Abstract

(PSG) system is made to remove all possible state which can lead to loss of life in emergency conditions . Losing consciousness is one of the draw back of humans in such conditions which can be handled by this sytem.

Problem statement and gap analysis

1.Current system needs manual works which can lead to human errors & time delay.
 2.So to minimize the time delay , remove human errors and any kind of manual work this new system (PSG) is introduced.
 3.This system will tackle this problems with the help of intelligent, rational decision and with the concept of quick response, quick evacuation, advance navigation, advance alert system.

Objectives

1. Fast Evacuation .
2. Save life.
- 3.To understand the importance of safety in our premises
- 4.To solve problems using IOT safely and securely.

Methods

Tree
Structure

Iteration

Connectionist
method

Analysis

LIFE SAVIOUR SYSTEM

Fire emergency
Damage caused by fire incident

1. Life
2. Property

Earthquake
Damage caused by Earthquake incident

1. Life
2. Property

Medical
Damage caused by Medical emergency

1. Life
2. Property

Incident Type	Life (0-50)	Property (0-50)
Fire	25	25
Earthquake	25	25
Medical	30	20
Manual	25	25

Results

Applications

1. Industries
2. Malls
3. Schools and colleges
4. Any structure up to 4 storage.

Social Benefits

Save Life

Save property

High Security

Cost Benefit

Conclusion

Personal Security Guard (PSG) is replacement of old emergency handling system. Old emergency system work to controlling the situation and to save property damage. But PSG will control the situation save property and life

17th Avishkar Research Convention 2022-23

Category- Engineering and Technology Level: UG Slot no:

Animal Intrusion detection device using IoT

Abstract

Agriculture is essential for the development of India especially economically. agriculture also needs security. Farmers face problems like animals damaging their crops or someone steal their crop. Due to this they must stay on farm to protect the crop from animals or intruders, but it increases workload on farmers. In this situation, they may use a security device to protect their farms. So an IoT based intruder detector system is used to alert the farmer when an intruder enters the farm. The proposed research work has used the IR sensor to detect the intruder and GSM module is used to send a notification to farmer.

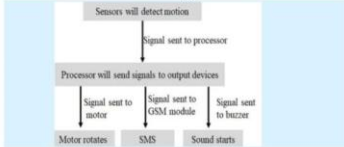
Problem Statement

1. Farmers all over India face the problem of crop destruction and damage due to animal intrusion in the farmlands
2. Most of the damage done is not compensated and causes economical and resource damage.

Objectives

1. To design and develop alarming system for farmers in rural areas.
2. To protect the farmer and crops from animals and birds with the help of easy technology
3. To help monitor movements in the farm via remote access.

Methodology



Social Relevance



Results



Conclusion

1. As a result, our work would assist farmers in securing their farmlands.
2. The farmers secure the farm securing farm increasing his yield and also increasing the country's overall productivity.

References

1. Preethi, Gajula Siva Sai, et al. "Internet of Things based Smart Farm Security System." 2021 2nd International Conference on Smart Electronics and Communication (ICOSEC). IEEE, 2021.
2. Chaganti, Rajasekhar, et al. "Blockchain-Based Cloud-Enabled Security Monitoring Using Internet of Things in Smart Agriculture." Future Internet 14.9 (2022): 250.

17th Avishkar Research Convention 2022-23

Category: Engineering & Technology

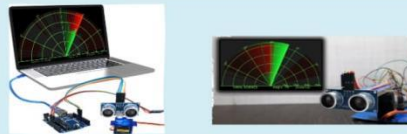
IOT BASED RADAR DETECTION USING ARDUINO

Level: UG Slot no:

ABSTRACT

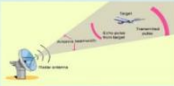
We design our system that is IOT BASED RADAR DETECTION USING ARDUINO which detect different physical components such as distance, speed, position, range, direction, size etc. Which can be either fixed or be in motion. System is not essentially affected by variations in temperature or lighting conditions and also to cure all the flaws Time delay, Resolve multiple targets etc. Gives us More visual Data and Accuracy in graphical representation on mimic Radar screen.

EXPECTED OUTCOME



PROBLEM STATEMENT AND GAP ANALYSIS

1. In this current radar system there are some flaws like takes more time due to signal travels freely in air and space.
2. Data Collection and Accuracy can be more challenging due to object is in motion.
3. It cannot Distinguish and Resolve multiple targets and that are deep in the sea, also cannot Differentiate the color of object.



APPLICATION

1. Underwater networks
2. Driverless vehicle system
3. In various military operations
4. In aircrafts



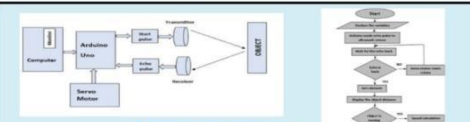
OBJECTIVES

1. To develop an ultrasonic RADAR.
2. To detect the fixed or moving object.
3. To measure the distance of the object from the system.
4. To measure the angle of the moving object.
5. Reducing human time and effort.

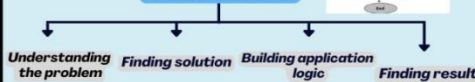
SOCIAL BENIFITS

1. Implementation of RADAR at very low cost.
2. Mobile RADAR system.
3. Readings are updated rapidly.
4. Small in size.
5. Easy to construct.

METHODOLOGY



METHODOLOGY



CONCLUSION

1. Ultrasonic Radar Using Arduino UNO was successfully implemented and executed.
2. The range can be Adjust up- to the 400 cm rang or according to sensor capacity.

REFERENCES

1. MEHTA, S., & TIWARI, S. (2018). RADAR SYSTEM USING ARDUINO AND ULTRASONIC SENSOR. INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT, 3(4), 14-20.
2. GHOGHRE, D. A., DHANSHRI, A., & PRIYANKA, A. (2017). RADAR SYSTEM USING ARDUINO. IN NATIONAL CONFERENCE ON EMERGING TRENDS IN ENGINEERING & TECHNOLOGY (PP. 53-56).

Inter-University Avishkar Research Convention 2022-23

Category: Engineering and Technology Level: UG Slot no:

Floor Cleaning Robot

Abstract

Cleaning the dust from the floor is one of the daily tasks that must be completed. With the help of ultrasonic sensor it detects the obstacles in front of them and sends signal to processor, accordingly it takes turn to avoid that obstacle. The floor cleaner robot is designed to make cleaning interactions easier than they would be if done manually. It saves the time of the people and helps to clean the surface of the floor without any human intervention.

Problem Statement

1. Cleaning the dust from the floor is one of the daily tasks that must be completed.
2. Dust-cleaning operations take a long time
3. Other activities are sometimes disregarded.

Objectives

1. To clean houses
2. To clean industries
3. No manual work required
4. Saves time and energy
5. Less expensive

Application Logic



Benefits

1. Less manual work required.
2. It saves time.
3. It can clean corners where humans cannot reach.
4. Ideal for people with mobility issue.
5. Has no range issue.

Results



Conclusion

1. The ultrasonic sensor detects the obstacle and then the controller commands the motors to change direction.
2. All operations like changing the path in case of hurdles are performed automatically.
3. Our robot can reach out to places where human access is not possible.

References

1. Arduino Based Floor Cleaning Robot using Ultrasonic Sensor (circuitdigest.com)
2. (PDF) Autonomous Floor Cleaning Robot (researchgate.net)
3. (PDF) Automatic floor cleaning (slideshare.in)
4. Burman, Vibha, and Ravinder Kumar. "IoT-Enabled Floor Cleaning Robot."

Landmines Detecting Robot

Abstract

A land mine is an explosive device that is designed to destroy or disable an enemy and hidden under or on the surface of ground, especially in mine-affected countries like Afghanistan and Iraq. Most landmines are laid on just below the surface of ground and are activated by pressure or trip-wire. Usually most of the land mines will contain many metallic parts, which can be made use of in their detection. The mines which are embedded amid the war time may stay undetected. As the name suggests detection is done using Metal Detector and hence can be done further away from the mine carefully. Mine detection robots will go from this path where soldiers pass the roads in mine areas.

Problem Statement

1. In today's world landmines are one of the biggest problem due to which many people die.
2. Sometimes while checking with metal detectors many people die.
3. This system will address this issue using intelligent and logical decision-making. Additionally, the idea of an improved alert system in-depth navigation

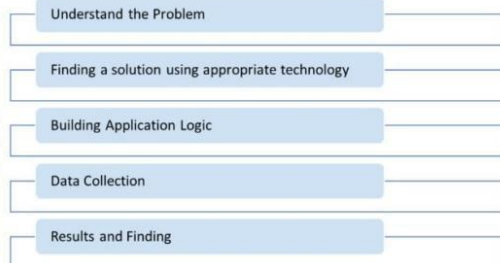
Objectives

1. To less loss of armed force
2. To get quick results
3. To make defence system to be smart
4. To build economically easy to implement in defence system

Social Relevance

1. Portable Device and easy to carry
2. Quick to check landmines
3. Control the loss of human affected by landmines
4. Device can be used in every defence areas where landmine testing is required

Methodology



Results and finding



Conclusion

The interface developed is a powerful tool for the control of differential drive robots. The control modes along with the mapping make the system a useful demining robotic system. The ideas and techniques mentioned in this paper can be used to make better landmine detecting robots.

Reference

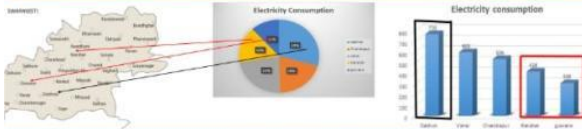
1. Svetlana Larionova (2007). Automated Landmine Detection by means of a Mobile Robot . Faculty of Science and Technology, University of Coimbra
2. Ihab Makki (2017). Hyperspectral Imaging for Landmine Detection. Optimization and Control [math.OC] . POLITECNICO DI TORINO.

LUMINATING BOTTLE BY USING IOT

Abstract

We have come up with a solution for two basic but important problems. The first problem is the plastic bottles. Large amount of used plastic bottles are thrown into the river / seas which causes the death of various creatures. The second problem is of electricity supply and high billing. In the rural area there is less electricity supply and where there is proper supply of electricity but the poor people are not able to afford to pay high billing. So, our solution to this problem is to reuse the plastic bottle to make the lamp which will decrease the emission of carbon dioxide up to some extent. In this, solar panel gets energy from the sun and then the lithium batteries will get charged from the solar panel and the charged lithium batteries emit the energy to the LED during night time and LED glows. This lamp can be used by anybody because it is user as well as eco friendly.

Problem Statement



2. Finding the solution using appropriate Technology



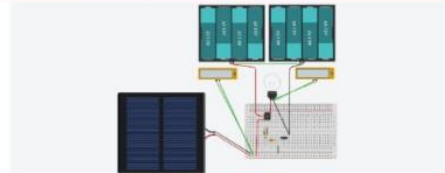
The lithium ions batteries gets charged by solar panel

The lithium ions batteries emits the energy to the LED during night time.

Objectives

1. To provide energy without carbon emissions.
2. To reduce the fatal accident such as fire hazard.
3. To provide zero emissions and less pollution.
4. To be a beneficial device to economically weaker society.
5. To spread luminescence in the darkness.

3. Circuit Diagram



Methodology

The Whole Methodology is divided into **Three** fundamental steps



1. Understand the problems



2. Finding solution using appropriate Technology



3. Building logic

Benefits



Low cost



User friendly



Avoid accidental burn and fire



Reuse of plastic bottle



Eco friendly

1. Understand the problems



1. Disposable water marine creatures each year. bottle waste washes into the Ocean and kills **1.1 million**
2. The water bottling process releases **2.5 million** tons of carbon dioxide into the atmosphere annually.
3. Poor people are not able to pay electricity money.

Conclusion



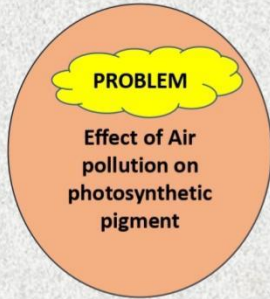
1. Solar panel gets charged during daytime by sunlight.
2. The lithium ions battery gets charged by solar panel.
3. The lithium ions battery emits the energy to the bulb during night time.
4. At night time it automatically gets turned on

References

1. Alrubaih, M. S., et al. "Research and development on aspects of daylighting fundamentals." *Renewable and Sustainable Energy Reviews* 21 (2013): 494-505.

2. Kim, Jeong Tai, and Marija S. Todorovic. "Tuning control of buildings glazing's transmittance dependence on the solar radiation wavelength to optimize daylighting and building's energy efficiency." *Energy and Buildings* 63 (2013): 108-118.

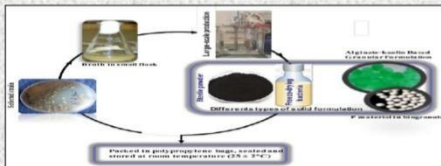
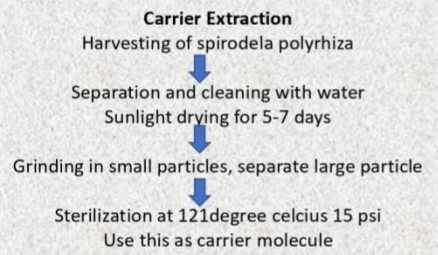
Biorise-A perfect Agri-solution !!



ABSTRACT

The exhaust of industries, automobiles cause air pollutions. Examples:- oxides of nitrogen, sulphur, particulate emissions. These air pollutants drastically affect photosynthetic pigments and reduce chlorophyll contents. The reduction in chlorophyll is due to conversion of chlorophyll into pheophytin by loss of magnesium ions. In the present study formulation of biofertilizer has been done by finding out nitrogen fixation bacteria, phosphate solubilizer bacteria and addition of new carrier mixture. Biofertilizers overcome the effects of air pollution on plants and enhance the chlorophyll contents of plants collected from polluted sites. This biofertilizer has great potential to replace chemical fertilizers.

MATERIAL AND METHOD



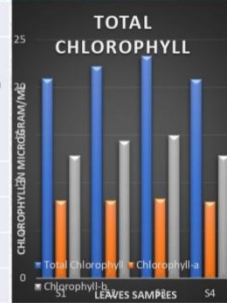
OBJECTIVE

1. N₂ Fixation
2. Phosphate solubilization
3. Enhancement of chlorophyll content
4. Reduce aging of vegetable crops



RESULTS

Sites	Chlorophyll contents		
	Chl-a (ug/ml)	Chl-b (ug/ml)	Total chlorophyll (ug/ml)
S ₁	8.120	12.822	20.938
S ₂	8.156	14.424	22.187
S ₃	8.313	14.944	23.279
S ₄	8.023	12.854	20.860



CONCLUSION

The total chlorophyll content, chlorophyll-a, chlorophyll-b, estimated by using Arnon's method. Total chlorophyll were found to be less for samples collected from industrial area comparing to samples from non-polluted site. Biofertilizer has potent ability to enhance chlorophyll content and makes soil fertile.

REFERENCES

- Rajalakshmi .K1, N. Banu2, (2014) *Extraction and Estimation of Chlorophyll from Medicinal Plants*
1Research Scholar, Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.

17th Inter- university Avishkar Research Convention 2022-23

Category VI: Medicine and Pharmacy

Level : PPG

SYNTHESIS AND STUDY OF BIOLOGICAL ACTIVITIES OF BIMETALLIC COMPLEX

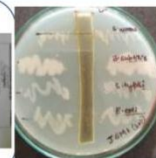
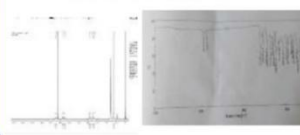
ABSTRACT

The reagent (N,N-bis (o-Vanillinidene) ethylenediamine) is synthesized and it is characterized by FT-IR, NMR. This ligand used to coupled with Ni(II) to get Monometallic complex. Another monometallic complex have been prepared by using 1-Nitroso-2-naphthol as a reagent with Fe (III). The combination of these two will give Hetero-bimetallic complex. The prepared complex is characterized by using FT-IR, UV-Visible Spectroscopy. The said complex shows promising Antimicrobial Activity against S.aureus , B.subtilis ,S.typhi and E.coli.

OBEJECTIVES

The bimetallic complexes may have higher bioactivity as well due to the double chelating effect of ligands in transition metal complexes. This work is used to synthesis and study of biological activities of bimetallic complex.

CHARACTERISATION



Active against S.aureus, B.subtilis, S.typhi and E.coli.

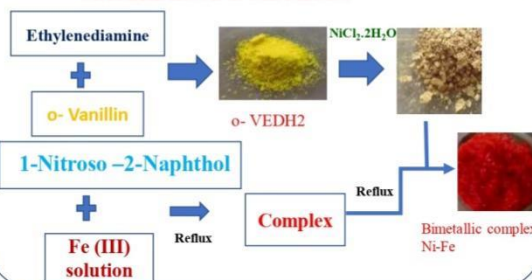
CONCLUSION

Reagent and bimetallic complex synthesized. This Synthesized reagent characterized through spectral study. Bimetallic complex gives promising result against S.aureus, B.subtilis, S.typhi and E.coli.

INTRODUCTION

The recent trend is use of bimetallic complexes as a bioactive molecule. Two metals present in the complex may be same or different. As compared to monometallic complexes, bimetallic complexes provide faster reaction rate and greater selectivity. In short, the field of bimetallic complexes is faster growing field because of their promising bioactivities.

MATERIALS AND METHODS



REFERENCES

- 1) HK. Tami, 'Bimetallic complexes; A mini review of their synthesis, and potential antitumor activities' April 2019.
- 2) BJ Pandya, PK Bhattacharya, 'Studies on some ternary complexes and heterobimetallic complexes of oxovanadium (IV)' Indian J. Chem. 1985;Vol 24A: 403-406.

17th Intercollegiate Avishkar Research Convention 2022-23

पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव

Category - 1

Slot No -

Level - U.G.

गोषवारा

'भौगोलिक दृष्ट्या निकट असणाऱ्या समाजापैकी सामाजिक-सांस्कृतिकदृष्ट्या उच्च वर्गाचा प्रभाव निम्नस्तरातील समाज जीवनावर व संस्कृतीवर पडतो.' पालघर तालुक्यातील फुदगी समाजावर आदिवासी, आगरी, वाडवळ, मांगेला समाज संस्कृतीचा प्रभाव आहे. हे गृहीतक विचारात घेऊन फुदगी समाज संस्कृतीचा शोध घेण्यात आला आहे. हे संशोधन करताना पालघर तालुक्यातील केळवा, माहीम, खारेकुरण आणि शिरगाव या गावातील फुदगी पाडे संशोधनाच्या केंद्रस्थानी ठेवण्यात आले आहेत.

प्रास्ताविक

फुदगी समाज-संस्कृती संशोधनासाठी निवडण्यामागची भूमिका: ब्रिटिश काळात भारतात गुलाम म्हणून आणलेली ही एक विशिष्ट जमात आहे. अतिमागास आणि अल्पसंख्यांक समाज आहे. अलीकडच्या काही वर्षांत इतर मागासवर्गीय जमातीत (ओ.बी.सी.) समावेश करण्यात आला असला तरी जातीचे प्रमाणपत्र सर्वांना उपलब्ध झालेले नाही. शिक्षणाचे प्रमाण अत्यल्प आहे. मुन्हेगार म्हणून पूर्वी हा समाज ओळखला जाई पालघर आणि वसई या दोन तालुक्यातील ट्राविक गावांपुढे हा समाजसिमीत आहे. चेहरपट्टी व स्वनउच्चारणाची विशिष्ट पद्धत यामुळे सहज वेगळी दिसणारी ही जमात स्वतःची अशी विशिष्ट संस्कृती नाही. वाडवळ, आदिवासी, मांगेला, आगरी समाज संस्कृतीच्या प्रभावानून तयार झालेली संमिश्र संस्कृती आहे.

उद्दिष्ट हेतू:

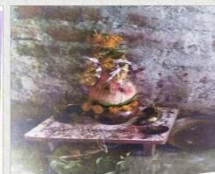
- 1) दुर्लक्षित व अतिमागास फुदगी समाजाचे अस्तित्व अधोरेखित करणे.
- 2) फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव शोधणे.

संशोधन पद्धत :

प्रस्तुत विषयावरील संशोधन करित असताना क्षेत्रीय अभ्यासपद्धत व मुलाखत तंत्राचा वापर केला आहे.

निष्कर्ष :

- माहीम- टेंभी येथील फुदगी वस्ती मांगेला समाजाच्या वस्ती नजिक असल्याने मांगेला समाज संस्कृतीचा प्रभाव दिसतो. (मांगेला समाजातील होळी गीतांचा प्रभाव, मांगेला समाजातील पुरुषप्रमाणे पेहराव)
- पालीपाडा आणि रंजणपाडा हे फुदगी पाडे आदिवासी पाड्यांजवळ आहेत त्यामुळे आदिवासी संस्कृतीचे अनुकरण झालेले दिसते. (मुत्तूनंतर बात लावली जाते, लग्नात भगत बोलावला जातो, भगताला बोलवून जागरण घातले जाते)
- वाडवळ समाजाच्या शेतीवाडीत काम करणाऱ्या फुदगी समाजावर वाडवळी लष्मणीतांचा प्रभाव दिसतो.
- पालघर तालुक्यातील काही फुदगी लोकं मांगेला समाजासोबत मासेमारी करताना दिसतात. काही वाडवळ समाजाप्रमाणे शेतीवाडी करताना दिसतात. काही फुदगी आगरी समाजाच्या मिठागरांमध्ये काम करतात तर बहुतांश फुदगी आदिवासीप्रमाणे शेतमजुरी करतात.
- मांगेला, वाडवळ, आदिवासी, आगरी समाजातील आडनावे स्वीकारलेली आहेत. (शिनवारी, पटकर, मलकर, राजत, पाटील, नाईक)
- फुदगी समाजावर मांगेला, वाडवळ, आदिवासी, आगरी समाज संस्कृतीचा प्रभाव आहे.



महाविद्यालयीन विद्यार्थ्यांचा बोलीविषयक दृष्टिकोन आणि तो संवर्धित करण्याच्या उपाययोजना

Category - 1

Slot No:

Level – P.G.

गोषवारा

मानवाचा शैक्षणिक विकास हा त्यांच्या बोली भाषांना मारक ठरतो. बोली या गावठी असतात, त्यातून अभिव्यक्त होणे हे अप्रतिष्ठेचे मानले जाते. असा समज प्रचलित आहे. महाविद्यालयीन शिक्षण घेत असताना विद्यार्थ्यांना आपल्या बोली वारश्याची जाणीव आहे का ? हे तपासणे गरजेचे आहे. कारण हाच समूह बोलीभाषा विसरतो आहे आणि हाच समूह बोली जिवंत ठेवू शकतो. या संशोधन प्रकल्पात 'महाविद्यालयीन विद्यार्थी बोली आणि बोली संवर्धना बाबतीत अनभिज्ञ आहेत'. हे अभ्युपगम आहे. संशोधनातून याची सत्यता पटली. विविध तज्ञांच्या बोली संदर्भातील विचारांचा आधार घेत उपाययोजना सुचविल्या आहेत.

प्रास्ताविक

कोणतीही बोली आपले सांस्कृतिक संचित आहे. बोली हा सामाजिक सांस्कृतिक वारसा देखील आहे. आजच्या काळात बोली झपाट्याने नष्ट होताना दिसत आहे. डॉ. गणेश देवी याभाषातज्ञांनी 'बोलीसंहार' ही संकल्पना मांडली आहे. जगातल्या अनेक बोली नामशेष झाल्या आहेत. बोलीचे जतन करणे आणि महाविद्यालयीन विद्यार्थ्यांमध्ये बोली संवर्धनाविषयी प्रबोधन करणे. हा या संशोधनाचा हेतू आहे.

उद्दिष्ट/ हेतू:

- १) महाविद्यालयीन विद्यार्थ्यांचा बोलीविषयक दृष्टिकोन तपासणे.
- २) बोली संवर्धनाच्या उपाययोजना सूचविणे.

संशोधन पद्धत :

- १) क्षेत्रीय संशोधन पद्धती
- २) सर्वेक्षण
- ३) मुलाखती

प्रत्यक्ष संशोधन

सदर संशोधनासाठी २२ प्रश्नांची प्रश्नावली तयार करण्यात आली. यात वस्तुनिष्ठ स्वरूपातले तर काही प्रश्न वर्णनात्मक स्वरूपाचे आहेत. विद्यार्थ्यांना विस्तृत लिहिण्याची संधी देण्यात आली. हा अभ्यास विशेषतः किनारपट्टीवरील महाविद्यालयात केला. सोनोपंत दांडेकर महाविद्यालय पालघर, अण्णासाहेब वर्तक महाविद्यालय वसई महाविद्यालयातून सर्वेक्षण अर्ज भरून घेण्यात आले. यास समिष्ट प्रतिसाद मिळाला.

निष्कर्ष

- महाविद्यालयीन विद्यार्थ्यांमध्ये बोलीविषयी जागरूकता दिसत नाही.
- त्यांच्या बोलीला 'गावठी' असे म्हणतात.
- त्यांना बोली भाषा आणि प्रमाण भाषा यातील फरक समजत नाही.
- आपल्या बोलीमध्ये कोणते शब्द आता वापरले जातात हे देखील विद्यार्थ्यांना सांगता येत नाही.
- काही अपवाद सोडल्यास सर्व विद्यार्थ्यांना आपली बोलीभाषा ही प्रतिष्ठेची वाटते.
- पालघर जिल्ह्यातील बोली अजुनही कोणत्याही मालिकांमध्ये वापरलेली नाही.
- पालघर जिल्ह्यातील आदिवासी बोली ही सोशल मिडीयात वापरली जाते.
- विद्यार्थ्यांना आपली बोली भाषा नष्ट होत आहे याची जाणीव देखील दिसत नाही.
- त्यांना बोली विषयक जाणीव कोणीही करून दिलेली नाही.

उपाययोजना

- महाविद्यालयीन विद्यार्थ्यांचे बोली संदर्भात प्रबोधन करणे.
- बोलीचे महत्व पटवून देणे.
- बोली भाषेमध्ये विविध स्पर्धा आयोजित करणे.
- कोणतीही बोली ही 'गावठी' नसते हे विद्यार्थ्यांना पटवून देणे.
- विद्यापीठीय अभ्यासक्रमांमध्ये बोलीभाषाचा अंतर्भाव करणे.
- बोलीचे नमुने ध्वनिमुद्रित करण्यास प्रोत्साहन देणे.
- अभ्यासक्रमात बोलीभाषांना प्राधान्य देणे.
- बोलीभाषेत साहित्यनिर्मिती करण्याकरिता विद्यार्थ्यांना चालना देणे.

तू पाहणी जाधेल काय?(वारली)

यी कायचेकाय सांगतयं (आगरी)

मी कोकणातला असय(मालवणी)

आज माना शालत जाया निही वाटं(मल्हार कोळी)

University Aviskar Research Convention 2022-23

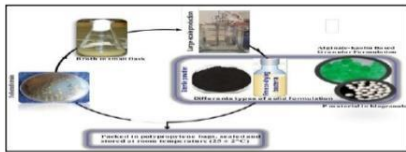
Biofertilizer To Enhance Chlorophyll Contents

ABSTRACT

In the present investigation, comparative studies have been done, to find the effect of air pollutants generated from the exhaust of industries and automobiles on the chlorophyll content of leaves. And finding out nitrogen fixation bacteria, phosphate solubilizing bacteria, and formulation of biofertilizer to overcome the effects of air pollution on plants. The leaves samples of spinach (*spinacia oleracea*), Fenugreek were collected from areas with potentially higher and lower levels of air pollution. Photosynthetic pigments chlorophyll-a, chlorophyll-b and total chlorophyll were quantified. A reduction in the photosynthetic pigments of plant leaves growing in higher polluted sites as compared to non or less polluted ones. Nitrogen is one of the important elements used during chlorophyll synthesis. The reduction in chlorophyll content is due to degradation of chlorophyll into pheophytin by the loss of magnesium ions. Chlorophyll content may differ in different periods of time under different conditions of pollution stress and different meteorological conditions. The utilization of plant growth promoting rhizobacteria (PGPR) in agriculture is continuously increasing as it offers an effective tool to replace the use of chemical fertilizers, pesticides and other harmful supplements (Ansari et al., 2017, Ansari and Mahmood, 2019a). Growth promoting substances are produced in huge quantities by the action of these rhizosphere microorganisms that directly or indirectly influence the overall morphology and physiology of the crops. Recent advances in the field of sustainable development relies on the use and diversity of PGPR, their colonizing capability and the mechanism of action that may be used to facilitate their application as a dependable element in the management of sustainable agricultural system (Bhattacharyya and Jha, 2012, Di Benedetto et al., 2017, Ansari and Mahmood, 2019a, Ansari and Mahmood, 2019b).

MATERIAL AND METHOD

1. The chlorophyll and carotenoids contents from the heavily air polluted area were quantitatively estimated by Arnon's (1849) method. The results thus obtained were compared with the control.
2. Formulation of biofertilizer by using nitrogen fixing bacteria and phosphate solubilizing bacteria (PSB).
3. Plants grown under formulated biofertilizer and further chlorophyll content were estimated and studied.



CONCLUSION

The total chlorophyll content, chlorophyll-a, chlorophyll-b, estimated by using Arnon's method. Total chlorophyll were found to be less for samples collected from industrial area comparing to samples from non-polluted site. Biofertilizers increase the availability of plant nutrients and can help in maintenance of the soil fertility over a long period. As discussed earlier, some microorganisms have the beneficial role of biological nitrogen fixation to supply nitrogen to crops, solubilizing insoluble phosphates to plant-available (soluble) forms and synthesizing biomass for manuring of crops. Biofertilizers are, therefore, economical, renewable and eco-friendly, but they cannot totally replace chemical fertilizers. Biofertilizer use is an important component of Integrated Nutrient Management and organic farming. These technologies are becoming vital in modern-day agricultural practices. The changing scenario of agricultural practices and environmental hazards associated with chemical fertilizers demand a more significant role of biofertilizers in coming year

OBJECTIVE

1. N₂ Fixation
2. Phosphate solubilization
3. Enhancement of chlorophyll content
4. Reduce aging of vegetable crops



REFERENCES

- Rajalakshmi .K1, N. Baru2, (2014) *Extraction and Estimation of Chlorophyll from Medicinal Plants* 1Research Scholar, Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
- E. Manolopoulou1, Th. Varzakas2 and A. Petsalaki2, *Chlorophyll Determination in Green Pepper using two different extraction methods* 1Dept. of Crop Production Technological Educational Institute of Peloponnese, School of Agricultural Technology, Food Technology and Nutrition2Department of Food Technology, Antikalamos 24100 Kalamata, Greece. Becky Nancy Aloo 1*, Ernest Rashid Mbega 2

RESULTS

S1(*spinacia oleracea*)-
Family: Amaranthaceae
Method used: **Arnon's method**
Total chlorophyll= 20.938 ug/ml
Chlorophyll-a = 8.120 ug/ml
Chlorophyll-b = 12.822 ug/ml



S2 (*spinacia oleracea*)-
Family: Amaranthaceae
Method used: **Arnon's method**
Total chlorophyll= 22.187 ug/ml
Chlorophyll-a = 8.156 ug/ml
Chlorophyll-b = 14.424 ug/ml



S3(*Trigonella foenum-graecum*)
Fenugreek:
Family: Fabaceae
Method used: **Arnon's method**
Total chlorophyll= 23.279 ug/ml
Chlorophyll-a = 8.313 ug/ml
Chlorophyll-b = 14.974 ug/ml



S4(*Trigonella foenum-graecum*)
Fenugreek:
Family: Fabaceae
Method used: **Arnon's method**
chlorophyll= 20.86 ug/ml
Chlorophyll-a = 8.023 ug/ml
Chlorophyll-b = 12.854 ug/ml



17th Avishkar Research Convention 2022-23

Category : Humanities, Languages & Fine Arts

Level : UG

Slot No :

BINGE (WEB SERIES) WATCHING IN NEW ERA

ABSTRACT

Web series and online streaming material are increasingly popular today across all age groups. With the rise of internet streaming and the production of web series material in India and other nations, web series are rapidly replacing television. Different OTT platforms, including YouTube, Amazon Prime, Netflix, Hotstar, and other platforms, have made significant investments in local content recently. Because they take us places that television won't, web series have become more and more popular in India in recent years. The public can view programmes whenever it's convenient for them thanks to web series and internet streaming. The psychosocial effects of web series and other online streaming content on people of all ages are the main subject of this study. The researcher also looked into how people perceived online streaming and web shows. Information was gathered from the respondents through direct communication and a questionnaire. The respondents ranged in age from 14 to over 40 and came from a variety of institutions, including schools, colleges, universities, and working professionals. As a result, this study encompasses all facets of web series bingeing in the new era that have an impact on an individual's overall performance.



LITERATURE REVIEW

- **Dhiman, B., & Malik, P. S. (2021)**
"Psychosocial Impact of Web Series and Streaming Content: A Study on Indian Youth"
- **Pramit Gupta February 26, 2021**
"The Factors Effecting Shift of Indian Customers from T.V Series to Web Series- the Future of OTT Services in India"
- **Unnimaya P Devan, Mekha Babu Febi Jstlin , Sandy Viju 2021**
"Increasing Trend and Effects of Web Series Among Youth"

DATA ANALYSIS AND INTERPRETATION

How long do you usually spend viewing web series in a day?



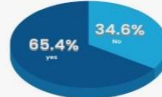
Around 38% Respondents are watching 0-1 hour daily. 48.80% people are watching around 2-3 hours and the age group of 18-25 watches more web series.

Which OTT platforms do you use to watch the web series?



35% respondents are using YouTube when we asked them, their answer was its free they don't have to pay. Others are paid and those are using paid their family members are using membership

Do you think web series are affecting you socially and psychologically ?



When asked to the respondents whether the web series and online content have psychological and socially effects on them, 65.40%, of respondents said yes, it has an impact on them. While, 34.60% said no, that it never had a psychological impact on them

RESEARCH METHODOLOGY

Data Collection

PRIMARY DATA:

- Age group of 14th to above 45 years
- Around 557 respondents for data analysis.
- Data from students **Private tuitions, Junior college, Senior college, Post graduate and working professionals.**
- Area from **Palghar and Dahanu Taluka.**
- Structured Questionnaire and Unstructured Questionnaire
- Formal and informal interactions with working professionals

SECONDARY DATA

- Websites on Google.
- International Journals.
- National journals.
- Articles and Newspapers.

OBJECTIVES OF THE STUDY

- To understand the psychological and societal effects of bingeing
- To study whether watching web series has impact on health.

HYPOTHESIS

- Bingeing positively affects on psychologically and socially
- There is relationship between age group and bingeing(web series)

RESULTS AND FINDINGS

- We took around 557 respondents from different age groups females watch more web series than males.
- Age group of 18-25 is more addicted to web series which consist of junior college, graduation and post graduation students.
- Majority respondents believe that they don't get impacted due to watching web series.
- Working professional point of view is they watch web series for knowledge purpose.
- Overall our research study says that Web series are trending more than T.V serials due to short episodes and repetitive family dramas. There positive and negative both effects but age group of 18-25 are more towards web series. There Personal, Academic life is also affecting them.

LIMITATIONS OF THE STUDY

- The study is conducted in the geographical Palghar and Dahanu taluka area only
- Study is taken only for specified age group
- Watching series is different based on their personal thoughts, therefore a definite conclusion cannot be drawn

CONCLUSION

The outcome made it quite evident that web series and internet streaming material had a big influence on individuals. The web series content that is displayed on online platforms attracts young people. Youth have been affected psychosocially by the violent, sexual, and abusive content that is available on OTT platforms. They both concur that they have experienced rage, aggression, anxiety, and depression symptoms. If it becomes unmanageable, it will cause significant psychosocial problems for young people.

17th Avishkar Research Convention 2022-23

Category : Humanities, Languages & Fine Arts

Level : UG

Slot No

LGBTQ: The Rise of Third Gender and Struggle for Societal Acceptance

ABSTRACT

A person's gender identity will be same as or different from their birth. Gender identity is each person's internal and individual choice of gender. The LGBTQ community people faces many problems like they are sexually assaulted, physically attacked and extreme violence when compared to heterosexual peers. Within the LGBTQ community our project exclusively focuses on the TRANSGENDER community. Recently in India Prachi Rathod transgender became a government doctor. Naaz Joshi is India's first transgender International Beauty Queen. The purpose is to find out where transgender community stands in the newly formed Palghar District in the state of Maharashtra.

Objectives

- To create safe and inclusive educational/ work environment.
- Make efforts to ensure safe accommodation for LGBTQ community.
- To give them that respect, Dignity, and Equality which is given to heterosexual society.
- Differences adolescence girls and boys on attitude towards lesbian and gay people.

Methodology

Secondary Data

1. We have gathered some information with the help of research papers available on Google websites.
2. We also referred to some articles regarding LGBTQ of well known newspapers like TOI.

Primary Data

1. We have completed 364 responses on this project survey.
2. Interaction with the Transgender community in Palghar area.

LIMITATIONS OF THE STUDY

- > Study was limited to the Palghar Area.
- > Study is taken only for specified age group such as 18-25, 25-30, 30-40 & 40 above.
- > The main reason behind this is to get equal amount of Employment & Education rights for LGBTQ.
- > To make youth understand to support the LGBTQ Organization with positive attitude.
- > The reason behind why to made them feel unwelcome at a place of worship.

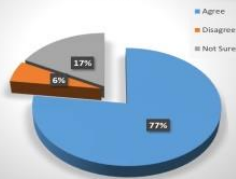
CONCLUSION

- The research basically xends at the conclusion that people are aware and not ashamed of their sexuality.
- Also majority of people agree that LGBTQ community people should get equal rights , opportunities, respect, and dignity.
- The positive responses of people on the question that is there really a need for third gender? shows that people are accepting them and are willing change the stereotypes of there should be only two genders

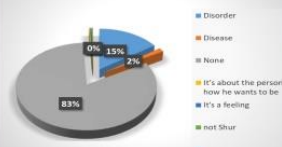
REFERENCE

- <https://www.ncbi.nlm.nih.gov/books/NBK64810/>
- <https://www.bhjustice.org/topics/lgbtq/>
- <https://youtu.be/NFp27WcNvSc>

Do you agree with the decision of court regarding enforcement of Transgender Person's Right Act 2019 ?



Is being LGBTQ a disorder or disease ?



Utilization Of Floral Waste Into Aromatic Amicable Wrist Band

Abstract

Floral waste management is major concern as it accounts 16 % of water pollution. Disposal of flowers in rivers, ponds, etc. lead to water pollution as well as affects the living organisms present in waters. So, the floral waste must to convert into the valuable products like aromatic wrist band from the aromas of the flowers as a waste. This band will act as an aroma therapy and will provide relief by inhaling the fragrance of wrist band. The remaining floral waste material can be used for preparing vermicompost. It is one of the easiest methods to recycle temple flower waste to produce quality compost. This study describes the management of floral waste. This will resolve the problems of disposal floral wastes and ultimately the water pollution will get reduced and when aroma is inhaled the scented molecule in essential oil travels from the olfactory nerves directly to the brain and specially impact the amygdala. Which result into good mental health.

Why Waste Management?

1. One of essential aspects of floral waste management is recycling for conservation of natural resources.
2. Degradation of floral waste is extremely slow process as compared to kitchen waste.
3. During rainy days, the condition get worsen with mosquitoes and flies breeding on floral waste or floral waste may results into breeding ground of diseases.
4. Floral waste management reduces the effects of waste on the environment.

Objectives

1. To minimize the environmental pollution specially water pollution .
2. To get clean surrounding near temple areas .
3. To make valuable and cost effective products .



Methods

1. Collection of flowers from temple waste
2. Washing and cleaning
3. Segregation or separation
Extraction of essential oil from temple flowers waste by appropriate method.
4. Formation of aroma to band
5. Packaging of aromatic band

References

1. Technology for the utilization of floral waste and corresponding products-Sharmila Rani , Prateek Kumar , Menka Bhasin .
2. Management of floral waste by conversion to value added products and their applications-M.S.Waghmare , A.B.Gunjral, N.N.Patil.
3. Utilization of floral waste for extraction of valuable products: A close loop approach towards environmental sustainability and waste management- Singh.P , Singh .R , Mishra P.K.

Applications

1. People will get employment
2. Acts as Aromatherapy
3. Relief from anxiety and depression
4. Clean water bodies
5. Clean surrounding near temple areas
6. Boost feeling of relaxation
7. Cutting your waste disposal cost
8. Finding new source of revenue

Conclusions

1. This research describes the management of floral wastes by conversion into valuable products such as Aromatic Wrist Band .
2. The floral wastes can have important applications in Aroma Industries .
3. This will resolve the problems of disposal of floral waste and ultimately the water and environmental pollution get reduced.

Before



After



17th Inter University Avishkaar Research Convention 2022-2023

Category :- Animal husbandry

Level:- PG.

Nanoparticle Based Biofilter Using Carbonized Coconut Husk For Effluent Water Treatment

Abstract:- Exponential growth in industrialization increases pollution in the environment. Nowadays, Due to the release of effluent waste water directly into the environment, which can cause severe problems for humans and aquatic ecosystems. Hence, there is need for the removal of toxic heavy metals and dye from effluent wastewater releasing into open waterbodies. Activated carbon based filters are commonly used for removal of heavy metals. Activated carbon remains an expensive material, and therefore the need for safe and economical methods of eliminating heavy metals from natural sources has prompted research interest in the production of low-cost alternatives to commercially available activated carbon. So present study we are making activated charcoal material from the coconut husk as a natural absorbent which will be used as a nanomaterial for the biofilter

Research problem

1. Industrial effluents released into open water sources causes harm to aquatic and terrestrial animals.
2. Activated carbon nanoparticle are expensive



Objective

1. To synthesize nanoparticles from Carbonized Coconut Husk.
2. To synthesize membrane from CCH nanoparticles.
3. To characterize nanoparticles (SEM/TEM) and testing for efficiency (UPLC/XRD).

Why carbonized coconut husk???

1. Higher adsorption
2. Inexpensive
3. Easily available
4. Easy to maintain
5. Remove odour
6. Antibacterial property



Benefits to society

1. Filters microbial air contamination
2. Prevent toxic chemicals reach into water bodies
3. simultaneous concentration and partial (monovalent ion) demineralization of dairy products.
4. Used for removal of dyes released by textile industry



Methodology



Characterization of CCH Nanoparticle by SEM analysis

CCH Nanoparticles added with solvent and then spread to form membrane

Testing for efficiency (UPLC/HPLC) of membrane using artificially made effluent water

Expected result/ Outcomes

1. Formation of Nanosize particle of Carbonized coconut husk,
2. Heavy metal adsorption capacity in range 75-90%.

Future aspect

1. Can be used for removal of heavy metal from effluent water.
2. Can be used for water purification.

Reference

1. Journal of water reuse and desalination volume 2017 7 (4) : 387-419
2. Journal of surface science and technology 2006 22(3)
3. Interdisciplinary environment review 18(2) : 124-149

HERBAL AIDS TO SAVE USER AGAINST THE COMMON PATHOGENS

CATEGORY : AGRICULTURE & ANIMAL HUSBANDARY



SLOT NO. :

LEVEL: 2

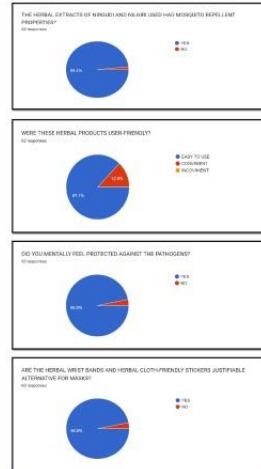
ABSTRACT

Due to increasing micro-organism contamination people are in need of shield against the germs. This research applies use of ethnobotanical studies for making of four herbal products namely Herbal wristbands, Herbal cloth-friendly stickers, Herbal sleeves and Herbal filter pads. These herbal products will save user from the common pathogens present in the environment due to its ayurvedic properties. The ethnobotanical plants used in the research are *Vitex negundo* and *Eucalyptus spp.* The extraction procedure is carried out with the help of Soxhlet apparatus and Clevenger apparatus for oil extraction. These herbal aids have aromatic and stress-reliving properties of the herbs. The herbal products are cost effective and biodegradable.

ETHNOBOTANICAL PLANTS USED FOR HERBAL PRODUCTS

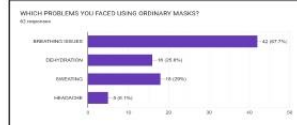
Plant names	Plant part used	Major chemical constituent	Medicinal properties
<i>Vitex negundo</i> 	Extract from dried leaves powder	Terpinenn-4-ol, globulol, β-caryophyllene, α-guaiene, sabinene and linalool	Antiviral, antibacterial, antimicrobial, antioxidants, antimycobacterial and antifungal activities.
<i>Eucalyptus spp.</i> 	Oil from dried leaves powder	Eucalyptol, terpenoids and other phenolic constituents	Antiviral, antibacterial, antifungal, antimicrobial and therapeutic and aromatic effect.

SURVEY



RESEARCH PROBLEM

It is found that people wearing mask, children playing in public parks are facing various problems as mentioned below:



So as to overcome the problems they are facing these herbal products made by using local ethnobotanical plants generally grown by local farmers would help them to a great level


OBJECTIVES

- To make use of ethnobotanical plant extracts on the coating herbal products.
- To protect users against the common pathogens.
- To reduce the stress levels of users.

WHY HERBAL PRODUCTS???

- Save user against the common pathogens.
- Aromatic and stress-reliving properties.
- Cost-effective.
- User-friendly.
- No side-effects.
- Biodegradable.



RESEARCH METHODOLOGY

A. COLLECTION OF PLANT MATERIAL - • Collection of leaves • Sun drying • Conversion into powder form	B. EXTRACTION PROCEDURE- • In case of <i>Vitex negundo</i> – Soxhlet apparatus • In case of <i>Eucalyptus spp.</i> – Clevenger apparatus for oil extraction	C. COATING OF HERBAL PRODUCTS- • Spray technique method • Herbal product subjected to medicinal properties of herbs	FINAL PRODUCTS 
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ZONE OF INHIBITION

NUTRIENT MEDIA	BACTERIAL CULTURE	DAIMETER OF ZONE OF INHIBITION (CM)
Nutrient Agar	<i>E. coli</i>	3.1 cm & 2.8 cm
Nutrient Agar	<i>P. aeruginosa</i>	2.1 cm & 2.3 cm
Nutrient Agar	<i>S. aureus</i>	3.2 cm

BENEFITS TO THE SOCIETY

	EMPLOYMENT TO FARMERS GROWING ETHNOBOTANICAL PLANTS
	EMPOWERMENT TO LOCAL BACHAT GATS
	HERBAL EXTRACT ALSO HAS MOSQUITO REPELLENT PROPERTIES
	SOURCE OF INCOME FOR WOMEN SELLING THESE PLANTS
	WILL MAKE YOU FEEL MENTALLY SAFE
	WILL CREATE HYGIENICE CUSTOM IN SOCIETY
	WILL CREATE AWARENESS ABOUT AYURVEDIC PLANTS

COST BENEFIT ANALYSIS

HERBAL PRODUCTS	COST OF PRODUCTS	VALIDITY OF PRODUCTS
HERBAL FILTER PADS	Rs.30	30-45 days
HERBAL SLEEVES	Rs.30	30 days
HERBAL WRIST BANDS	Rs.10	24 hours
HERBAL CLOTH-FRIENDLY STICKERS	Rs.15	24 hours

CONCLUSION

The medicinal properties of herbal extract will save you against the common pathogens. All these herbal aids are user-friendly, stress-reliving and cost effective.

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Demystifying Women Shopping Behaviour Pre and Post Covid 19 in Palghar



Objectives	Problem Statement
<ol style="list-style-type: none"> To study women shopping behavior pre and post covid To find out factors motivating shopping behavior and ultimate buying decision To study the marketing strategies of companies to keep women as a crucial consumer To find out a different perspective on payment methods To understand futuristic trends in retail channels 	<p>Pandemic created newer roadblocks for both online and physical channels. Owing to pandemic it might have resulted in demand derailment in physical channels which in turn will impact retailers . This paper aims to understand the women shopping behavior pre and post covid</p>

Research Methodology	Analysis and Findings
<p>The primary data for the existing research has been gathered via questionnaire form for record collection. The secondary data had been accumulated from numerous reports, web sites, books, and magazines, Newspapers, SSRN, and Research Papers. The respondents are from Palghar District, Maharashtra. The researcher has adopted the Convenient Sampling Method. Approximately 500 respondents were contacted to fill out the survey questionnaire.</p>	<ul style="list-style-type: none"> 21 % of the respondents feel unsafe while shopping online thereby creating space for retailers to work on consumer safety perception Cash on delivery is a preferred mode of payment for 68 % of the respondents followed by UPI (15%). Net banking is the least preferred mode of payment (3%) 73% of the respondents agree they tend to shop online more than physically during Covid 65 % of the respondents agree online shopping is more comfortable than online Food & Beverages is the most purchased product during Covid (30 %) followed by fashion (28%) and medicines (14%) . 60 % of the respondents agreed covid increased their online shopping and 15% of the respondents shopped online for the first time 57 % of the respondents tend to prefer to shop on mobile application followed by website on mobile (24%) indicating mobile commerce is the new era in ecommerce 42% of the respondents prefer Amazon for their online shopping followed by Flipkart (22%) and Meesho (20 %) Two major factors enabling consumers to know about online website are social media (34 %) and word of mouth (18 %) The top 3 parameters for selecting a particular online website are quality (22 %), price (18%) and service (16%)
<p>Conclusion</p> <p>To sum up Covid 19 has had a huge influence on women’s shopping behavior. Women buyers owing to their financial freedom will continue to buy online even post pandemic. Amazon will emerge as a market leader in Ecommerce industry specially in Palghar District. Social media and word of mouth will drive online website traffic. Consumerism is here to stay as online shopping gets the much-needed growth due to the ease of cash on delivery and UPI payments. There is no substitute for traditional parameters such as quality, price and overall service in shaping consumer buying journey. Mobile commerce will be a major factor driving online ecommerce due to digitization and easy access. Growing number of companies can invest in mobile application to ease shopping experience as youngster prefer mobile commerce. The only research question to be studied ahead is the safety of online transactions which the retailers must incorporate in their business model.</p>	

STUDENT RESEARCH PUBLICATION

**SYNTHETIC, STRUCTURAL AND ANTIMICROBIAL STUDY OF
CHIRAL MIXED LIGAND TRANSITION METAL NI(II) COMPLEXES**

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Abstract: Mixed ligand complexes of the type $[M(\text{PCIINAP})(\text{aa})\cdot 2\text{H}_2\text{O}]$, where M is Ni(II), PCIINAP is sodium salt of p-chloroisnitrosoacetophenone and aa is a chiral amino acid have been synthesized. The present metal complexes could also be synthesized from racemic amino acids by in situ stereoselective complexation. The metal complexes have been characterized by elemental analysis and various physico-chemical techniques. The bonding and structure of the complexes are discussed in detail on the basis of the results of various studies. The metal complexes have been screened for their antimicrobial activity against selected microbial strains.

Keywords: Nickel, mixed ligand complexes, antimicrobial activity.



SYNTHESIS, SPECTROSCOPIC AND BIOLOGICAL INVESTIGATION OF FE(II), CO(II), NI(II), PD(II), CU(II) AND MN(II) COMPLEXES WITH (1E,2E)-N-HYDROXY-1,2-DIPHENYL-2-(2-PHENYLHYDRAZINYLDENE)ETHANIMINE LIGAND

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Abstract: A host of new Fe(II), Co(II), Ni(II), Pd(II), Cu(II) and Mn(II) complexes with (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand have been prepared and characterized through physico-chemical and analytical data. Electronic and Magnetic moment data studies classify the reported as 5 or 6 membered coordinated geometry. The FT(IR) spectra scrutiny between the (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand, its bivalent metal complexes and in analogy with the crystal structure analysis indicate that the (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand exercises neutral bidentated (N, N) behavior through azomethine and oximino group bind with central bivalent metal ions.

Keywords: Benzilmonoximehydrazide, Electronic spectra, Magnetic moment.

**SYNTHESIS AND CHARACTERIZATION OF NEW SCHIFF BASE
METAL COMPLEXES OF CU(II) AND AG(I) CONTAINING
DERIVATIVE OF BENZIMIDAZOLE AS A REAGENT AND STUDY
THEIR BIOLOGICAL ACTIVITIES**

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Abstract: The current work deals with the Schiff base of Cu (II), Ag (I) complexes. Schiff base are a broad class synthesized compound, which is prepared by condensation process between the primary amine groups an aldehyde or ketone group. In this study, a series of Cu (II), Ag (I) complexes containing 1-H-benzimidazole derivatives of schiff base ligand were successfully synthesized from ligand by using corresponding metal salt solutions in alcoholic medium. The ligand along with its metal complexes have been characterized on the basis of analytical data, FT-IR, ¹H-NMR. The mass spectra of compound confirmed the presence of all molecular ion. According to this Spectral data we confirmed that structure for the new Schiff base Metal complex was successfully prepared. in order to evaluate this ligand along with metal have been shows interesting biological activities because of the effect of metal ions upon chelatastion, this C₁, C₂ Schiff base metal complexes have been screened for anti-microbial and anti-bacterial activities.

Keywords: benzimidazole, metal complex, characterization, experiment, biological activities.

**SYNTHESIS AND CHARACTERIZATION OF METAL COMPLEXES OF
Cu(II) AND Ag(I) WITH DERIVATIVE 5-{2-
HYDROXYPHENYL}METHYLIDENE]AMINO}-1,3,4-THIADIAZOLE-
2(3H)-THIONE] AS A REAGENT AND STUDY THEIR BIOLOGICAL
ACTIVITIES**

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Abstract: The present work was aimed to synthesize and characterize metal complexes of Cu (II) and Ag (I). Derivative of aldehyde condensed with amine to form Schiff base ligands. New metal complexes of Schiff base ligand derived from 5-{2-HYDROXYPHENYL}METHYLIDENE]AMINO}-1,3,4-THIADIAZOLE-2(3H)-THIONE] with the metal ions of Cu(II) and Ag(I) have been successfully prepared in alcoholic medium. All the resulting complexes were characterized on the basis of IR, UV-VIS, ¹H NMR and mass spectral studies. According to this spectral data we confirmed that the structure for the new Schiff base metal complex was successfully prepared. In addition, the metal complexes possess interesting biological activities because the aldehyde is converted into a chelating Schiff base ligand. Ligands contain additional donor atoms like O, S, and N etc. This makes them suitable chelating ligands to coordinate with metal ions Cu (II) and Ag (I) to form Schiff base complexes, thus functional groups present in these metal complexes were screened for anti-microbial activities. The preparation of these metal complexes is simple and attractive because of such interesting application in chemistry.

Keywords: Schiff base, metal complex, characterization, application, biological activities.

**DISPERSIVE LIQUID LIQUID MICRO EXTRACTION &
SPECTROPHOTOMETRIC DETERMINATION OF Hg (II) USING DEEP
EUTECTIC SOLVENT AS EXTRACTANT**

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Abstract: Dispersive liquid-liquid microextraction (DLLME) is an efficient extraction technique. Dispersive liquid-liquid microextraction (DLLME) coupled with UV spectrophotometer . It has found wide acceptance because of several advantages, including simplicity, and ease of method development. It is a very easy, low-cost, high-recovery, simple, green, and quick method for metal extraction and preconcentration. Aqueous solution containing Hg(II) formed light pink colour complex with diphenylcarbazide. Mixture of phenol based DES as extractant and ethanol as dispersive solvent is rapidly injected into the aqueous metal solution using syringe. Dispersion is created as a result of the creation of tiny droplets of the dispersive solvent that scatter in the sample solution. Complex formation and extraction are often influenced by parameters such as pH, extraction solvent used as well as its volume, disperser solvent ,the extraction period, centrifugation, and the volume of the chelating agent.

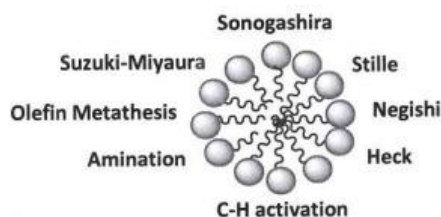
Keywords: Dispersive liquid-liquid microextraction, DES, Phenol, Hg(II), UV spectrophotometer

SURFACTANTSBASED EFFICIENT AND GREENER MICELLAR CATALYSIS IN THE SYNTHESIS OF C–C, C–O, AND C–N BONDS: AN UPDATE

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Abstract: In recent years, the use of surfactants as an efficient and greener alternative to conventional organic synthesis of C–C, C–O, and C–N bond has been emerged. The environmentally ideal micellar catalysis has enabled the alternative approach that offers a development in array of reactions, main concerns like efficiency, substrate selectivity and recyclability. The recent specially designed surfactants have altered the micellar catalysis at milder conditions and are promising in the pursuit of industrial scale applications. The purpose of the update is to capture mainly the general and sustainable surfactants based efficient cross-coupling reactions for the construction of C–C, C–O, and C–N bonds. The present contribution covers the brief account of application of recent surfactants in the catalytic transformations in the aqueous micellar system.

Keywords: micellar catalysis, cross-coupling reactions, micellar system.

**SYNTHESIS, CHARACTERISATION OF BIMETALLIC COMPLEXES
AND STUDY OF THEIR BIOLOGICAL ACTIVITIES**

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Abstract: The Present Research work involved synthesis of reagent by using of 5-amino -1, 3, 4-thiadiazole derivative and Benzimidazole. The reagent further reacted with aldehyde and ketone result to form Schiff Base. This reagent was characterised by ¹H- NMR and Mass Spectroscopy. This ligand used to couple with Cu(II) and Co(II) to form Heterobimetallic complex. This Heterobimetallic complex was characterised by using FT-IR, UV-Visible Spectroscopy. The Regent and its bimetallic complex have been screened for biological activities and both shows promising Antimicrobial Activity against *Staphylococcus aureus*, *Bacillus subtilis*, *Salmonella typhi* and *Escherichia coli*.

Keywords: Schiff base, 5-amino -1, 3, 4-thiadiazole, Benzimidazole, Antimicrobial Activity.

**SYNTHESIS, CHARACTERIZATION OF HETEROBIMETALLIC
COMPLEXES USING A REAGENTS
N,N-1,2-PHENYLENBIS(2-HYDROXYBENZALDEHYDE) AND
1-NITROSO-2-NAPHTHOL AND STUDY THEIR BIOLOGICAL
ACTIVITIES**

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Abstract: The work describes the synthesis and characterization of Schiff base heterobimetallic complex of Cu (II) and Fe(III). The reagent (N,N-1,2 phenylenbis (2-hydroxybenzaldehyde)) is synthesized and characterized by FT-IR, NMR. This reagent used to bind with Cu (II) which gives monometallic complex. Another reagent 1-Nitroso-2-naphthol is coupled with Fe (III) which gives another monometallic complex. These two monometallic complexes are combined which gives heterobimetallic complex. The prepared complex is characterized by using FT-IR, C,H,N,S and UV-Visible Spectroscopy. The prepared complex shows promising Antimicrobial Activity against *B.subtilis*, *S.typhi*.

Key words: (N,N-PHB), bimetallic complex, antibacterial activities

**STUDY THE BIOLOGICAL ACTIVITIES OF BIMETALLIC
COMPLEXSYNTHESIZED BY USING REAGENTS N,N'-BIS(O-
VANILLINIDENE)ETHYLENEDIAMINE AND 1-NITROSO-2-NAPHTHOL**

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Abstract: The ligand (N, N-bis (o-vanillinidene) ethylenediamine) is prepared by using Schiff-base reaction and it is characterized by FT-IR, NMR. This ligand is used to prepare monometallic complex with Ni(II). This monometallic complex is combined with another monometallic complex which is synthesized by using reagent 1-nitroso-2-naphthol with Hg(II) to synthesize heterobimetallic complex. This synthesized heterobimetallic complex is characterized by using FT-IR, UV-Visible spectroscopy and C,H,N,S. Different bacterial strains such as *E.coli*, *S.aureus*, *B.subtilis* and *S.typhi* are used to check the antibacterial activities of bimetallic complex. The biological activity data showed that the bimetallic complex exhibits antibacterial activities.

Keywords: (N,N'-VED), bimetallic complex, antibacterial activities.

CYTOTOXICITY STUDY OF MEDICINAL PLANT - TRIUMFETTA RHOMBOIDEA

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Abstract: The present investigation was done to evaluate cytotoxicity of methanolic extract of medicinal plants, *Triumfetta Rhomboidea* on 3T3 mice fibroblast cell line. The plant samples were collected from different regions of Saphale, Maharashtra. *Triumfetta Rhomboidea* has various medicinal applications and therefore it becomes necessary to carry out the cytotoxic effects in its content. The cytotoxic activity of *Triumfetta Rhomboidea* and on 3T3 mice fibroblast cell line was evaluated by using sulforhodamine B assays. The SRB assay has been used to investigate cytotoxicity in cell based studies. The cell viability was calculated and the observed result showed that the plant extracts did not show any toxic effects till 1.0mg/ml.

Keywords: *Triumfetta Rhomboidea*, cytotoxic activity, sulforhodamine B assays

**A UNIQUE VORTEX-ASSISTED DISPERSIVE LIQUID-LIQUID
MICROEXTRACTION COUPLED WITH UV-VISIBLE
SPECTROPHOTOMETRY FOR PRECONCENTRATION OF
METALS USING DEEP EUTECTIC SOLVENTS**

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Abstract: An innovative, simple, and fast extraction approach based on vortex-assisted dispersive liquid-liquid microextraction (VA-DLLME) for the preconcentration of metals was developed in coupled with the UV-Visible spectrophotometric method. The VA-DLLME methodology was used to prepare samples. In this method, extraction solvent and complexing agent were used. An adequate combination of extraction solvent and disperser solvent was swiftly injected into an aqueous solution containing lanthanoids after complex formation using a chelating reagent and consequently, a cloudy solution is formed. It consists of fine droplets of extraction solvent which are dispersed entirely into the aqueous phase. Following phase separation, 1.0 mL of the settled phase containing enriched analytes was evaluated using a UV-Visible spectrophotometric technique. The key parameters would be studied such as pH, λ -max, the extraction solvent type and their volume, extraction duration, the volume of the chelating agent, as well as centrifuge speed, etc.

Keywords: Dispersive liquid-liquid microextraction, Vortex, UV-Visible Spectrophotometry

ESTIMATION OF METALS BY VORTEX-ASSISTED DISPERSIVE LIQUID-LIQUID MICROEXTRACTION TECHNIQUE COUPLED WITH UV-VISIBLE SPECTROPHOTOMETRY USING EUGENOL BASED DEEP EUTECTIC SOLVENTS

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Abstract: Dispersive liquid-liquid microextraction (DLLME) is a unique microextraction technique. It is a very easy, low-cost, high-recovery, simple, green, and quick method for metal extraction and preconcentration. Suitable eugenol based deep eutectic solvent as extractant is rapidly injected into the aqueous metal sample using a syringe and dispersion is created by using vortex machine. Following centrifugation, the tiny particles of extraction solvent settle to the bottom of the test tube. λ -max was studied by using a UV-Visible spectrophotometric technique with 1.0 mL of the settled phase containing enriched analytes after phase separation. Various significant factors would be studied including pH, the kind of extraction solvent used as well as its volume, vortex time, the extraction period, centrifuged speed, and the volume of the chelating agent.

Keywords: Dispersive liquid-liquid microextraction, Eugenol.

“Analytical method development for quantitative estimation (assay and related substance) of ‘(S)-amlodipine di-p-toluoyl-D-tartaric acid”

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ABSTRACT

For (S)-amlodipine di-p-toluoyl-D-tartaric acid, a reverse phase high performance liquid chromatography (RP HPLC) method was developed and validated. The analysis was performed on a HYPERSIL (250 x 4.6 mm, 5 m) column with a mobile phase of Acetonitrile: Water (80:20v/v) at a flow rate of 0.8ml/min (UV detection at 249 nm). (S)-Amlodipine di-p-toluoyl-D-tartaric acid has a retention time of 5.742 minutes. In the concentration range of 4-24 ppm, (S)-Amlodipine di-p-toluoyl-D-tartaric acid showed a linear response. (S)-Amlodipine di-p-toluoyl-D-tartaric acid's correlation co-efficient ('r' value) was 0.999. The created method was validated for linearity, accuracy, precision, selectivity range, force degradation research, and robustness, and it was discovered to be exact, accurate, linear, and specific. The approach was validated in accordance with ICH guidelines. The RSD for intra-day and inter-day precision was discovered to be less than 2%. The percentage recoveries (S)-Amlodipine di-p-toluoyl-D-tartaric acid ranged from 98.74 to 101.11%, with an overall percent mean recovery of 99.59%, which was in good agreement with the indicated amount in pharmaceutical formulations.

ANTI-MICROBIAL ACTIVITY OF NATURAL DEEP EUTECTIC SOLVENT (DES) OF EUGENOL AND CETRIMIDE

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Abstract: The use of solvents in chemistry is enormous. Even though it has large applications, there are many side effects. Being harmful to the environment, toxic in nature, volatile, flammable are the major drawbacks of conventional solvents. Conventional solvents were replaced by Ionic Liquids and now Ionic Liquids are replaced by DES. DES which is a green solvent discovered by Abbott, et al. 2001 has emerged as an alternative for harmful & costly Ionic liquids and organic solvents. It is the mixture of Hydrogen Bond Acceptor (HBA) and Hydrogen Bond Donor (HBD) in definite molar ratio. They are bio-degradable, eco-friendly and cost effective. DES are extensively used in organic reactions, micro extraction techniques and metal processing methods. Limited research work has been done on medical applications of DES. Although, some research papers are available on anti-microbial, cytotoxic properties of DES. Our study is based on DES prepared from Cetrinide which acts as HBA and Eugenol (extracted from clove oil) as HBD. They are mixed together in definite Molar ratio to form DES. It is a hydrophobic DES. Their physical properties such as density, boiling point, etc. are determined. Anti-microbial activity is to be studied.

Keywords : Eugenol, Cetrinide, DES, anti-microbial

SYNTHESIS, CHARACTERIZATION OF METAL COMPLEXES USING [AMINO, THIO, WITH AZOLE GROUP] AS REAGENT AND STUDY THEIR BIOLOGICAL ACTIVITIES

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Abstract : The present work includes the synthesis of ligand[AMINO,THIO, WITH AZOLE GROUP]and their Cu(II) and Ag(I) complexes were synthesized and characterized by ¹H-NMR and Mass spectroscopy. By the reaction of (amino and thione) with azole a new Schiff base (L) is obtained. The reaction of this ligand with Cu(II) and Ag(I) salts in different stoichiometries leads to the complexes (ATA)-Cu(II) and (ATA)-Ag(I). the NMR and M.S. studies confirm the formation of ligands and the presence of M – L interaction between molecules. A new Schiff base was prepared by the mannich base reaction and shows negligible antibacterial activity in gram-positive bacteria and that the binding of metals largely increased this activity.

Keywords: Schiff base, Metal complexes, Cu/Ag metals, azoles, Antibacterial agent.

**VORTEX-ASSISTED DISPERSIVE LIQUID-
LIQUIDMICROEXTRACTION COUPLED WITH
SPECTROPHOTOMETRY FOR DETERMINATION OF CU (II) USING
EUGENOL BASED HYDROPHOBIC DEEP EUTECTIC SOLVENT**

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Abstract: A new simple, rapid, inexpensive, effective and environmentally friendly pre-concentration method for determination of trace amount of Cu (II) metal ion was developed using Vortex assisted Dispersive Liquid-Liquid Microextraction coupled with UV-Vis Spectrophotometry with Eugenol based hydrophobic Deep eutectic solvent (DES-DLLME). In this method copper ions is complexed with sodium diethyl Di-thiocarbamate (DDTC) at 1-2 pH range. Cu-DDTC complex formed was extracted into hydrophobic DES followed by Vortex agitation for 1 minute at 2800 rpm. The resultant cloudy solution was centrifuged at 5000 rpm for 1 min and the sedimented extracted phase enriched with Cu-DDTC complex determine by UV-Vis Spectrophotometer at λ_{max} 435nm. The various parameters viz. type and volume of DES, amount of Complexing agent (ligand), salt effect, extraction time, and centrifugation time, etc were investigated and evaluated. Under optimal experimental conditions, analytical figures of merit had been studied as LOD, LOQ, EF and RSD. In proposed method, Cu (II) ions had been detected in μg and solvents required in μL . Hence method is environment friendly and follows green chemistry principles. The proposed method was also useful for the analysis of various real samples at trace levels. Abbreviations: Cu – Copper, DES – Deep Eutectic Solvent, DLLME – Dispersive Liquid-Liquid Microextraction. DDTC – Sodium diethyl dithiocarbamate, LOD – Limit of detection, LOQ – Limit of quantification, RSD – Relative standard deviation, EF- Enrichment Factor
Keywords: Copper, Deep eutectic solvent, dispersive liquid-liquid microextraction (DES DLLME); Sodium diethyl dithiocarbamate (DDTC), UV-Vis Spectrophotometry.

Keywords: Di-thiocarbamate, Microextraction dispersive liquid-liquid microextraction.

BIO-WASTE TO BIO-CATALYST: AN EFFICIENT ROUTE FOR CHEMICAL SYNTHESIS

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Maharashtra- 401404

Abstract: To prepare new organic compounds we need to setup a reaction with various chemicals which are most of the time leads to environment pollution. Today major focus is shifted towards reducing this pollution by utilizing green chemistry applications. One such principle from green chemistry is use of catalyst and increases the atom efficiency and reduces the pollution. Catalyst can be inorganic or organic compound but in present research topic we selected bio-catalyst which is almost bio-waste from farms. Bio-catalyst proposed here are *Cystus scoparius*. Catalysts were tested for synthesis of benzimidazole and showed good catalytical activity by reducing time, increasing yield of the product with recyclability up to three runs. Obtained compounds were established on the basis of spectral technique.

Keywords: Bio-waste, Bio-catalyst, *Cystus scoparius*, benzimidazole.

**TRIAZOLE SYNTHESIS USING *PEUCEDANUM GRANDE* NOVEL
BIOCATALYST**

Pankesh Shingada, Mayuri Raul and Hrushikesh Deokar
Sonopant Dandekar Arts, V.S .Apte Commerce & M.H. Mehta Science College, *Palghar(W)*,
Maharashtra- 401404

Abstract: Due to increase in environmental pollution in recent years chemist also proposes various pathways for organic synthesis to reduce pollution. To reduce the synthetic pathways pollution, researchers are reporting insitu reactions or biocatalyst. Biocatalyst is recent decades attracted focus of many researchers because of its results. Here we have reported synthetic reaction with use of biocatalyst obtained from nature and employed for synthesis. Synthesis shows good results in time, yield and quality of product. Bio-catalyst proposed here is *Peucedanum grande*. . Catalysts was tested for synthesis of triazole synthesis and showed good catalytical activity by reducing time, increasing yield of the product with recyclability up to three runs.

Keywords: Bio-catalyst, triazole, *Peucedanum grande* .

BIGINELLI REACTION - A GREEN PERSPECTIVE

Asmita Sawant and Hrushikesh Deokar

Sonopant Dandekar Arts, V.S .Apte Commerce & M.H. Mehta Science College, *Palghar(W)*,
Maharashtra- 401404.

Abstract: Biginelli Reaction involves acid- catalyzed, onepot synthesis of DIHYDROPYRIMIDONE (DHPMS) using material such as benzaldehyde, urea and ethyl acetoacetate in presence of green acid catalyst i.e., *Cytisus scoparius* which gives good percentage of yield. DHPMs possess a wide range of pharmacological activities. So by using green catalyst we have tried the synthesized of DHPMs using ecofriendly technologies. DHPMs possess diverse biological activities such as anticancer, antiulcer, antioxidant, antimalarial etc.

Keywords: Biginelli Reaction, DHPMS, *Cytisus scoparius*

Paper Presentations 2022-23

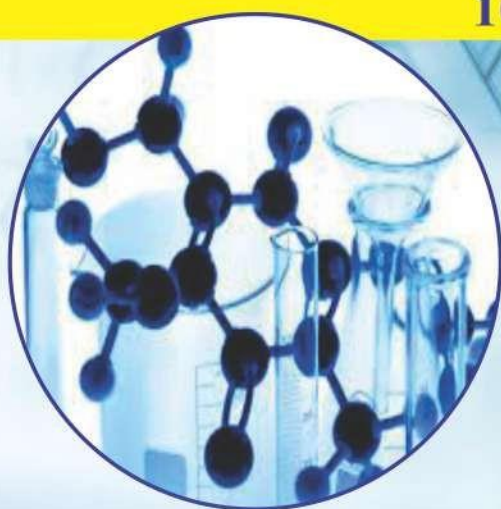
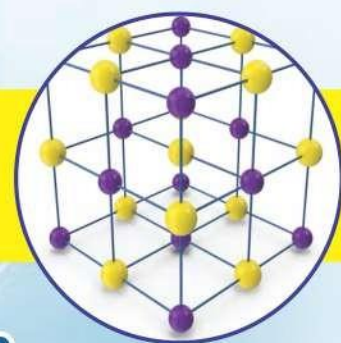
Sr. No.	Name of the Student	Title of Paper	Class	Roll No
1	Ms. Vina Shrikant Dhasade	Synthetic, Structural and Antimicrobial Study of Chiral Mixed Ligand Transition Metal Ni(II) Complexes	Ph.D. 3 rd Year	
2	Shabade Samir Shanteshwar	Synthesis, Spectroscopic and Biological investigation of Fe(II), Co(II), Ni(II), Pd(II), Cu(II) and Mn(II) complexes with (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand	Ph.D. 1 st Year	3
3	Hardik tukaram Deshmukh	Synthesis and characterization of new chifon base metal complexes of Cu(II) and Ag(I) containing derivative of benzimidazole as a reagent and study their biological activities.	M.Sc by research	3
4	Rohit Jayesh Gawad	Synthesis and characterization of metal complexes of Cu(II) and Ag(I) with derivative 5-{2-Hydroxyphenyl)methylidene]amino}-1,3,4-thiadiazole-2(3H)-thione] as a reagent and study their biological activities	M.Sc by research	2
5	Yogita.S.Patil	Dispersive liquid liquid micro extraction & Spectrophotometric determination of Hg (II) Using deep eutectic solvent as extractant.	M.Sc by research	4
6	Sunil Gadakh	Lung Surfactants: An Overview of the Role in Respiratory Diseases	Ph.D. 3 rd Year	
7	Shraddha Shankar Parab	Synthesis, Characterization of bimetallic complex and study of their biological activities	Ph.D. 3 rd Year	4
8	Ms. Shrutika Raut	Synthesis, Characterization Of Heterobimetallic Complexes Using A Reagents N,N-1,2phenylenbis(2hydroxybenzaldehyde) And 1-Nitroso-2-Naphthol And Study Their Biological Activities	Ph.D. 3 rd Year	
9	Ms. Jaiba Shahanavaj Shaikh	Study The Biological Activities Of Bimetallic Complex Synthesized By Using Reagents N,N'-Bis(O-Vanillinidene)Ethylenediamine And 1-Nitroso-2-Naphthol	Ph.D. 3 rd Year	

10	Siddhi Satish Mhatre	Cytotoxicity study of medicinal plant - <i>Triumfetta rhomboidea</i>	Ph.D. 4 th Year	
11	Arundhati Nighojkar	A unique vortex assisted dispersive liquid-liquid micro extraction coupled with UV - Visible spectrophotometry for preconcentration of metals using deep eutectic solvents.	Ph.D. 1 st Year	4
12	Mrunmayi Jayesh Churi	Title of the Research: Poster : Estimation of metals by vortex assisted dispersive liquid liquid microextract technique coupled with uv visible spectrophotometry using eugenol based deep eutectic solvents	Ph.D. 1 st Year	
13	Abhijit Desai	Analytical Method Development for quantitative estimation of amlodipine	Ph.D. 1 st Year	2
14	sahili sudhakar shivgan	antimicrobial activity of deep eutectic solvent of eugenol and cetrimide	MSC – II(organic chemistry)	633
15	kaustubh sunil ghude	Synthesis, Characterization Of Metal Complexes Using [Amino, Thio With Azole Group] As A Reagent And Study Their Biological Activities.	M.Sc by research	1
16	Mr. Laxman Subhash Parhad	Vortex Assisted Dispersive liquid –liquid micro extraction coupled with spectrophotometry for determination of Cu(II) using eugenol based hydrophobic deep eutectic sopvent.	Ph.D. 3 rd Year	
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DISTRICT – PALGHAR, MAHARASHTRA**

**International Conference on
Recent Advances in Chemical Sciences
10th March, 2023**



Souvenir

**RACS
2023**



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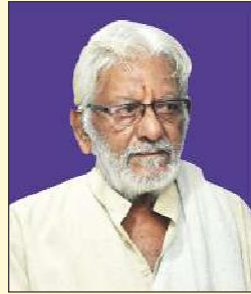
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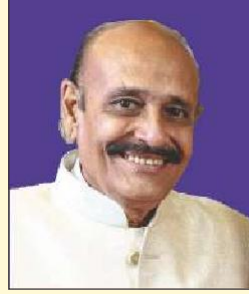
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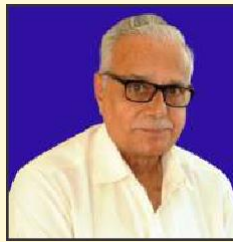
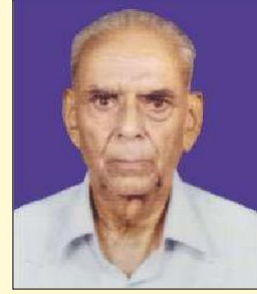
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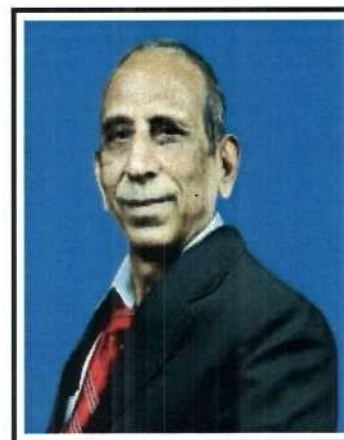
President`s Message

I congratulate Department of Chemistry for organizing one day international conference on “Recent Advances in Chemical Sciences”. The Sonopant Dandekar Arts, V. S. Apte Commerce and M. H. Mehta Science College has always valued its students` education and general growth. The college encourages its young inventors to participate in various research activities. It is the need of the hour to work together to promote innovation and foster new approaches that will enable us to make meaningful progress towards a sustainable future.

I am confident that this conference will offer a great platform for academics, researchers, scientists, and industry persons to exchange experiences and expertise. With this conference, the latest developments trends and exposures in the field of research will be explored. Young researchers will have a fantastic opportunity to upgrade their knowledge.

All of the delegates from National and International fraternities are warmly welcomed by the administration. I send my best wishes to all the participants and conference organizers for the success of conference.

Adv. G. D. Tiwari
President
Sonopant Dandekar Shikshan Mandali
Palghar



Message from Dr. R. S. Lokhande

It is a matter of great pleasure to me that the Sonopant Dandekar Shikshan Mandali's Sonopant Dandekar Arts, V. S. Apte Commerce and M.H. Mehta Science College, Palghar has organized a One Day International Conference on Recent Advances in Chemical Sciences (Hybrid Mode)' on Friday, March, 2023. Chemistry is the study of matters. Scientists learned the weight of the neutrino, Quantum Nanomagnet, Sodium batteries, Carbon sink etc. A group of chemists from Rice University have announced the results of their research, which prove that used plastic can be helpful in the fight against high carbon dioxide emissions. As reported in the "ASC Nano. The chemists from the Rice University pyrolysed the plastic in the presence of potassium acetate, resulting in very specific molecules that have microscopic pores and are great at capturing and binding CO₂ molecules. This material could be used as an ideal carbon dioxide absorber, e.g. in the form of filters for the chimneys of power plants burning fossil fuels. Such an absorber would be characterized by properties that allow for multiple use, and additionally, capturing a ton of CO₂ with it would be several times cheaper than current methods of sequestration (capturing) of carbon dioxide. Like this there are various aspects of advances in Chemical Sciences upcoming recently. The conference would provide the Suitable platform for exchanging the views from different corners of India. The deliberations will not only benefit the local scholars but the follow up of the conference will certainly play an important role in formulation of new ideas to the research workers in various fields of research in science and particularly in Chemistry. I feel privileged to send my best wishes to the young organizers with my congratulations and to the participants. I am confident the delegates would have an enriching experience and the deliberations would set high standards for future research, teaching and extension of theme of the conference. I wish every success for the event.

Dr. R. S. Lokhande
Head, School of Basic Sciences & Chemistry
Director, Research Cell
Jaipur National University, Rajasthan



Principal's Message

Chemical Science is crucial in shaping the modern world, from the development of new materials and medicines to the production of energy and the mitigation of environmental changes. The researcher's inventions improve people's lives and make the world a better place.

It is indeed a moment of pride that Department of Chemistry is organizing One Day International Conference on "Recent Advances in Chemical Sciences" in hybrid mode. This conference will feature some significant chemistry inventions. The conference will provide a platform for scholars across the globe to share their latest findings, exchange their ideas and can get an opportunity to collaborate with colleagues. The knowledge and insights gained from this conference will definitely lead to breakthroughs in research, innovation and discovery with far reaching implications around the world. The conference will help to grow and nurture new ideas in the mind of researchers.

I wish you all the very best in your research endeavors.

Dr. Kiran J. Save

Principal

Sonopant Dandekar Arts, V. S. Apte Commerce and

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Preface

We, Department of Chemistry at Sonopant Dandekar Arts, V. S. Apte Commerce and M. H. Mehta Science College are delighted to host One Day International Conference on Recent Advances in Chemical Sciences in hybrid mode.

The conference aims to bring altogether the research scholars and industry personnel to exchange and discuss the new inventions, innovative ideas and promote work in their respective fields. The main objective of the conference is to upgrade new trends in the field of chemistry and apply recent advances in chemistry.

The conference is incorporated with a series of sessions from esteemed guests in the field of chemistry. There will be oral (online and offline) as well as poster presentation during the conference which will explore the researchers' ideas and his work to other participating members.

We are thankful to our eminent key note speaker and resource persons, Dr. Lucio Melone, Dr. R. S. Lokhande, Dr. V. R. Patil, Dr. Atul Chaskar for accepting our invitation and acknowledgment for the presence in conference.

A conference with such a magnitude needs the support and cooperation of individuals and agencies in many ways. We are extremely grateful to our President Adv. G. D. Tiwari, Management members and Principal, Dr. Kiran Save for their constant encouragement and motivation for this conference. We are also thankful to our Vice Principal Dr. Tanaji Pol and Prof. Mahesh Deshmukh for their timely support and guidance for this conference. We also thank all the teaching, non-teaching and organizing committee members for their enthusiastic efforts to make this conference a successful one. We appreciate all the research scholars for their active participation in conference through online as well as offline mode. We hope this conference will be beneficial for your future endeavours.

Dr. Suhas Janwadkar

Convener

Dr. Dilip Yadav

Co-Convener

About the College.....

Sonopant Dandekar Shikshan Mandali was founded in August 1968 by the lovers of education to commemorate Late Sonopant Dandekar, the scholar of higher degree, philosopher, strong protagonist of Varkari Sampradaya, the great narrator of “Dnyaneshwari” and the son of this soil. The dream of Late Sonopant Dandekar was came into reality by starting Sonopant Dandekar Arts and Vaman Shridhar Apte Commerce College in June 1970 with an initial strength of 150 students. The Science College was started in 1984. At present 11000 students are taking quality education in the college that was started with only 150 students in 1970.

Today, Sonopant Dandekar Arts, V. S. Apte Commerce and M. H. Mehta Science College has become the premier institution in the University of Mumbai as well as in newly formed Palghar district. The college offers following courses: B.A., B.Com., B.Sc. Biotechnology, BMS, B.Sc. Computer Science, B.Sc. IT, BFM, M.A., M.Com., M.Sc. and Ph.D. in Chemistry, Botany, Zoology, Biotechnology. Sonopant Dandekar Shikshan Mandali’s Law College offers a five-year L.L.B. and L.L.M degree. It has also started with various certificate courses. The college site is home to the Yashwantrao Chavan Maharashtra Open University’s centre.

By taking into account the demand of the circumstances and the job chances available worldwide in recent years, the management has begun a variety of careeroriented courses from undergraduate to post graduate level. The institution has MOU with various industries to close the gap between education and employment.

Sonopant Dandekar Arts, V. S. Apte Commerce and M. H. Mehta Science College has been consistently flourishing in University of Mumbai’s Avishkar Competition. For the remarkable project submitted by Yagnesh Harad under the guidance of Dr. Sapna Jadhav, Department of Physics, the college was awarded gold medal. The college students actively participated in the University of Mumbai’s Youth Festival and gave outstanding performances.

The college was awarded with “Best College Award” by University of Mumbai in the academic year 2017-2018. College was bestowed with “Samajhik Bhan Puraskar” by Times Group. College Magazine “Spandan” is awarded with Best Magazine in Maharashtra by Yeshwantrao Chavan Pratishthan, Mumbai. R. A. Poddar College of Commerce and Economics, Mumbai has also awarded College Magazine as “Best Magazine” amongst the colleges affiliated to University of Mumbai for two consecutive years. Dr. Kiran Save, Principal of the college received Best Teacher Award from University of Mumbai. Since last five years, institution is ranked among first 100 institutions of India in a survey conducted by India Today – MHRM survey and Outlook. The institution is ranked second among colleges in India with affordable tuition fees by the same survey

About Department of Chemistry.....

In the year 1984, the Department of Chemistry's firm basis was laid. It has grown into an extravagant roof of knowledge that supports the overall growth of its students. The Department of Chemistry provides the following degrees: B.Sc. (Six Units), M.Sc. Organic Chemistry and Analytical Chemistry (By Paper), M.Sc. Chemistry (By Research) and Ph.D. programme. The department has laboratories specifically designed for undergraduate, post-graduate, research laboratory and an advanced instrumental lab with sophisticated instruments.

We conduct various student-oriented activities which include seminars, workshops, research projects, educational visits, etc. It also offers campus interview programme to its students. The department in collaboration with Lupin Ltd. is successfully conducting a three-month Certificate Course in Quality Control and Instrumentation. In addition, the department in collaboration with Aarti Laboratories is providing its undergraduate and post-graduate students a certificate program in gas chromatography. We have also successfully completed a three-year degree course on "B.Voc. in Pharmaceutical Chemistry" with a batch of 45 students from different regions of Maharashtra in collaboration with Tata Institute of Social Science, Mumbai and Lupin Limited, Boisar.

Faculty members had completed four minor research projects from University of Mumbai and has received approval of one major research project from Rajiv Gandhi Science and Technology Commission, Government of Maharashtra.

Faculty members of the department are always engaged in various research projects, authoring books, registration of patents and publishing research papers in the reputed international and national journals.

Key Note Speaker

Developing functional materials by nitroxide radicals

Nitroxyl radicals, or nitroxides, are N,N-disubstituted NO radicals with a delocalized unpaired electron shared between the nitrogen and oxygen atoms. They have found application in several fields that include organic synthesis and polymer chemistry [1], spin labelling of biomolecules [2], energy storage [3], and biomaterials science [4]. The aim of this presentation is to show some recent applications of nitroxides to the development of functional materials derived from natural sources. Indeed, after a brief introduction on nitroxides, the focus will be on the use of 2,2,6,6-tetramethylpiperidine-N-oxyl (TEMPO) radical as catalyst for the oxidative preparation of nanocellulose (NC) [5]. NC is a very versatile building block for the creation of new smart functional materials for bioengineering applications [6], for the decontamination of water [7-9] and for the anion sensing [10-11]. In the last part of the talk, the focus will be on the preparation of supramolecular polynitroxides based on cyclodextrins, a class of cyclic oligosaccharides derived from starch and extensively used in biomedicine due to their capability to form host-guest complexes with several drugs. The redox properties of these polynitroxides have been studied by EPR spectroscopy and cyclic voltammetry and their potential application as contrast agents has been investigated on animal models by in vivo magnetic resonance imaging (MRI) on glioblastoma tumor as target [12-14].

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Resource Person

Exploring the use of nanomaterials for Social Cause

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Nano-chemistry is a relatively young area of study dedicated to perfecting methods for creating materials on the nanometer scale (1–100 nm). Nanomaterials display unique features such as magnetic, electrical, optical, mechanical, and catalytic properties that are substantially different from their bulk counterparts. Nanomaterials' advantageous properties make them prime candidates for the design and preparation of novel functional materials with applications in a wide range of sectors, including catalysis, imaging, medicine, energy research, coatings, and the environment. Our research group demonstrated that the nanoparticles can be used for the invisible barcoding of carbon fiber and glass fiber-reinforced epoxy composite parts that are used in the manufacturing of airplanes, expensive luxury cars, and other automotive sectors. Based on nanotechnology we have developed multi-substrate Antiviral Nanocoating by in-situ production of copper and silver nanoparticles inside a polymer matrix that has antiviral capabilities to deactivate SARS-CoV-2 from contaminated surfaces to restrict further spreading effectively. These coatings are aqueous, but after film formation, they turn hydrophobic to provide strong water-resistant films with good washing fastness and long-lasting antiviral effects. Nanotechnology may also be employed to improve the lithium-ion battery & electrochemical performance. In order to increase the value of recycling, we enhanced the electrochemical performance of recovered graphite throughout the recovery process to create a high-performance nanocomposite that could be utilized to produce innovative anode materials.

Keywords: Nanomaterials, Invisible barcoding, Antiviral Nanocoating, SARS-CoV-2

Resource Person

C-H bond Functionalization: A promising tool for the synthesis of Key building blocks for the construction of complex Drug Candidates.

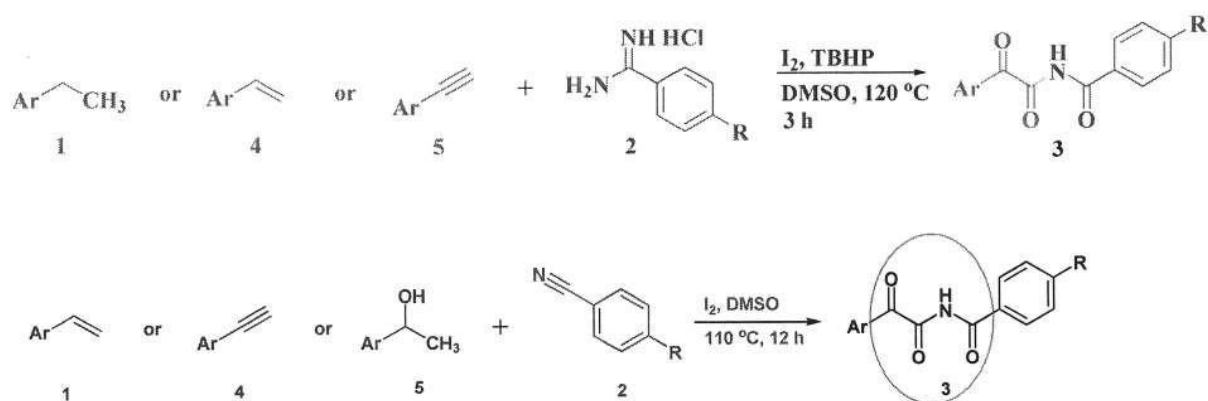
Prof. (Dr.) Atul Chaskar

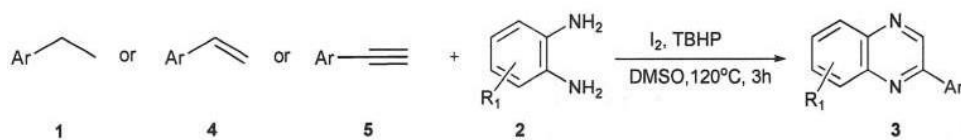
Department of Chemistry

Institute of Chemical Technology Mumbai

In recent years, C-H bond functionalization has given a great impetus to modern organic synthesis owing to the selective construction of new carbon-carbon and carbon-heteroatom bonds leading to the rapid assembly of complex molecular frameworks from easily available simple starting materials. In these circumstances, the power and potential of C-H bond functionalization-inspired domino strategies have been demonstrated by synthesizing the library of medicinally important heterocycles.

In the context of sustainable organic synthesis, metal-free C-H bond functionalization and transition metal-catalyzed C-H bond activation are the most efficient, attractive, powerful and highly desirable strategies. In recent years, I₂ in combination with DMSO has proved to be an environment-friendly, metal-free effective system for the series of organic reactions, particularly in C-H functionalization. This approach has emerged as an attractive tool in organic synthesis due to its diverse applications. Considering this, we have synthesized various key building blocks from easily available and prefunctionalized multiform substrates.





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SYNTHESIS OF ECOFRIENDLY TANNIN BASED NOVEL ADSORBENT FOR REMOVAL OF HEAVY METAL IONS FROM AQUEOUS EFFLUENTS

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Abstract: Currently, heavy metal in aqueous effluent is serious worldwide problem as it causes health issues. Tannin is eco-friendly, bio-sourced natural and highly reactive polyphenol. Due to polyphenolic substrate Tannin efficiently and adsorptively bind to the multivalent metal ions. In this study, Tannin-curcumin-formaldehyde resin was synthesized. The resulting resin was analyzed by IR, SEM, EDS. The synthesized resin was used for the removal of Cr (VI) from aqueous solution. The metal adsorption parameters such as contact time, pH, metal ion concentration and adsorbent dose were investigated. Maximum adsorption capacity was 99.8% at pH-2 for tannin-curcumin-formaldehyde resin.

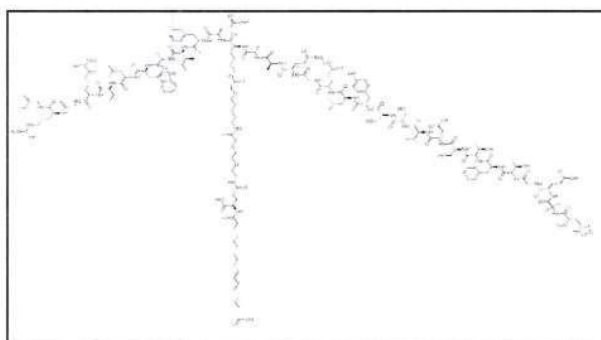
Keywords: Curcumin, formaldehyde, adsorbent, effluents.

QUANTIFICATION OF PROTEIN BASED THERAPEUTICS SEMAGLUTIDE FROM HUMAN PLASMA USING LIQUID CHROMATOGRAPHY MASS SPECTROMETRY

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Abstract: Semaglutide is a glucagon-like peptide-1 receptor agonist used to improve glycaemic control in type 2 diabetes mellitus. (1) Semaglutide is a recombinant DNA produced polypeptide analogue of human glucagon-like peptide-1 (GLP-1) which is used in combination with diet and exercise in the therapy of type 2 diabetes, either alone or in combination with other antidiabetic agents.

Molecular Weight of Semaglutide is 4113.64 da with Molecular formula is C₁₈₇H₂₉₁N₄₅O₅₉ and structural formula as follows (2).



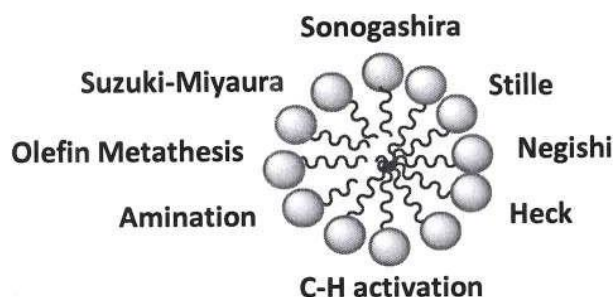
Therapeutic efficiency, of Semaglutide require appropriate administration, without the development of adverse effects or toxicity. Therefore, it is required to develop several quantification methods. From biological fluids. Enzyme-linked immunosorbent assay (ELISA) are available for quantification of Semaglutide in order to achieve the therapeutic goals, (3) The alternative chromatographic instrumental analytical method based on separation science with desirable sensitivity is useful for quantification of Semaglutide from biological fluids. An ultrasensitive UPLC-MS/MS assay for Semaglutide was developed from human plasma. Extraction of Semaglutide from human plasma was performed with a protein precipitation followed by solid-phase extraction technique. The calibrated concentration range from 2.50 ng/ml to 100 ng/ml was linear with correlation coefficients > 0.998. Precise analysis was achieved through the utilization of an isotopically labelled internal standard of Semaglutide d₅. The UPLC-MS/MS method developed for Quantification of Semaglutide is sensitive, selective and specific for said peptide from human plasma. Tandem MS using precursor-to-product ion pair of m/z: 1029.300 → 1238.100 for Semaglutide and m/z: 1030.200 → 1238.100 for internal standard. Simple and protein precipitation followed by advanced solid phase extraction technique (SPE) is used for sample extraction. The liquid chromatography mass spectrometry method is selective and specific with gradient elution using Aeris 3.6 μm wide pore XB-C18 200A°, 100*2.1 mm column with analytical runtime is 11 minute.

**SURFACTANTSBASED EFFICIENT AND GREENER MICELLAR
CATALYSIS IN THE SYNTHESIS OF C–C, C–O, AND C–N BONDS:
AN UPDATE**

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Abstract: In recent years, the use of surfactants as an efficient and greener alternative to conventional organic synthesis of C–C, C–O, and C–N bond has been emerged. The environmentally ideal micellar catalysis has enabled the alternative approach that offers a development in array of reactions, main concerns like efficiency, substrate selectivity and recyclability. The recent specially designed surfactants have altered the micellar catalysis at milder conditions and are promising in the pursuit of industrial scale applications. The purpose of the update is to capture mainly the general and sustainable surfactants based efficient cross-coupling reactions for the construction of C–C, C–O, and C–N bonds. The present contribution covers the brief account of application of recent surfactants in the catalytic transformations in the aqueous micellar system.

Keywords: micellar catalysis, cross-coupling reactions, micellar system.

ECOFRIENDLY APPROACH TO DESIGNED FLUORENONE BY USING TAMARIND PULP EXTRACT

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Abstract:A facile procedure is developed for the synthesis of fluorenone using Tamarind pulp extract as a stable, environmentally benign, low cost and easily available organo stimulant. In presence of Tamarind pulp extract reacts with fluorene to yield corresponding fluorenone. The organo stimulant provides easier workup, affords better yields, and takes less reaction time in comparison to generally used Lewis acid catalyst.

Keywords: environmentally benign, organ stimulant, Tamarind pulp extract etc.

ANTI-MICROBIAL ACTIVITY OF NATURAL DEEP EUTECTIC SOLVENT (DES) OF EUGENOL AND CETRIMIDE

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Abstract: The use of solvents in chemistry is enormous. Even though it has large applications, there are many side effects. Being harmful to the environment, toxic in nature, volatile, flammable are the major drawbacks of conventional solvents. Conventional solvents were replaced by Ionic Liquids and now Ionic Liquids are replaced by DES. DES which is a green solvent discovered by Abbott, et al. 2001 has emerged as an alternative for harmful & costly Ionic liquids and organic solvents. It is the mixture of Hydrogen Bond Acceptor (HBA) and Hydrogen Bond Donor (HBD) in definite molar ratio. They are bio-degradable, eco-friendly and cost effective. DES are extensively used in organic reactions, micro extraction techniques and metal processing methods. Limited research work has been done on medical applications of DES. Although, some research papers are available on anti-microbial, cytotoxic properties of DES. Our study is based on DES prepared from Cetrimeide which acts as HBA and Eugenol (extracted from clove oil) as HBD. They are mixed together in definite Molar ratio to form DES. It is a hydrophobic DES. Their physical properties such as density, boiling point, etc. are determined. Anti-microbial activity is to be studied.

Keywords : Eugenol, Cetrimeide, DES, anti-microbial

ROLE OF SCHIFF BASE AND THEIR METAL COMPLEXES AS CORROSION INHIBITOR

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Abstract: Corrosion is the Universal problem. Corrosion is the destructive attacks on metals by its environment. Hetero atoms such N, O, S are capable of forming coordinate-covalent bond with metals owing to their free electron pairs. Compounds containing π -bonds also generally exhibit good inhibitive properties due to interaction of π -orbital with the metal surface. Schiff base with $-\text{CH}=\text{N}-$ linkage (azomethine) have both the above features combined with their structure which make them effective corrosion inhibitors. In present study we have synthesized Schiff base of benzaldehyde & m-nitroaniline. The synthesized Schiff base we used to prepare metal complexes with transition elements & they are characterized by different spectroscopic technique including IR, NMR etc. The synthesized Schiff base & their metal complexes are used to study corrosion inhibition activity by weight loss measurement

Keywords: Schiff base, Corrosion inhibition, benzaldehyde, m-nitroaniline

**SIMULTANEOUS ESTIMATION OF ACTIVE PHARMACEUTICAL
INGREDIENT BY USING ISOCRATIC REVERSE PHASE HIGH
PERFORMANCE LIQUID
CHROMATOGRAPHY METHOD**

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Abstract: A simple, precise, fast reversed phase High Performance Liquid Chromatographic (RP-HPLC) assay method by external standard method was developed for the determination of HMG-CoA reductase inhibitors it acts as Cholesterol lowering in human body. Three API's Rosuvastatin Calcium, Simvastatin and Lovastatin are in scope during the study work. The chromatographic separation was performed using stainless steel C18 column and by using a mixture of mobile phase comprising of 1mL weak acid in water and acetonitrile at UV 238 nm as detection wavelength. In the present work, a specific stability indicating RP-HPLC method is described for simultaneous estimation of the API. The simultaneous estimation of all three API's could be achieved with a run time of 15 mins minimizing the overall analysis timeline when it will be used in Quality control laboratories. The Limit of detection and limit of Quantification were determined as low as 0.05 ppm and 0.1 ppm respectively. The standard concentration was maintained at 100 ppm so that minimum standard and sample can be used for analysis and still accurate results can be achieved. Linearity was achieved when subjected to range of 0.1 ppm to 150 ppm. The drugs were subjected to stress studies to ensure that the degradation products formed were separated from the drug peak. The proposed developed method was validated as per industry guidance published in different guidelines. This developed analytical method can be used for routine analysis for assay determination and cleaning validations.

Keywords: RP-HPLC, simultaneous estimation, API, HMG-CoA reductase inhibitors, isocratic.

BASE MEDIATED PREPARATION OF HETEROCYCLIC COMPOUNDS

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Abstract: Imines play a very important role in the synthesis of various components of pharmaceuticals, heterocycles and fine chemicals. In addition to this, they are also used as starting materials in various organic synthesis. Hence, there is need to develop efficient and diverse methods for the synthesis of imines.

Normally, imines were prepared by following methods: condensation of amines with carbonyl compounds, oxidation of secondary amines, condensation of amines with alcohols and self-condensation of primary amines with oxidants etc. Though these reported methods are efficient, they have drawbacks such as use of transition metal, ligand and toxic organic solvents. Hence, there is need to develop diverse, efficient and environmentally benign method for the synthesis of imine.

The N-arylureas are used as a new type of cross-coupling component in synthesis as they are easy to store and handle. Hence, they are better alternatives to amines for the synthesis of nitrogen containing compounds. Herein we have developed a new base-facilitated method for the synthesis of imines from N-arylureas and aldehydes. This method provides another alternative to conventional methods for the synthesis of imines.

Keywords: Imines, N-arylureas, aldehydes.

FABRICATION OF 0D/2D SnO₂ QUANTUM DOTS/CdS NANOSHEETS HYBRIDS BY ELECTROSTATIC SELF-ASSEMBLY FOR ENHANCED PHOTOELECTROCHEMICAL WATER SPLITTING

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Abstract: Two-dimensional (2D) materials play a crucial role in photocatalysis due to their excellent electrical and optical properties [1]. Thus, it is important to develop a highly efficient photocatalyst for an effective water splitting and environmental pollutant treatment. Also, solar energy is a rich and clean source, and semiconductor photocatalytic technology can produce storable chemical fuels such as hydrogen. Herein we report a novel fabrication method for CdS nanosheet@SnO₂ quantum dots (SQDs) heterojunction photocatalysts using a simple two-step process involving solution processed and self-assembly techniques. Here firstly SnO₂ quantum dots was prepared at room temperature with positive zeta potential (+99.0 mV) [2] and CdS nanosheet prepared by solution processed with negative zeta potential (-36.2 mV). The surface of the fabricated CdS NS was completely decorated with colloidal SQDs by electrostatic self-assembly approach. The as-synthesized materials were characterized by means of various sophisticated analytical techniques such as Zeta potential and X-ray powder diffraction (XRD), Scanning electron microscopy (SEM), ultraviolet-visible absorption (UV-vis) spectroscopy, The amount of colloidal SQDs on the surface of the CdS nanosheets was optimized to achieve the maximum degradation efficiency under visible light. In addition, the synthesized material was deposited by spin coating on ITO glass and its efficiency was analyzed by sunlight irradiation. The superior performance of CdS nanosheets@SnO₂ quantum dots (SQDs) heterojunction in previous works were attributed to the synergetic effect of the colloidal SQDs, which protected the surface of the CdS nanosheets [3]. This work would provides new inspiration for design of 0D/2D SnO₂ Quantum Dots/CdS nanosheets for photocatalytic water splitting under visible light.

Keywords: Photocatalysis, Quantum Dots, Wastewater treatments, 2D materials.

SYNTHESIS OF HYDROTALCITE NANOMATERIAL (ZN, MG, HT) AND THEIR APPLICATION IN PYRAZOLE CONTAINING HETEROCYCLIC COMPOUNDS

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Abstract: Hydrotalcite compounds like Zn, Mg, HT catalyst was prepared by using the co-precipitation route and characterized from structural, morphological point of view. XRD analysis of synthesized catalyst represents the crystal quality of materials that helps to reaction mechanism. The synthesized Zn, Mg, HT materials was used for the reaction so as to obtain better yield of reaction. Pyrazole containing heterocyclic compounds possesses basic moiety in many drugs like celecoxib, deracoxib etc. and it also possess different bioactivities such as anticancer, anti-inflammatory, antimalarial etc. The present work synthesized hydrotalcite nanomaterial Zn, Mg, HT used as catalyst for the synthesis of pyrazole containing heterocyclic compounds. Further this synthesis has remarkable advantage in terms of catalyst's reusability without much loss of catalytic activity, excellent yields, mild conditions, safety and no waste products.

Keywords: Hydrotalcite, Pyrazole, Catalyst, bioactivities.

**A UNIQUE VORTEX-ASSISTED DISPERSIVE LIQUID-LIQUID
MICROEXTRACTION COUPLED WITH UV-VISIBLE
SPECTROPHOTOMETRY FOR PRECONCENTRATION OF
METALS USING DEEP EUTECTIC SOLVENTS**

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Abstract: An innovative, simple, and fast extraction approach based on vortex-assisted dispersive liquid-liquid microextraction (VA-DLLME) for the preconcentration of metals was developed in coupled with the UV-Visible spectrophotometric method. The VA-DLLME methodology was used to prepare samples. In this method, extraction solvent and complexing agent were used. An adequate combination of extraction solvent and disperser solvent was swiftly injected into an aqueous solution containing lanthanoids after complex formation using a chelating reagent and consequently, a cloudy solution is formed. It consists of fine droplets of extraction solvent which are dispersed entirely into the aqueous phase. Following phase separation, 1.0 mL of the settled phase containing enriched analytes was evaluated using a UV-Visible spectrophotometric technique. The key parameters would be studied such as pH, λ -max, the extraction solvent type and their volume, extraction duration, the volume of the chelating agent, as well as centrifuge speed, etc.

Keywords: Dispersive liquid-liquid microextraction, Vortex, UV-Visible Spectrophotometry

GLYCEROAL MEDIATED SYNTHESIS OF 4-AMINO QUINOLINE CARBOXYLATE

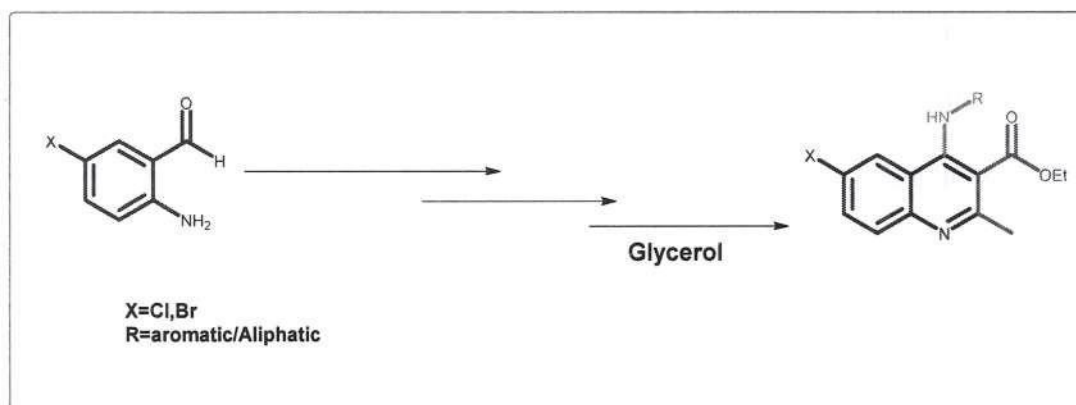
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Abstract: Quinoline containing molecules and their derivatives are widely present in nature. Most of them exhibit a broad spectrum of biological activities. It has been reported for many biological and pharmaceutical properties including anticancer, antiviral, antioxidant, antimicrobial activities. Therefore novel functionalized quinolines is having enormous importance and continuous efforts have been made to find efficient and green methods. In these papers we have reported green protocol for synthesis of 4-amino quinoline carboxylate derivatives using glycerol as a solvent.

Keywords: Quinoline derivatives, Glycerol.



CONVENTIONAL AND GREEN SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL POTENCY OF COMPLEX OF CU(II) WITH 2(E)[(2,4-DICHLOROPHENYL) IMINO] METHYL} -6- METHOXY PHENOL [DCPIMMP]

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Abstract: Both conventional and microwave approaches are used to synthesize the Schiff base ligand and its complex with copper (II). Elemental analyses, IR and ESR spectroscopy, electronic spectra, magnetic susceptibility, and molar conductance were used to characterize the ligand and Cu(II) complex. The Cu(II) complex is non-hygroscopic, solid, and colored. Phenolic anionic (O) functions as a bidentate ligand as a result of the ligand's coordination to the metal ion via azomethine (C=N). By taking into account electronic spectral analysis and magnetic susceptibility values, octahedral geometry has been proposed. Based on its molar conductivity statistics, it is non-electrolytic in nature. Both the ligand and metal complexes have been examined to understand their microbiological activity.

**SYNTHESIS, SPECTROSCOPIC AND BIOLOGICAL INVESTIGATION
OF FE(II), CO(II), NI(II), PD(II), CU(II) AND MN(II) COMPLEXES WITH
(1E,2E)-N-HYDROXY-1,2-DIPHENYL-2-(2-
PHENYLHYDRAZINYLDENE)ETHANIMINE LIGAND**

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Abstract: A host of new Fe(II), Co(II), Ni(II), Pd(II), Cu(II) and Mn(II) complexes with (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand have been prepared and characterized through physico-chemical and analytical data. Electronic and Magnetic moment data studies classify the reported as 5 or 6 membered coordinated geometry. The FT(IR) spectra scrutiny between the (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand, its bivalent metal complexes and in analogy with the crystal structure analysis indicate that the (1E,2E)-N-hydroxy-1,2-diphenyl-2-(2-phenylhydrazinylidene)ethanimine ligand exercises neutral bidentated (N, N) behavior through azomethine and oximino group bind with central bivalent metal ions.

Keywords: Benzilmonoximehydrazide, Electronic spectra, Magnetic moment.

SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL EVALUATION OF BINUCLEAR COMPLEXES OF CoPA AND Tl(I) SALTS

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Abstract: Transition metal complexes of Schiff bases have been used as ‘metal complexes as ligands’ for the study and analysis of N- and O- bridged complexes.¹The investigation on oxygen bridged complexes has been extended by preparing the ligand N,N'-1,2-Propylenebis(2-hydroxyacetophenoniminato)cobalt(II) i.e. CoPA. This paper describes synthesis, characterization and antimicrobial study of binuclear complexes of thallium(I) salts with CoPA.

In aromatic Schiff bases, nitrophenols, the $\nu_{C-Ostr.}(phenolic)$ should occur around 1530 cm^{-1} but in case of alcoholic/enolic (C–O), the band should occur around $1150\text{--}1250\text{ cm}^{-1}$. The $\nu_{C-Ostr.}(phenolic)$ is exhibited by the metal complex ligand CoPA at $1520\text{--}1538\text{ cm}^{-1}$. On complexation, the $\nu_{C-Ostr.}(phenolic)$ band shifted towards higher energy side by $\sim 55\text{--}60\text{ cm}^{-1}$ and also split into two bands. This major shifting of ν_{C-Ostr} frequency in complexes indicates the presence of phenoxo-bridge. It is also suggested that in these complexes, the phenolic C–O bond have partial double bond character. The binuclear Co(II)–Tl(I) adducts show bands in the far-IR region between $445\text{--}538\text{ cm}^{-1}$ and $542\text{--}627\text{ cm}^{-1}$ which are tentatively assigned to ν_{M-Nstr} and ν_{M-Ostr} modes respectively.^{2,3} These bands are absent in the ligand PA but present in the transition metal chelate CoPA at 619 cm^{-1} and $505\text{--}591\text{ cm}^{-1}$. FTIR data confirms the coordination of oxygen-atom of phenolic group and nitrogen-atom of –NO/–NO₂ group to Tl(I) metals in all the binuclear adducts.

Antibacterial and antifungal activities of prepared complexes were carried out against *Staphylococcus aureus*, *Escherichia coli* bacteria and *Candida albicans* fungi by Kirby Bauer method.⁴⁻⁵ The antimicrobial activities were estimated on the basis of size inhibition zone.

Key words : Schiff base, CoPA.

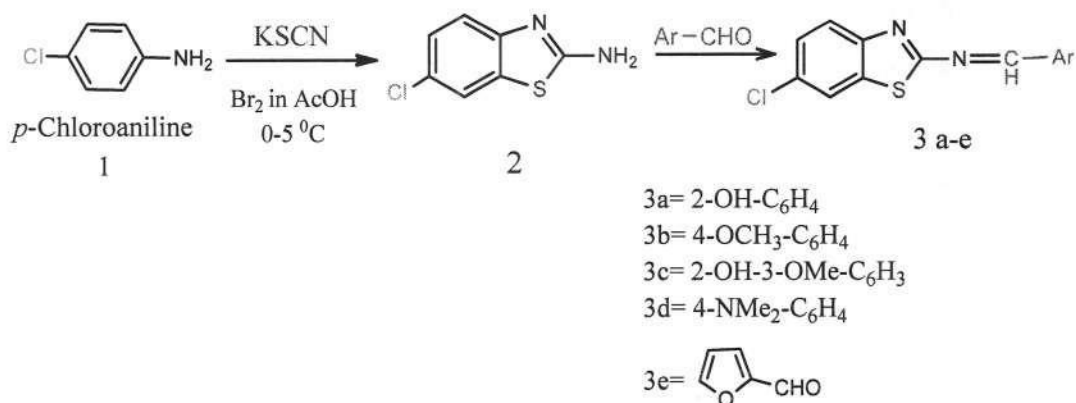
SYNTHESIS AND CHARACTERIZATION OF 6-CHLORO-*N*- (SUBSTITUTED BENZYLIDENE)BENZOTHAZOL-2-AMINE BY MICROWAVE IRRADIATION

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Abstract – A series of 6-chloro-*N*-(substituted benzylidene)benzothiazol-2-amine (**3 a-e**) have been synthesized under microwave irradiation and conventional heating for comparison. 2-amino-6-chlorobenzothiazol (**2**) was condensed with substituted aromatic aldehyde in ethanol/DMF in the presence of glacial acetic acid as a catalyst under conventional heating and microwave irradiation to yield the Schiff base respectively (**3 a-e**). 2-amino-6-chlorobenzothiazole (**2**) was synthesized by the reaction of *p*-chloroaniline (**1**) and KSCN in glacial acetic acid in presence of Br₂ as a catalyst. Further, these Schiff bases were purified by column chromatography over silica gel using hexane:ethyl acetate (7:3) as an eluent. The structures of synthesized compounds were confirmed by IR, ¹H NMR, and Mass Spectral data.



PROBING SUPRAMOLECULAR HOST-GUEST INTERACTIONS USING DENSITY FUNCTIONAL THEORY CALCULATIONS

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Abstract: In this work, we use density functional theory (DFT) to investigate the host-guest chemistry of three common host molecules, cyclodextrin, cucurbituril, and calixarene, with various organic guest molecules. The goal of this study is to gain insight into the binding properties and selectivity of these host molecules towards different guest molecules. Our DFT calculations reveal that the host-guest interactions in all three supramolecular systems are driven by a combination of hydrogen bonding, van der Waals interactions, and electrostatic interactions. The binding energies of the guest molecules with the host molecules show significant variation depending on the size, shape, and functional groups of the guest molecules. We find that the cyclodextrin host molecule prefers to bind smaller, more hydrophobic guest molecules, while cucurbituril and calixarene show a stronger preference for larger, more polar guest molecules. Our results also demonstrate that the geometry and orientation of the guest molecule within the host cavity can significantly affect the strength of the host-guest interactions. In particular, we observe that the guest molecule tends to adopt a specific orientation within the host cavity that maximizes the number of favorable non-covalent interactions.

Overall, our DFT calculations provide valuable insights into the host-guest chemistry of cyclodextrin, cucurbituril, and calixarene host molecules with organic guest molecules, which can be useful in designing new supramolecular systems for various applications.

Keyword: DFT, Host-guest, supramolecules, binding, interactions, organic molecules.

**DONOR-ACCEPTOR BASED PYRIDOPYRAZINO[2,3-
B]INDOLEAMINES AS A NEW CLASS OF MULTIFUNCTIONAL
HETEROCYCLES FOR OPTOELECTRONICS**

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Abstract: The donor-acceptor (D-A) based small molecules possessing intramolecular charge transfer (ICT) property are widely demonstrated in the literature as efficient functional materials in optoelectronic devices which endows the advancement of organic electronics towards commercialization.¹In this context herein five new series of D-A-D based pyridopyrazino[2,3-b]indole amines were prepared by incorporating various diaryl/heterocyclic donor amines at 3rd and 7th positions of pyridopyrazino[2,3-b]indole acceptor core using Buchwald-Hartwig C-N coupling amination reaction and characterized by spectroscopic methods. C-N coupling offers intramolecular charge transfer (ICT) transitions ($\lambda_{\text{max}} = 400\text{--}459\text{ nm}$) which facilitates positive solvatochromism and broad range of emission (blue to red region) in solvent and solid film. Dyes possess the aggregation-induced emission (AIE) characteristics essential for solid state OLED's application. Also dyes have low band gap (1.99–2.43 eV) and comparable HOMO (–5.17 to –5.71 eV) and LUMO (–3.18 to –3.28 eV) energies with reported small organic ambipolar materials. From DFT calculations, computed small singlet and triplet excitation energy difference (ΔE_{ST} (0.01–0.14 eV)) suggest thermally activated delayed fluorescent (TADF) emitting properties of dyes. Thus pyridopyrazino[2,3-b]indole amines propose their multifunctional role in optoelectronic devices.

Keywords: Donor-acceptor architecture, Intramolecular charge transfer (ICT), Aggregation-induced emission (AIE), Ambipolar materials.

**SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL
ACTIVITY EVALUATION OF TRANSITION METAL COMPLEXES
WITH SCHIFF BASE LIGAND FROM THIOCARBOHYDRAZIDE
DERIVATIVE AND 3-METHOXYBENZALDEHYDE**

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Abstract: Novel Schiff base ligand 3-methoxybenzaldehyde-benzilmonoximethiocarbohydrazide and its transition metal complexes of Mn(II), Cr(III), Co(II), Ni(II), Fe(II), Zn(II), Cd(II), Hg(II), Pd(II) and Cu(II) were prepared. The characterization of prepared ligands and their metal complexes were done by elemental analysis, ¹H-NMR, FT-IR spectroscopy, conductance measurement and magnetic susceptibility. The prepared 3-methoxybenzaldehyde-benzilmonoximethiocarbohydrazide ligand acted as a monobasic, tridentate ligand and coordinate with central metal ion through nitrogen atom of azomethine and oximino group and sulphur of thiocarbohydrazide group. Molar conductance values are performed and found low, which confirms the non-electrolytic nature of the metal complexes. The observed magnetic moments and electronic spectral data suggested octahedral geometry for the Mn(II), Cr(III), Co(II), Ni(II), and Fe(II) complexes, tetrahedral geometry for Zn(II), Cd(II), Hg(II) complexes and square planar for Pd(II) and Cu(II) complexes. The ligand and metal complexes were tested for antimicrobial activities.

Keywords: Schiff base ligand; Thiocarbohydrazide; Antimicrobial activities; Transition Metal complexes.

**SYNTHESIS AND CHARACTERIZATION OF NOVEL SUBSTITUTED
BROMOBENZALDEHYDE DERIVATIVES OF 4-AMINOPYRROLO [2, 3-*d*]
PYRIMIDINE**

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Abstract: Substituted bromobenzaldehyde derivatives of 4-aminopyrrolo[2,3-*d*]pyrimidine were reported to act as potent antifungal and antibacterial agents, in this work, a series of novel Substituted bromobenzaldehyde (o-bromobenzaldehyde, m-bromobenzaldehyde, and p-bromobenzaldehyde) derivatives were synthesized. The structures of these compounds were confirmed by elemental analysis, FT(IR), ¹H NMR and UV-visible spectral data. All the newly synthesized compounds were evaluated for their in vitro antifungal and antibacterial activities. Most of the screened compounds showed interesting antifungal and antibacterial activities compared with the used reference drugs (fluconazole and streptomycin).

Keywords: 4-aminopyrrolo[2,3-*d*]pyrimidine, bromobenzaldehyde, fluconazole, streptomycin.

FUNCTIONALIZED MAGNETIC BASED SILICA XEROGEL NANOCOMPOSITE FOR WATER TREATMENT

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Abstract: Herein, we successfully prepared nano-porous Co_2NO_3 : SiO_2 Xerogel(Co-CSX) and Ni_2NO_3 : SiO_2 Xerogel (Ni-CSX) using the acidic sol-gel method and calcined at 500 °C for 3 h. The crystallization behavior, spectroscopic and textual properties were investigated using X-ray diffraction, field emission-scanning electron microscopy, and BET-BJH analysis. The antibiotic properties of the nano-porous Co-CSX magnetic nanocomposite were studied compared to some potentially pathogenic bacteria in water. Both Ni-CAX and Co-CAX were tested for their antibacterial properties included *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Staphylococcus flexnerii* by agar cup diffusion method. MO-CSX was most effective adverse to all the tested pathogens with minimum inhibitory concentrations of 1 mg/L within 24 hours. enterica; the lowest antibacterial activity was observed with the unmodified CAS. Co-CAX showed comparatively greater antibacterial activity against all the 4 pathogens in the present study. The findings revealed that the developed nanocomposite materials were effective disinfectants with a promising application for water purification.

Keywords: Co_2NO_3 : SiO_2 Xerogel, Ni_2NO_3 : SiO_2 Xerogel, antibacterial activity, disinfectants.

SYNTHESIS AND ANTIBACTERIAL ACTIVITY OF N-((1H-BENZIMIDAZOL-2-YL)METHYL)-2-SUBSTITUTED-3H- BENZIMIDAZOL-5-AMINE DERIVATIVESBalasaheb Pathare^a, Tanaji Bansode^b^a Department of Chemistry, B. K. Birla College (Autonomous), Kalyan, Maharashtra, India^b Department of Chemistry, Bhiwandi Nizampure Nagarpalika College, Bhiwandi, Maharashtra, India

Abstract: The increasing commonness of multi-drug resistant bacteria as well as fungi is the motive for development of new active antimicrobial agents. By considering this, the present work represents the synthesis, predicted bioactivity and antibacterial activity of a new series of N-((1H-benzimidazol-2-yl)methyl)-2-substituted-3H- benzimidazol-5-amine 6a–f, synthesized by the reaction of substituted 5-aminobenzimidazol derivatives with 2-chloromethyl benzimidazole. The structures of the synthesized compounds confirmed by using spectroscopic techniques like IR, ¹H NMR and mass spectra. The series of synthesized compounds 6a–f was screened for their antibacterial activity against *E. coli*, *S. aureus*, *K. pneumoniae* and *P. aeruginosa* strains using Ditch-plate method. Predicted bioactivity is also studied by using Molinspiration software.

Keywords: Multi-drug resistant, antibacterial agent, Benzimidazole, Predicted bioactivity

PREPARATION, PHYSICAL, SPECTRAL AND THERMAL CHARACTERIZATION OF MIXED LIGAND CERIUM METAL COMPLEXES ALONG WITH ANTIBACTERIAL STUDY

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Abstract: The study involves preparation of Cerium metal mixed ligand complexes by using 2-hydroxybenzaldehyde oxime and L-Valine, L-Glycine, L-Hydroxyproline, L-Threonine. The synthesized complexes are found to be dark brown in colour and stable solids. Conductometric study confirms that the complexes are non-electrolytic in nature and also found paramagnetic in nature. The infra red spectra study clears that the complexes involves metal-ligand bonding through O,N-donor atoms. The TG & DTA study confirms the presence of coordinated water molecule in the synthesized complexes. The high decomposition temperature of the complexes shows the strong metal ligand bonding within the complexes. UV-Visible spectroscopy clears the intra ligand and LCMT transitions in the complexes. Elemental analysis shows that complexes are in 1:2:1 ratio. The antibacterial activity of the Cerium complexes was studied by using Agar cup method and Tube dilution method which implies that complexes exhibit antibacterial activity against selected strains of bacteria.

Keywords: Ligand , Complexes, Metal, Antibacterial.

**SYNTHESIS AND CHARACTERIZATION OF POLYVINYL ALCOHOL
POLYPYRROLE SILVER NANOCOMPOSITE FILMS WITH DIFFERENT DOPANTS
AND THEIR APPLICATION IN GAS SENSORS**

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Abstract: In the present work, polyvinyl alcohol polypyrrole silver nanocomposite films have been synthesized by chemical oxidative polymerization method with different oxidants and silver nanoparticles have been synthesized by Turkevich method. The formations of silver nanoparticles were investigated by UV-Visible spectroscopy. Synthesized polyvinyl alcohol polypyrrole silver nanocomposite films were characterized by Fourier Transform Infrared Spectroscopy (FTIR), X-ray diffraction (XRD) and Scanning Electron Microscopy (SEM) and results confirms the formation of polypyrrole silver nanocomposites. The electrical conductivity of nanocomposite films were measured by two probe method. These nanocomposites were used as gas sensing materials operating at room temperature.

Keywords: Polypyrrole silver nanocomposites, Turkevich method, FTIR, XRD, SEM, electrical conductivity

BIOSYNTHESIS OF SILVER-COBALT BIMETALLIC NANOPARTICLES USING CATHARANTHUS ROSEUS PLANT EXTRACT

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Abstract: The environmentally friendly room-temperature synthesis of bimetallic nanoparticles (NPs) using plant extract as reducing and capping agents is examined in this study. This procedure is an excellent illustration of "green chemistry" because no additional synthetic chemicals are required as stabilisers & reductants. By mixing the metal sources Silver nitrate (AgNO_3) and Cobalt chloride (CoCl_2) with an aqueous extract of the Catharanthus Roseus Plant as a reducing agent and stabilising agent, bimetallic Silver-Cobalt quantum dots can be synthesized. The synthesized Ag-Co NPs was characterized by UV-visible spectroscopy, IR spectroscopy & DLS for size & zeta potential were used to confirm the formation of bimetallic nanoparticles. The DLS results showed the presence of smaller particles between 12 to 20 nm, while the Z-average size and PDI of the formed nanoparticles were found to be 16 nm and 0.35, respectively. The stability of the synthetic QD was confirmed by the zeta potential measurement of the synthesised NPs, which was found to be -27 mV. The antimicrobial and anticancer applications for these bimetallic nanoparticles are promising.

Keywords: Green Chemistry, Bimetallic nanoparticles, Anticancer.

GREEN APPROACHES FOR DEVELOPMENT OF CHEMICAL SCIENCES

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Abstract: The principles guiding green chemistry have changed over the past 30 years, but the field still has to go beyond its foundations in the environment and human health to become a more systems-based, life cycle-focused, and interdisciplinary field of chemistry. Green Chemistry is a new area of chemistry that focuses on eliminating hazardous and harmful compounds from synthetic processes in favour of more environmentally friendly ones. Green synthesis approaches taken for systematic development of chemical reactions and renovate new producer which are cost effective and eco-friendly. Green chemistry covers all aspects of a chemical product's life cycle, including its creation, use, and final disposal. This article provides an overview of the fundamental principles upon which the idea of "Environmental & green chemistry" is built.

Keywords: Green Chemistry, Environmental Chemistry, Human health, Eco-friendly.

GREEN SYNTHESIS OF NiO NPS USING FICUS DRY LEAVES FOR SYNTHESIS OF XANTHENE MOLECULES AT ROOM TEMPERATURE

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Abstract: We explore the green synthesis of NiO NPs using fallen dry leaves of ficus. The NPs are characterized by FTIR, UV- Visible, FE- SEM, TEM and found to be magnetic. NiO NPs are further Catalyzed in aqueous medium of NaPTS at room temperature viz xanthene molecule synthesis

Keywords: Dry ficus leaves, NiO, Xanthene molecules

COMPARATIVE STUDY OF OXIDATION OF BENZOIC, ISO-BUTYRIC AND ISO-VALERIC ACID HYDRAZIDES TO THE CORRESPONDING ACIDS BY THALLIUM (III) IN 1, 4-DIOXANE MEDIUM - A KINETIC AND MECHANISTIC APPROACH

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Abstract: The reaction between Thallium (III) and benzoic, iso-butyric and iso-valeric acid hydrazides is carried out in a mixture of perchloric and hydrochloric acid medium. The reaction proceeds through formation of complex with reactant, which decomposes in subsequent steps to give product. Effect of acrylonitrile shows, that there is no formation of free radicals. The increase in $[H^+]$ and $[Cl^-]$ decreases the rate of the reaction. The increase in ionic strength does not affect the rate of reaction. The effect of temperature was studied at four different temperatures ranging from $15^{\circ}C$ to $30^{\circ}C$. The activation parameters were also determined and a mechanism is predicted.

Keywords: Kinetics, Thallium(III), Oxidation, BAH, iso-BuAH, iso-VAH.

Green Approach for the Synthesis of 4-hydroxy-3-((4-hydroxy-2-oxo-2H-chromen-3-yl)(phenyl)methyl)-2H-chromen-2-one and its derivatives

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Abstract: A new and convenient method for the synthesis of bis-coumarin based on the condensation of 4-hydroxycoumarin and substituted benzaldehyde in the presence of novel clay material obtained from Bashir farm for the synthesis of bis-coumarin derivatives. Our ecofriendly approach for the synthesis of bis-coumarin is a convenient and simple approach for organic transformations, allowing for the efficient synthesis of bis-coumarin derivatives in an environmentally friendly manner with shorter reaction time, inexpensive and easily available reagent, mild reaction conditions, and simple workup with an excellent product yield.

Keyword: Bis-coumarin, Green Approach.

SYNTHESIS AND ANTIMICROBIAL ACTIVITY STUDY OF 3-NITRO SALICYLALDEHYDE THIOSEMICARBAZONE DERIVATIVE

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Abstract: 3-Nitro Salicylaldehyde Thiosemicarbazone derivative was prepared by using Salicylaldehyde and thiosemicarbazone. The synthesized compounds are characterized by elemental analysis, IR and ¹HNMR. The result shows that the compounds are capable to prevent the growth of *S. aureus*, *Pseudo*, *S. typhi* and *E. coli* by using ditch plate method. The ditch plate method is used to determine antimicrobial potential of new drug which are water insoluble. The growth prevention capability was affected by the solvent and substitute group on the salicyldene part.

Keywords: Salicylaldehyde, thiosemicarbazone and Growth prevention capability.

NANO SCIENCE AND MATERIAL CHEMISTRY

DEPOSITION OF COPPER NANOPARTICLES

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Abstract: Deposition of nanoparticles are proportional to the intensity of plasma. Deposition of Nanoparticles under influence of vacuum pressure, argon gas and water cooled copper sputter source materials with DC power supply. The deposition of copper nanoparticles was done by me during the working day in Excel Instruments in year 2011. The materials (copper) deposited after injecting the argon gas with flow rate 10-60 sccm by mass flow controller and power supply from 540V DC source to sputter source which is attached from vacuum chamber. There are different parameter which helps to make stable and intense plasma inside vacuum chamber with argon gas and power supply. Plasma trigger source can be different design like circular, rectangular and square etc.

Keyword: Deposition of copper. nanoparticle under vacuum pressure 2 mili bar and argon gas 30 -60 SCCM and applied DC voltage 350 to 540V DC current which is connected from magnetron source.

ANTI-VIRUS 2 DEOXY GLUCOSE THERAPY

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Abstract: Contribution of science with reference to utility of chemistry in study of life is a main application as mentioned in this paper. Viruses are having great influence on the cell and group of cell therefore understanding of cell biology and involvement of chemistry in it are very important. 2-Deoxy Glucose is an antiviral drug and it has finds its way in treatment with infection caused by virus and how does it inhibits the proliferation process is described in this work.

Keywords: 2-Deoxy Glucose, Virus, Antiviral drug.

ANALYTICAL METHOD DEVELOPMENT FOR QUANTITATIVE ESTIMATION (ASSAY AND RELATED SUBSTANCE) OF '(S)-AMLODIPINE DI-P-TOLUOYL-D-TARTARIC ACID

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Abstract: For (S)-amlodipine di-p-toluoyl-D-tartaric acid, a reverse phase high performance liquid chromatography (RP HPLC) method was developed and validated. The analysis was performed on a HYPERSIL (250 x 4.6 mm, 5 m) column with a mobile phase of Acetonitrile: Water (80:20v/v) at a flow rate of 0.8ml/min (UV detection at 249 nm). (S)-Amlodipine di-p-toluoyl-D-tartaric acid has a retention time of 5.742 minutes. In the concentration range of 4-24 ppm, (S)-Amlodipine di-p-toluoyl-D-tartaric acid showed a linear response. (S)-Amlodipine di-p-toluoyl-D-tartaric acid's correlation co-efficient ('r' value) was 0.999. The created method was validated for linearity, accuracy, precision, selectivity range, force degradation research, and robustness, and it was discovered to be exact, accurate, linear, and specific. The approach was validated in accordance with ICH guidelines. The RSD for intra-day and inter-day precision was discovered to be less than 2%. The percentage recoveries (S)-Amlodipine di-p-toluoyl-D-tartaric acid ranged from 98.74 to 101.11%, with an overall percent mean recovery of 99.59%, which was in good agreement with the indicated amount in pharmaceutical formulations.

Keywords: (S)-amlodipine di-p-toluoyl-D-tartaric acid, HYPERSIL column.

SYNTHESIS OF NEW FORMAZANATE CO-ORDINATION COMPOUNDS

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Abstract: Formazans have been widely studied since 1941 and have been reported as far back as the 1890. These compounds have attracted interest mainly because of their intense colors. They are commonly used as dyes and as redox-based staining agents for cell biology. Here we are trying to develop of precursor formazans with various substituents at 1-, 3- and 5-positions. Synthesis of formazan-based donor-acceptor conjugated polymers with various aromatic systems and heterocycles such as thiophene, furan, selenophene, flourene, carbazole, etc.by electrochemical polymerization method. The coordination chemistry Formazan will be studied by synthesizing complexes of Formazan with Boron Difluoride and transition metals.

The synthesized compounds will be characterized using various spectral techniques including ^1H NMR, ^{13}C NMR Boron NMR, IR.

Keywords: Formazan, donor-acceptor conjugated polymers, selenophene, carbazole.

MICELLAR SOLUTION PROMOTED AZA - MICHAEL ADDITION OF AMINES TO CONJUGATED ALKENES

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Abstract: Micellar solutions of anionic, cationic and nonionic surfactants are to be used as a reaction media for Aza-Michael reactions of amines to conjugated alkenes at room temperature. SDS (sodium dodecyl sulfate) was found to be more efficient to catalyze this reaction in water. This method provides some interesting improvement in terms of short reaction time, mild reaction conditions, clean and clear reaction profile, ease of handling reagents and environmentally benign conditions.

Keywords: Aza-Michael reaction, surfactants, micelles, water.

COMPARISON OF L-ARGININE, HYDROXYUREA AND NITRIC OXIDE INTERACTIONS WITH TRANSITIONAL METAL IONS

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Abstract: NO* is a free radical with one free electron and as such it is very highly reactive and particularly it interacts with transitional metals. Nitric oxide, gas is an important signaling molecule in the body of mammals, including humans and is an extremely important intermediate in chemical industry. In biological systems there are many enzymes, which contain transitional elements like iron, copper and manganese, which are the most probable sites for nitric oxide to react. Such type of interactions results in considerable modification of the enzyme functions resulting in pathological and even genetic disorders. This needs a critical amount of nitric oxide in the system for proper functioning.

To observe the effects of NO*, various NO* donor compounds are used. Nitric oxide and Hydroxyurea (HU) is shown to increase the levels of NO*. L-arginine is one of the non-essential amino acids. In the body L-arginine is used to make nitric oxide, which reduces blood vessel stiffness, increases blood flow and improves blood vessel function.

The visible spectra of some transitional metals Cu, Fe(II), Fe(III), Cr, Mn, Ni have been studied individually in presence of hydroxyurea (HU) with varying amounts. The spectra are also studied for the effect of varying amounts of metal ion on hydroxyurea. To observe how arginine itself acts on transitional metal ions. The effect of nitroglycerine on metal-arginine binding is also studied. The evaluation of these spectra is carried out for its binding parameters with the help of scatchard plots. The work has revealed certain very significant and interesting data which can have a lot of bearing on many chemical, biological and environmental aspects.

Keywords- scatchard, hydroxyurea, transitional, binding.

SOLVENT EXTRACTION OF LEAD USING DIFFERENT EXTRACTANT

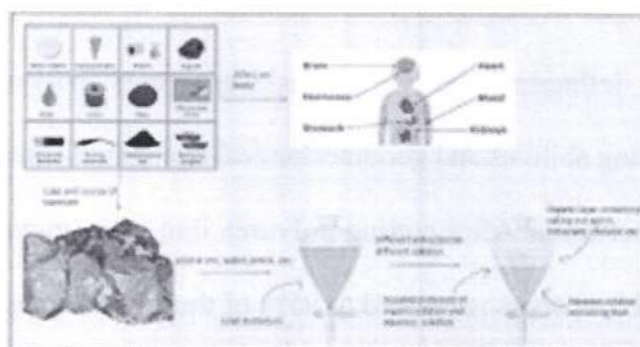
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Abstract: Lead has wide application in manufacturing dyes, batteries, pigments, cable, construction, protection. During their production solid and liquid waste generated which contain hazardous lead. So, it is very necessary to recover and recycle the lead to protect the environment and human health. In hydrometallurgical processes, solvent extraction is an important process for the recovery of non-ferrous metals from different aqueous leach liquor and waste effluent/solutions.



Graphical abstract: -uses, source of exposure, extraction of lead In this present review, extraction of lead with commercial extractant such as calixarene, d2epha, cyanex 272, cyanex 301, cynex 302, dithiocarbamate, dithizone, tributyl phosphate, hexafluorophosphate, crown ethers, methyl isobutyl ketone etc. extracted through commercial medium such as nitrobenzene solution, ionic liquid, toluene, methyl isobutyl ketone, chloride solution, acidic solution etc. have been done.

Keywords: Lead, hydrometallurgical, dithiocarbamate, extractant .

SELF-HEALING POLYUREA ANTICORROSIVE COATING WITH REVERSIBLE NETWORKS BASED ON DYNAMIC HINDERED UREA BOND

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Abstract: Polymers exhibiting dynamic covalent bonds have got a lot of interest in latest generations because of their environmental adaptability, self-healing ability, shape memory property, etc. All for that, most of them necessitate the use of a catalyst or the modification of environmental circumstances before bond reversal process and exchange reactions may occur. Catalyst-free innovative self-healing polyureapolymercoat, which demonstrated exceptional ability to stretch, thermal stability, and autonomous self-healing capacities, were synthesised from the Diisocyanate, 1,13-Diamino-4,7,10-trioxatridecane and commercially available polyetheramine i.e. jeffamine d250. Synthesized polyurea polymer achieved rapid room temperature self-healing abilities and good mechanical strength, by means of simple hindered urea dynamic reversible networks. After cutting polyurea into two separate fragments and re-joined them, the mechanical properties recovered to 95% of those of the original polyurea samples in 12 hours at room temperature, with no additional self-healing agents or environmental changes.

Keywords: Self-healing polyurea, Diisocyanate, Hindered urea bond, Anticorrosive

**STUDY THE BIOLOGICAL ACTIVITIES OF BIMETALLIC
COMPLEXSYNTHESIZED BY USING REAGENTS N,N'-BIS(O-
VANILLINIDENE)ETHYLENEDIAMINE AND 1-NITROSO-2-NAPHTHOL**

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Abstract: The ligand (N, N-bis (o-vanillinidene) ethylenediamine) is prepared by using Schiff-base reaction and it is characterized by FT-IR, NMR. This ligand is used to prepare monometallic complex with Ni(II). This monometallic complex is combined with another monometallic complex which is synthesized by using reagent 1-nitroso-2-naphthol with Hg(II) to synthesize heterobimetallic complex. This synthesized heterobimetallic complex is characterized by using FT-IR, UV-Visible spectroscopy and C,H,N,S. Different bacterial strains such as *E.coli*, *S.aureus*, *B.subtilus* and *S.typhi* are used to check the antibacterial activities of bimetallic complex. The biological activity data showed that the bimetallic complex exhibits antibacterial activities.

Keywords: (N,N'-VED), bimetallic complex, antibacterial activities.

ESTIMATION OF METALS BY VORTEX-ASSISTED DISPERSIVE LIQUID-LIQUID MICROEXTRACTION TECHNIQUE COUPLED WITH UV-VISIBLE SPECTROPHOTOMETRY USING EUGENOL BASED DEEP EUTECTIC SOLVENTS

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Abstract: Dispersive liquid-liquid microextraction (DLLME) is a unique microextraction technique. It is a very easy, low-cost, high-recovery, simple, green, and quick method for metal extraction and preconcentration. Suitable eugenol based deep eutectic solvent as extractant is rapidly injected into the aqueous metal sample using a syringe and dispersion is created by using vortex machine. Following centrifugation, the tiny particles of extraction solvent settle to the bottom of the test tube. λ -max was studied by using a UV-Visible spectrophotometric technique with 1.0 mL of the settled phase containing enriched analytes after phase separation. Various significant factors would be studied including pH, the kind of extraction solvent used as well as its volume, vortex time, the extraction period, centrifuged speed, and the volume of the chelating agent.

Keywords: Dispersive liquid-liquid microextraction, Eugenol.

**SYNTHESIS, CHARACTERIZATION OF HETEROBIMETALLIC
COMPLEXES USING A REAGENTS
N,N-1,2-PHENYLENBIS(2-HYDROXYBENZALDEHYDE) AND
1-NITROSO-2-NAPHTHOL AND STUDY THEIR BIOLOGICAL
ACTIVITIES**

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Abstract: The work describes the synthesis and characterization of Schiff base heterobimetallic complex of Cu (II) and Fe(III). The reagent (N,N-1,2 phenylenbis (2-hydroxybenzaldehyde)) is synthesized and characterized by FT-IR, NMR. This reagent used to bind with Cu (II) which gives monometallic complex. Another reagent 1-Nitroso-2-naphthol is coupled with Fe (III) which gives another monometallic complex. These two monometallic complexes are combined which gives heterobimetallic complex. The prepared complex is characterized by using FT-IR, C,H,N,S and UV-Visible Spectroscopy. The prepared complex shows promising Antimicrobial Activity against *B.subtilis*, *S.typhi*.

Key words: (N,N-PHB), bimetallic complex, antibacterial activities

SYNTHESIS, CHARACTERIZATION OF METAL COMPLEXES USING [AMINO, THIO, WITH AZOLE GROUP] AS REAGENT AND STUDY THEIR BIOLOGICAL ACTIVITIES

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Abstract : The present work includes the synthesis of ligand[AMINO,THIO, WITH AZOLE GROUP]and their Cu(II) and Ag(I) complexes were synthesized and characterized by ¹H-NMR and Mass spectroscopy. By the reaction of (amino and thione) with azole a new Schiff base (L) is obtained. The reaction of this ligand with Cu(II) and Ag(I) salts in different stoichiometries leads to the complexes (ATA)-Cu(II) and (ATA)-Ag(I). the NMR and M.S. studies confirm the formation of ligands and the presence of M – L interaction between molecules. A new Schiff base was prepared by the mannich base reaction and shows negligible antibacterial activity in gram-positive bacteria and that the binding of metals largely increased this activity.

Keywords: Schiff base, Metal complexes, Cu/Ag metals, azoles, Antibacterial agent.

**VORTEX-ASSISTED DISPERSIVE LIQUID-
LIQUID MICROEXTRACTION COUPLED WITH
SPECTROPHOTOMETRY FOR DETERMINATION OF CU (II) USING
EUGENOL BASED HYDROPHOBIC DEEP EUTECTIC SOLVENT**

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Abstract: A new simple, rapid, inexpensive, effective and environmentally friendly pre-concentration method for determination of trace amount of Cu (II) metal ion was developed using Vortex assisted Dispersive Liquid-Liquid Microextraction coupled with UV-Vis Spectrophotometry with Eugenol based hydrophobic Deep eutectic solvent (DES-DLLME). In this method copper ions is complexed with sodium diethyl Di-thiocarbamate (DDTC) at 1-2 pH range. Cu-DDTC complex formed was extracted into hydrophobic DES followed by Vortex agitation for 1 minute at 2800 rpm. The resultant cloudy solution was centrifuged at 5000 rpm for 1 min and the sedimented extracted phase enriched with Cu-DDTC complex determine by UV-Vis Spectrophotometer at λ_{max} 435nm. The various parameters viz. type and volume of DES, amount of Complexing agent (ligand), salt effect, extraction time, and centrifugation time, etc were investigated and evaluated. Under optimal experimental conditions, analytical figures of merit had been studied as LOD, LOQ, EF and RSD. In proposed method, Cu (II) ions had been detected in μg and solvents required in μL . Hence method is environment friendly and follows green chemistry principles. The proposed method was also useful for the analysis of various real samples at trace levels. Abbreviations: Cu – Copper, DES – Deep Eutectic Solvent, DLLME – Dispersive Liquid-Liquid Microextraction. DDTC – Sodium diethyl dithiocarbamate, LOD – Limit of detection, LOQ – Limit of quantification, RSD – Relative standard deviation, EF- Enrichment Factor
Keywords: Copper, Deep eutectic solvent, dispersive liquid–liquid microextraction (DESDLLME); Sodium diethyl dithiocarbamate (DDTC), UV-Vis Spectrophotometry.

Keywords: Di-thiocarbamate, Microextraction dispersive liquid–liquid microextraction.

SYNTHESIS, CHARACTERISATION OF BIMETALLIC COMPLEXES AND STUDY OF THEIR BIOLOGICAL ACTIVITIES

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Abstract: The Present Research work involved synthesis of reagent by using of 5-amino -1, 3, 4-thiadiazole derivative and Benzimidazole. The reagent further reacted with aldehyde and ketone result to form Schiff Base. This reagent was characterised by ¹H- NMR and Mass Spectroscopy. This ligand used to couple with Cu(II) and Co(II) to form Heterobimetallic complex. This Heterobimetallic complex was characterised by using FT-IR, UV-Visible Spectroscopy. The Regent and its bimetallic complex have been screened for biological activities and both shows promising Antimicrobial Activity against *Staphylococcus aureus*, *Bacillus subtilis*, *Salmonella typhi* and *Escherichia coli*.

Keywords: Schiff base, 5-amino -1, 3, 4-thiadiazole, Benzimidazole, Antimicrobial Activity.

FABRICATION OF ANTI- CORROSION SELF-HEALING POLY(URETHANE-UREA) COATINGS BEARING DYNAMIC UREA BONDS

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Abstract: Compared to metallic materials, polymeric materials have a considerably reduced surface free energy. Additionally, they exhibit strong functional ability and a high elastic stiffness. As a result, creating polymeric coatings has caught the interest of numerous researchers. Polymeric coatings can be used for a wide range of potential applications, they can be protective (anticorrosion), useful (adhesives, photographic films), or aesthetic (paint). They are also employed to alter surfaces like in paper coatings, hydrophobic coatings. Smart polymers bearing dynamic covalent bonds exhibit dynamic properties, such as self-healing, shape memory and environmental adaptation. In this study, we aim to explore Hindered Urea Bond (HUB) chemistry to make self-healing Poly(urethane-urea) coatings that can self-heal (meld) and provide seamless corrosion protection to the metal substrate. These self-healing Poly(urethane-urea) will mend any cuts, scratches, or cracks by themselves and regain their mechanical properties, maintaining the integrity of the films and continuing to protect the metal substrate despite repeated damages. This provides mild steel and other metal substrates with maintenance-free corrosion protection.

Keywords: Self-healing materials, Hindered Urea Bond (HUB), Poly(urethane-urea) – PUU

SYNTHETIC, STRUCTURAL AND ANTIMICROBIAL STUDY OF CHIRAL MIXED LIGAND TRANSITION METAL NI(II) COMPLEXES

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Abstract: Mixed ligand complexes of the type $[M(\text{PCIINAP})(\text{aa}) \cdot 2\text{H}_2\text{O}]$, where M is Ni(II), PCIINAP is sodium salt of p-chloroisnitrosoacetophenone and aa is a chiral amino acid have been synthesized. The present metal complexes could also be synthesized from racemic amino acids by in situ stereoselective complexation. The metal complexes have been characterized by elemental analysis and various physico-chemical techniques. The bonding and structure of the complexes are discussed in detail on the basis of the results of various studies. The metal complexes have been screened for their antimicrobial activity against selected microbial strains.

Keywords: Nickel, mixed ligand complexes, antimicrobial activity.

EVALUATING EFFECT OF DIFFERENT CO-MONOMERS ON PROPERTIES OF THE STYRENE ACRYLIC EMULSION FILMS

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Abstract: Coatings may deteriorate and turn discolored after prolonged contact to ultraviolet (UV) light, particularly if they are used outdoors. Hence, despite its outstanding mechanical strength and appealing price, the use of Styrene-Acrylic Emulsion-Based Coatings is only limited to indoor coatings. In this work, Styrene-acrylic emulsion which is notorious for yellowing when exposed to UV light, is prepared by emulsion polymerization method using different type of co-monomers. Present study is focused on evaluating possible effect of length of side chain of co-monomers on properties of the styrene acrylic emulsion cast film. The main purpose of the study is to retain physical and mechanical properties of emulsion film and to retard photodegradation of coatings for prolonged time. By using UV Weather-o-meter, UV-Visible Spectrophotometer and FTIR, the performance of the coatings was evaluated. Mechanical properties of coatings such as tensile strength, % elongation at break and modulus was checked using computerized Universal Testing Machine (UTM) apart from other performance attributes such as gloss, flexibility, cross cut adhesion, contact angle. This research will combine performance with economy and make door open for styrene acrylic emulsions for use in exterior paints without compromise on the outdoor durability of coatings.

Keywords: Emulsion Polymerization, Co-monomers, UV stabilizer.

SYNTHESIS, CHARACTERIZATION AND STUDY OF BIOLOGICAL ACTIVITY OF BIMETALLIC COMPLEXES BY USING [N{3-(5-ATT) METHYL IMIDAZOLE}] AS A REAGENT

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Abstract: The present work includes the synthesis of reagent [N{3-(5-ATT) methyl imidazole}](R₁) by using 2-thione-5-Amino-1,3,4-thiadiazole, Azole and Aldehyde. Prepared reagent were characterized by IR, H¹-NMR, Mass Spectrum and Elemental analysis which have been subjected to obtained monometallic complex (ATTMI-Cu(II)) with alcoholic solution of Copper chloride. Further this prepared monometallic complex was used to prepared Schiff Base with Salicylaldehyde to obtained (ATTMI-Cu (II))-SCA (R₂) which further used for preparation of bimetallic complexes with alcoholic solution of FeCl₃ and PdCl₂. The prepared complexes were characterized by elemental analysis, UV -visible spectroscopy and FT-IR and addition to this Molar ration, magnetic susceptibility and conductivity have been measured. The antimicrobial activity of reagents and its complexes were checked against two selective micro-Organism (Staphylococcus Aureus as Gram positive) and (E-coli as Gram negative), also the minimal inhibitory concentration have been studied to determine the low concentration for inhibition. And finally, the sample have been submitted to check Anti-fungal and Anticancer activity.

Keywords: Azoles, Aldehyde, [N{3-(5-ATT) methyl imidazole}], micro-organisms, Anti-fungal and Anticancer activity.

**SYNTHESIS AND CHARACTERIZATION OF METAL COMPLEXES OF
Cu(II) AND Ag(I) WITH DERIVATIVE 5-{2-
HYDROXYPHENYL)METHYLIDENE]AMINO}-1,3,4-THIADIAZOLE-
2(3H)-THIONE] AS A REAGENT AND STUDY THEIR BIOLOGICAL
ACTIVITIES**

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Abstract: The present work was aimed to synthesize and characterize Metal complexes of Cu (II) and Ag (I). Derivative of Aldehyde condensed with Amine to form Schiff base Ligands. New metal complexes of Schiff base ligand derived from 5-{2-HYDROXYPHENYL)METHYLIDENE]AMINO}-1,3,4-THIADIAZOLE-2(3H)-THIONE] with The Metal Ions of Cu(II) and Ag(I) have been successfully prepared in Alcoholic medium. All the resulting complexes were characterized on the basis of IR, UV-VIS, ¹H NMR and Mass spectral studies. According to this Spectral data we confirmed that the structure for the new Schiff base Metal complex was successfully prepared. In addition the metal complexes possess interesting biological activities because of aldehyde is converted in to chelating schiff base Ligands contain additional donor atoms like O, S and N etc. This makes them suitable chelating Ligands to coordinate with metal ions Cu (II) and Ag (I) to form schiff base complexes, thus functional groups present in complex these metal complexes screened for anti-microbial activities. The preparation of these metal complexes are simple and attractive because of such interesting application in chemistry.

Keywords: Schiff base, metal complex, characterization, application, biological activities.

CYTOTOXICITY STUDY OF MEDICINAL PLANT - TRIUMFETTA RHOMBOIDEA

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Abstract: The present investigation was done to evaluate cytotoxicity of methanolic extract of medicinal plants, *Triumfetta Rhomboidea* on 3T3 mice fibroblast cell line. The plant samples were collected from different regions of Saphale, Maharashtra. *Triumfetta Rhomboidea* has various medicinal applications and therefore it becomes necessary to carry out the cytotoxic effects in its content. The cytotoxic activity of *Triumfetta Rhomboidea* and on 3T3 mice fibroblast cell line was evaluated by using sulforhodamine B assays. The SRB assay has been used to investigate cytotoxicity in cell based studies. The cell viability was calculated and the observed result showed that the plant extracts did not show any toxic effects till 1.0mg/ml.

Keywords: *Triumfetta Rhomboidea*, cytotoxic activity, sulforhodamine B assays

**SYNTHESIS AND CHARACTERIZATION OF NEW SCHIFF BASE
METAL COMPLEXES OF CU(II) AND AG(I) CONTAINING
DERIVATIVE OF BENZIMIDAZOLE AS A REAGENT AND STUDY
THEIR BIOLOGICAL ACTIVITIES**

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Abstract: The current work deals with the Schiff base of Cu (II), Ag (I) complexes. Schiff base are a broad class synthesized compound, which is prepared by condensation process between the primary amine groups and an aldehyde or ketone group. In this study, a series of Cu (II), Ag (I) complexes containing 1-H-benzimidazole derivatives of Schiff base ligand were successfully synthesized from ligand by using corresponding metal salt solutions in alcoholic medium. The ligand along with its metal complexes have been characterized on the basis of analytical data, FT-IR, ¹H-NMR. The mass spectra of compound confirmed the presence of all molecular ions. According to this Spectral data we confirmed that structure for the new Schiff base Metal complex was successfully prepared. In order to evaluate this ligand along with metal have been shown interesting biological activities because of the effect of metal ions upon chelation, this C₁, C₂ Schiff base metal complexes have been screened for anti-microbial and anti-bacterial activities.

Keywords: benzimidazole, metal complex, characterization, experiment, biological activities.

SYNTHESIS OXA-HELICENOID OF CONCAVE AND VAULTED

2H-PYRAN FUSED BINOLS

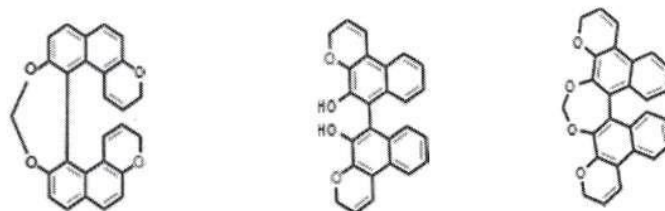
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Abstract: Synthesis of concave and vaulted *2H*-Pyran fused BINOLs and oxa-helicenoids has been achieved. Regioselective, path-breaking concerted cascade route allows the placement of six-membered aromatic as well as hetero-aromatic rings at the sterically crowded 7, 8 and 7', 8' positions of BINOL. DFT studies with relative energetic support the kinetically controlled reaction pathway proffered, matching the experimental results. The new BINOLs exhibit smaller dihedral angle than BINOL on the Diol part; this structural feature can be assisting factor for better ligation with metals in the metal-catalyzed reactions. Corresponding C_2 symmetric [5] and [7]-oxa-helicenoids have overlapping, sterically crowded geometry.

Keywords: *2H*-Pyran fused BINOL, Oxa-helicenoid, Regioselective, Concerted reaction, Kinetic reaction, DFT study.



**STRUCTURAL AND ANALYTICAL STUDIES ON 2-AMINOACETO-
PHENONE DERIVATIVES OF N'-[2-(HYDROXYIMINO)-1,2-
DIPHENYLETHYLIDENE]THIOCARBONOHYDRAZIDE**

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Abstract: In the presence of hydrochloric acid and ethanol, the proposed compound is formed by the reaction of 2-aminoacetophenone and benzilmonoximethiocarbohydrazide. The title compound is known as benzilmonoximethiocarbohydrazide-2-aminoacetophenone and is abbreviated as HBMTAAP. The synthesised compounds were characterised using various physicochemical techniques and analysed using spectral techniques such as PMR, UV, FT(IR), and so on.

Keywords: Physico-chemical techniques, 2-Aminoacetophenone
andbenzilmonoximethiocarbohydrazide

BIO-WASTE TO BIO-CATALYST: AN EFFICIENT ROUTE FOR CHEMICAL SYNTHESIS

Babita More, Anjali Patil and Hrushikesh Deokar

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Maharashtra- 401404

Abstract: To prepare new organic compounds we need to setup a reaction with various chemicals which are most of the time leads to environment pollution. Today major focus is shifted towards reducing this pollution by utilizing green chemistry applications. One such principle from green chemistry is use of catalyst and increases the atom efficiency and reduces the pollution. Catalyst can be inorganic or organic compound but in present research topic we selected bio-catalyst which is almost bio-waste from farms. Bio-catalyst proposed here are *Cystus scoparius*. Catalysts were tested for synthesis of benzimidazole and showed good catalytical activity by reducing time, increasing yield of the product with recyclability up to three runs. Obtained compounds were established on the basis of spectral technique.

Keywords: Bio-waste, Bio-catalyst, *Cystus scoparius*, benzimidazole.

TRIAZOLE SYNTHESIS USING *PEUCEDANUM GRANDE* NOVEL BIOCATALYST

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Abstract: Due to increase in environmental pollution in recent years chemist also proposes various pathways for organic synthesis to reduce pollution. To reduce the synthetic pathways pollution, researchers are reporting insitu reactions or biocatalyst. Biocatalyst is recent decades attracted focus of many researchers because of its results. Here we have reported synthetic reaction with use of biocatalyst obtained from nature and employed for synthesis. Synthesis shows good results in time, yield and quality of product. Bio-catalyst proposed here is *Peucedanum grande*. . Catalysts was tested for synthesis of triazole synthesis and showed good catalytical activity by reducing time, increasing yield of the product with recyclability up to three runs.

Keywords: Bio-catalyst, triazole, *Peucedanum grande* .

MCR USING NOVEL ENVIRONMENTALLY BENIGN BIOCATALYSIS

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Abstract: In recent times environmental pollution is major concern arising encyclopedically. In COVID epidemic situation of 2020 we peoples lock down into homes, utmost of the conditioning were stop and this was the time when smallest pollution in all fields were observed. Air quality, Water quality, swash water quality was unexpectedly developed to excellent position. To sharp fill mortal need we're running manufactories and all other possible ways, which leads to pollution. Chemicals used are one of those factors which affect the terrain. Pharma Industry is one the major sector of assiduity, which is continuously trying to develop new product for mortal health. Benzimidazole is one organic emulsion extensively used in all fields of chemical and pharma assiduity. Benzimidazole has protean operation in pharmaceutical assiduity. In current exploration design we're trying to synthesize benzimidazole motes using biocatalyst. Biocatalysts are the bones which are gain from natural coffers and they show same effect as other chemical composites. Over regular chemical advantage of biocatalyst is that they're biodegradable, cheap, fluently available and safer to use. Biocatalyst proposed then are WESC- water excerpt of *Syzygium Cumini*(White jamun).

Keywords: Green Route, bio-catalyst, benzimidazole, *Syzygium Cumini*.

DISPERSIVE LIQUID LIQUID MICRO EXTRACTION & SPECTROPHOTOMETRIC DETERMINATION OF Hg (II) USING DEEP EUTECTIC SOLVENT AS EXTRACTANT

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Abstract: Dispersive liquid-liquid microextraction (DLLME) is an efficient extraction technique. Dispersive liquid-liquid microextraction (DLLME) coupled with UV spectrophotometer . It has found wide acceptance because of several advantages, including simplicity, and ease of method development. It is a very easy, low-cost, high-recovery, simple, green, and quick method for metal extraction and preconcentration. Aqueous solution containing Hg(II) formed light pink colour complex with diphenylcarbazide. Mixture of phenol based DES as extractant and ethanol as dispersive solvent is rapidly injected into the aqueous metal solution using syringe. Dispersion is created as a result of the creation of tiny droplets of the dispersive solvent that scatter in the sample solution. Complex formation and extraction are often influenced by parameters such as pH, extraction solvent used as well as its volume, disperser solvent ,the extraction period, centrifugation, and the volume of the chelating agent.

Keywords: Dispersive liquid-liquid microextraction, DES, Phenol, Hg(II), UV spectrophotometer

ASSESSMENT OF ANTI BACTERIAL PROPERTIES OF EXTRACT OF DERRIS TRIFOLIATA A MEDICINAL PLANT

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Abstract: Derris trifoliata is referred to as a medicinal plant found in Ayurvedic, Siddha and Unani literature. The plant belongs to family Leguminosae is extensively used in Indian traditional medicines. The root is used in local medicine in India as a stimulant, antispasmodic and counter-irritant, and against rheumatism, chronic paralysis and dysmenorrhoea. A decoction of the roots is used externally against fever and internally against sores. Thai traditional doctors use roots or stems as a laxative, carminative and anti-arthritis treatment. The present study was framed out to evaluate the antibacterial activity of the different extracts of Derris trifoliata. The two Gram positive and two Gram negative bacteria were used to evaluate the antimicrobial activity of water, methanol, chloroform, n-hexane and acetonitrile extract of Derris trifoliata and has revealed that methanolic extract gave highest zone of inhibition as compared to other solvents used for the extraction. Methanolic extract was found to inhibit the growth of *S.aureus*, *B. subtilis*, *E.coli* and *S. typhi* with a diameter of 10.0 mm, 9.5 mm, 12.0 mm and 10.5 mm respectively. The present study indicates that extracts prepared from Methanol, chloroform, Acetonitrile and water possess significant anti-bacterial effect against *S.aureus*, *B. subtilis*, *E.coli* and *S. typhi*. Among them methanolic extract exhibited the highest activity than other solvents used for extraction.

Keywords: Anti-Bacterial, Gram positive and two Gram negative, Derris trifoliata.

**OPTO-ELECTROCHEMICAL AND THEORETICAL PROPERTIES OF D–A BASED
PYRIDO[2,3-*B*]PYRAZINE AMINE DERIVATIVES AS BLUE–ORANGE EMITTERS
FOR ORGANICELECTRONICS**

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Abstract: Nowadays, OLEDs have potential to be used in next generation flat/large area panel displays and to meet current economically low cost market demand of sustainable and energy efficient materials. In this work, we have design and synthesized the novel donor–acceptor (D–A) based pyrido[2,3-*b*]pyrazine amine derivatives by employing palladium catalyzed Buchwald–Hartwig coupling amination reaction and were fully characterized. The characteristic absorption spectra of dyes display intramolecular charge transfer (ICT) transitions and positive solvatochromism in emission and emit in blue–orange region in various solvents and neat solid film. The characteristic absorption spectra of dyes display intramolecular charge transfer (ICT) transitions and show positive solvatochromism in emission and emit in blue–orange region in various solvents and neat solid film. The HOMO–LUMO energy levels of synthesized compounds were measured by cyclic voltammetry and comparable to reported ambipolar molecules. Moreover, computed singlet and triplet excitation energy difference imply TADF emitting properties of compounds. On the basis of comparable HOMO and LUMO energy levels to reported ambipolar materials and efficient solid state emission warrants the application of synthesized compounds as emitter and ambipolar charge transport materials in organic electronics.

Keywords: 2,3-di(pyridin-2-yl)pyrido[2,3-*b*]pyrazine amine derivatives, Donor–Acceptor (D–A) Architecture, Intramolecular Charge Transfer (ICT) Transition, Yellow–Blue Emission, Solvatochromism, Ambipolar Materials.

SYNTHESIS, CHARACTERISATION AND BIOLOGICAL ACTIVITY 4-AMINOANTIPYRINE DERIVATIVES AND THEIR METAL COMPLEXES

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Maharashtra- 401404.

Bhaskar Waman Thakur College of Science, Yashvant Keshav Patil College of Commerce,
Vidhya Dayanand Patil College of Arts, VIVA College
Kirti M. Doongursee College of Arts, Science and Commerce, Dadar, Mumbai.

Abstract :4-aminoantipyrine is a class of pyrazolone derivative which is a non steroidal anti-inflammatory drug. The free $-NH_2$ and $-CO$ group can be used to form variety of Schiff bases with multiple donor atoms. The present work deals with the synthesis of multidentate Schiff bases by condensation of 4-aminoantipyrine, benzaldehyde and substituted hydrazide. The synthesized Schiff bases were allowed to form complexes with transition metals. The synthesized Schiff bases and their metal complexes were characterised by variety of technique and including IR, NMR, UV-Visible , Mass spectroscopy . The synthesized Schiff bases and their metal complexes show variety of biological activity including antifungal, antibacterial, antioxidant activity.

Keyword: 4-aminoantipyrine, Benzaldehyde, Hydrazide

**ANALYSIS OF WATER SAMPLE FROM PIMPURANA VILLAGE IN JAWHAR
TALUKA AND UPLAT VILLAGE IN TALASARI TALUKA**

Yogita Sunil Vale, Pravin Sadu Patkar, KaushikMestry

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Maharashtra- 401404

Abstract: Water sample were collected from Pimpurana in Jawhar taluka district Palghar and uplat village in talasari taluka district Palghar. The collected water sample were analysed for its Ca, Mg, Cl⁻, F⁻ content and tested for its pH ,conductance, acidity, alkalinity. The Ca and Mg content were determined complexometrically by using Ethylene diamine tetraacetic acid as a complexing agent. The chloride content were determined by argentometric titration. Fluoride in the water sample were determined colorimetrically. Fe content were determined spectrophotometrically by using 1,10-phenanthroline as a colour developing reagent. The acidity and alkalinity were determined by simple acid base titration.

Keywords: Water sample, spectrophotometer, colorimeter

SYNTHESIS OF CHARACTERIZATION AND CORROSION STUDY OF SCHIFF BASES DERIVED FROM BENZALDEHYDE AND P-NITROANILINE AND THEIR METAL COMPLEXES

Raju Raghunath Dhapsa and Kaushik Mestry

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Maharashtra- 401404.

Abstract: A Schiff base is a compound with the general structure $R_1R_2C=NR'$ and is considered as a subclass of imines (Imines is compound consisting of Carbon – Nitrogen double bond). Schiff base have wide variety of application in the dye industry, Catalysis, fungicidal and agrochemical . In present study we have synthesized Schiff base of benzaldehyde and p- nitroaniline. Synthesized Schiff base were used to prepare the metal complexes with transition metal. The schiff bases and their metal complexes were characterized by different spectroscopic techniques including IR, NMR etc. The synthesized Schiff base and their metal complexes were used to study corrosion inhibition activity by weight loss measurement .The Schiff bases posses the basic feature of compounds that are primarily qualified to test as corrosion inhibitors for different metal or electrolyte systems. Schiff base adsorb and form corrosion mitigating surface film through their electron rich centres including $>C=N$ moiety

Keyword: benzaldehyde , p-Nitroaniline, Schiff base

SYNTHESIS OF POLYURETHANE POLYMERS VIA THIOL-ENE CLICK CHEMISTRY: SYNTHESIS OF BIODEGRADABLE POLYOLS

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Abstract: We are driven to adopt the Green Chemistry principles as there is wariness about the availability of petroleum-based raw materials, as well as concerns about their usage such as pollution, global warming, acid rain, waste disposal, fire, and health dangers. The use of renewable feedstocks, such as vegetable oils, rather than depleting ones, is a generally acknowledged idea in the coatings industry for the synthesis of bio-based polymers. Because of its ease of implementation and high yield, the use of thiol-ene click coupling chemistry to replace petroleum-based polyols with "bio-based polyols" derived from vegetable oils, which are the most abundant and cheapest renewable organic resources available globally, is gaining popularity among polymer researchers. Using a photochemical reactor and the thiol-ene photo-click reaction, we developed a scalable technique for synthesis of different polyols from soya bean, coconut, mustered, rice bran, and sunflower oil. UV and IR spectroscopy, ^1H NMR, ^{13}C , and mass spectroscopy were used to study the structures of the resultant polyols. The polyol that was created can be used to create UV curable polyurethane coatings.

Keywords: Polyurethane, UV curable, Bio-based polyols

A FACILE AND EFFICIENT SYNTHESIS OF 2-iodoimidazo[2,1-b]thiazole derivatives by using bleaching earth clay (PH-12.5)/PEG-400 as a heterogeneous recyclable catalyst

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2. Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar-401304 Corresponding Author: mogleprashant1986@gmail.com

Abstract: The widespread desire for a cleaner, more sustainable environment is compelling chemists to employ less hazardous materials. Because of its environmentally friendly behavior, bleaching earth clay has sparked a lot of interest. The design and efficient synthesis of 2-iodoimidazo[2,1-b]thiazole derivatives were depicted in the current effort by cyclo-condensation of 5-iodinated 2-amino thiazole derivatives and substituted phenacyl bromide in the presence of bleaching earth clay pH-12.5 (basic catalyst) as a recyclable, heterogeneous and green catalyst in PEG-400. The main advantages of this methodology are catalyst recyclability, good to excellent product yield, shorter reaction speed, and avoidance of toxic reagents. The chemical structure of the newly synthesized compounds was confirmed by IR, ¹H NMR, ¹³C NMR, and Mass spectral data.

Keywords: 2-amino Thiazole, substituted phenacyl bromide, Bleaching earth clay, and PEG-400.

ARYL-FLUORENE-BASED MICROWAVE-ASSISTED SYNTHESIS OF METALLOPORPHYRIN WITH ANTIBACTERIAL ACTIVITY

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Abstract: One of the promising strategies for obtaining porphyrin molecules with desired properties and applications is the modification of synthetic porphyrins. This work report synthesis of 4-(9-(4-aminophenyl)-2,7-dibromofluoren-9-yl)benzenamine (FAN) and also the preparation of their manganese (II) and copper (II) complexes (MnP and CuP). The polymer was designed and synthesized by microwave-assisted Yamamoto coupling reaction mediated by an efficient Ni-catalyst. complexation was confirmed by using UV-Vis spectroscopy and EDS measurements, as a result of metal incorporation into the porphyrin core, the number of Q bands in the ligand's absorption spectra decreased from four to one or two. The antibacterial activity of these compounds in vitro were investigated by agar-well diffusion method against *Escherichia coli* (-), *Pseudomonas aeruginosa* (-), *Staphylococcus aureus* (+), *Bacillus subtilis* (+), obtained result showed promising inhibitory activity. Antibacterial activity of the metalloporphyrins increased with an increase of their concentrations and are better than the activity of free base ligand, the salts and blank solution. Based on Tweed's Chelation theory and Overton's notion of cell permeability, this could be explained, increased lipo-solubility improves the complexes' entry into the lipid membrane and obstructs the bacteria's regular functions. These preliminary results suggested that the remarkable antibacterial efficiency against these bacteria makes these polymers and their complexes promising antimicrobial agents.

Keywords: meso-aryl porphyrins, metalloporphyrin, microwave-assisted synthesis, Antimicrobial activity.

GREEN SYNTHESIS OF ANTICANCEROUS BIMETALLIC COPPER-CALCIUM NANOPARTICLES USING *CLITORIA TERNATEA* EXTRACT

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Abstract: Compared to monometallic nanoparticles, nanoparticles made of two distinct metal elements exhibit interesting electrical, optical, catalytic, photocatalytic or therapeutic capabilities. Bimetallic nanoparticles may exhibit unique properties as a result of the synergy between two metals in addition to the combination of attributes relating to the presence of two different metals. In this study, a simple and environmentally friendly method for synthesis of bimetallic nanoparticles (NPs) by combining copper sulphate and calcium carbonate using *Clitoria ternatea* flower extract was developed. The physicochemical properties of these NPs such as particle size, zeta potential were studied by DLS (Dynamic Light Scattering) and UV-Vis spectroscopy, Fluorescence, Fourier Transform Infra-Red (FTIR) techniques used to analyse synthesised nanoparticles. The anticancer activity of the prepared Cu/Ca bimetallic NPs was assessed against cancer cell lines based on MTT assay. As a result, the bimetallic Cu/Ca NPs exhibited remarkable toxicity on cancer cells.

Keywords: Green synthesis, Bimetallic nanoparticles, Cu/Ca NPs, *Clitoria Ternatea*, Anticancerous agents.

BIGINELLI REACTION - A GREEN PERSPECTIVE

Asmita Sawant and Hrushikesh Deokar

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Abstract: Biginelli Reaction involves acid- catalyzed, onepot synthesis of DIHYDROPYRIMIDONE (DHPMS) using material such as benzaldehyde, urea and ethyl acetoacetate in presence of green acid catalyst i.e., *Cytisus scoparius* which gives good percentage of yield. DHPMs possess a wide range of pharmacological activities. So by using green catalyst we have tried the synthesized of DHPMs using ecofriendly technologies. DHPMs possess diverse biological activities such as anticancer, antiulcer, antioxidant, antimalarial etc.

Keywords: Biginelli Reaction, DHPMS, *Cytisus scoparius*

SYNTHESIS AND CHARACTERIZATION OF HETEROBIMETALLIC COMPLEX USING REAGENTS N,N'-1,2-PHENYLENE BIS (2-HYDROXY-3-METHOXY BENZALDEHYDE) AND 1-NITROSO-2-NAPHTHOL AND STUDY THEIR BIOLOGICAL ACTIVITIES

Bhumika Sadanand Raut, SuhasJanwadkar, Chetna patil.
Sonopant Dandekar Arts, V.S.Apte Commerce and M.H.Mehta Science College, Palghar401404.
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Abstract: Present work was aim to synthesized, characterized Schiff Base Heterobimetallic complexes of Copper (II) and silver (I) and their biological activities. The schiff bases have azomethine and azo groups posses a strong ability to form complexes with transition elements. The schiff base was synthesized via condensation of o-phenylenediamine and o-vanillin in molar ratio 2:1. The Ni (II) complexe are derived from N,N'- 1,2- phenylene bis (2-hydroxy-3-methoxy benzaldehyde) and Silver (I) complex are derived from 1-Nitroso-2-Naphthol. Both complexes are coupled with each other and form Heterobimetallic complex. The complexe are characterized on the basis of IR spectra, NMR spectroscopy, and Mass studies. This complexes are act as a simple bidentate cheating ligand that coordination through their cis- Oxygen atoms to form binuclear metal complexes. The synthesized complexes are coloured, crystalline and non-electrolytic in nature. The sample of this synthesized Heterobimetallic complex is submitted to checked the antibacterial activities against E. Coli, S. Aureus, B. Subtilus and S. Typhi.

Keywords: Hetero Bimetallic Complex, Schiff Base, IR spectra, NMR spectra, Antibacterial Activities.

**SYNTHESIS AND CHARACTERIZATION OF HETEROBIMETALLIC
COMPLEXES USING A REAGENTS N,N-1,2-ETHYLENBIS (2-
HYDROXYBENZALDEHYDE) AND 1-NITROSO-2-NAPHTHOL AND
STUDY THEIR BIOLOGICAL ACTIVITIES**

Bhakti Borude, Suhas Janwadkar and Chetna patil

Sonopant Dandekar Arts, V.S.Apte Commerce and M.H.Mehta Science College, Palghar401404

Abstract: Present research describes the synthesis of Schiff base heterobimetallic complexes of nickel(II) and silver(I) and study their spectral characteristics. The Schiff base was synthesized via condensation of Salicylaldehyde and Ethylene Diamine in molar ratio 2:1. Yellow-coloured solid of N,N-1,2-ethylenbis(2-hydroxybenzaldehyde) is obtained as reagent. The characterization of the synthesized reagent was done with NMR and IR. The complexes obtained are yellow-colored and stable. Schiff base has azomethine and azo groups and posses a strong ability to form complexes with transition metals. Another complex was synthesized by coupling 1-Nitroso-2-Naphthol with Ag(I) Sol. Both monometallic complexes are coupled to form Heterobimetallic complex.

Keywords: Salicylaldehyde, Heterobimetallic

CHEMISTRY NOBEL LAUREATES



Ben Feringa



Fraser Stoddart



Jean-Pierre Sauvage



Jacques Dubochet



Joachim Frank



Richard Henderson



Frances Arnold



George Smith



Gregory Winter



Akira Yoshino



John B. Goodenough



Stanley Whittingham



Emmanuelle Charpentier



Jennifer Doudna



Benjamin List



David MacMillan



Barry Sharpless



Carolyn Bertozzi



Morten Meldal

ICSSR REPORT

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH

Application for Special Call for Short-term Empirical Research 2023-24

Curriculum Vitae



Title of the Research Proposal : "Promoting Inclusive Growth through Pradhan Mantri Kaushal Vikas Yojana (PMKVY): A Comparative Case Study of Skill Training Initiatives in Rural and Urban Contexts of Mumbai and Mumbai suburban Region"

You are: : Co-Project Director

I. Personnel Details :

1. Name : Dr. Manish Madhav Deshmukh

2. a. Address for Communication : 6, Mahikawati, Lokmanya Nagar, Kacheri Road, Palghar 401404

b. State : Maharashtra

c. Mobile No. : 9822426815, 7020205325

d. Email ID : manishdesh@yahoo.com

3. Employment Details

Employer's details :

Name : Sonopant Dandekar Arts, V. S. Apte Commerce & M.H.Mehta Science College, Palghar

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Website : <https://sdsmcollege.in>

II. Educational Qualifications				
<i>Name of Degree</i>	<i>Name of the University</i>	<i>Year of Passing</i>	<i>% of marks</i>	<i>Main Discipline</i>
Master's - M.B.A.	University of Pune	1999	66%	Marketing Management
Master's - M.COM.	University of Pune	2001	66%	Business Administration
M. Phil.	Madurai Kamaraj University	2008	52%	Commerce
Ph. D.	University of Pune	2009	Awarded	Co-operation & Rural Development
Post-Doctoral	-	-	-	-

I. Research Output

a. Experience

	Number	Brief Detail (Title and supporting Institution)
Projects Completed (Maximum 5)	01	
Ongoing projects, if any (with completion date)	-	-
Fellowships	-	-
Ph.D. Guidance	02	Two students Completed Ph.D. Under my Guidance 1) Chandge Rohini Ramesh Date: 11/06/2014 2) Nilima Singh Date: 06/02/2019
M.Phil. Guidance	-	-

b. Participation in Research Projects (also mention under which capacity)

1	UGC Sponsored Minor Research Project: “A study of Present situation of the By-Products and Subsidiary industries of Selected Sugar Factories in Ahmednagar District Author: Prof. Patare Pralhad Ranganath, Researcher Capacity: Dr. Manish Deshmukh, Co-Researcher
2	

c. Papers in Journals / Edited Books / Reports Published/Citations, etc. (Details of the best 5 to 10)

<i>S. No.</i>	<i>Title of the Article</i>	<i>Name of the Journal, Place of Publication and Frequency</i>	<i>Month, Year and Volume of Publication with Page Nos.</i>	<i>Is the Journal Scopus Indexed / UGC CARE listed? (Yes/No)</i>
1.	A vision of Skill India Initiative which overlooks the child Labour: The Nation’s Future & Tomorrow’s Citizens	Phalanx-A Quarterly Review for Continuing Debate	Vol- 18, No. 1 (January-March) 2023 ISSN : 2320-7698 Peer Reviewed Referred UGC care Listed Journal Impact factor 5.6 Page no. 185-197	YES
2.	Demystifying Women Shopping Behavior Pre and Post COVID 19 in Palghar	Madhya Bharati-Humanities and Social Sciences	Vol. 83, January -June 2023 ISSN: 0974-0066 Peer Reviewed Refereed UGC Care Listed Journal Impact factor 6.4	YES
3.	Gandhian Philosophy of Trusteeship in Past & Present Context	Studies in Indian Place Names	Special issues 29th February 2020 2394-3114 wit 6.3 (RF) Page No. 25-29	YES
4.	“Sustainable Marketing Practices In Selected Industries ”	Journal “International Journal for Research in Engineering Application & Management (IJREAM)”,	15 th March 2019 (E-ISSN: 2454-9150) with an impact factor of 5.836. Page No 92-96	YES
5.	‘Co-operative Sugar Industries Socio-	‘Cooperative and Rural Development	December 2018:	

	Economic Booster for African countries.		ISBN: 978-93-85930-25-6.	
6.	'Let's Break the Stress before it Breaks us'	An International Multidisciplinary Half Yearly Research Journal GENUS	February-July 2018, Vol-VI, Issue – II, Part – I, ISSN-2279-0489, Impact Factor-4.954, UGC Approved List Sr. No. 47100, Page No. 25-32..	YES
7.	Women Entrepreneurship Greater Role in Making India	Human Concerns and Issues in Commerce	April 2017 First Published Book II ISBN: 978-93-83871-72-8	
8.	Constitutional and Legislative Provisions for Empowerment of Indian Women Entrepreneurs	Management Guru: Journal of Management Research	March 2017 Vol. V Issue No. 02 ISSN: 2319-2429 Page No. 540 -546	YES
9.	The Essence and Power of Entrepreneurship	The Explorer – A Multidisciplinary Journal of Research	February 2017 Vol. 02, Sppl. Issue 1 Online ISSN: 2456-0995 Page No 15-20	YES
10.	The Green Wave Sweeping in India – Green Marketing “A Case Study on ECO Board Industries Ltd. Velapur”	“Emerging issues in Commerce, Management, Finance, Humanities & Extension Work”	February 2017 International Conference Proceedings ISBN: 978-81-933083 -7-0 Page No. 362-369	

d. Any other important academic achievement (approx. 100 words)

- Academically, I have **authored 6 books (4 for Undergraduate courses and 2 for MMS)** i.e., Strategic Management, Business Relationship Management, Marketing Management, Human Resource Management, and Research Methodology for the Institute of Distance and Open Learning, University of Mumbai.
- **Two Students got Ph.D. Degree** under my supervision.
- I am a member of the **Executive Organizing Committee** for the **Global Sustainable Summit: GSS-23** organized by the **Indian Institute of Sustainable Development (IISD) and its initiative Carbon Minus India (CMI), New Delhi** in Vigyan Bhawan, New Delhi.
- He is a **Member of the School Council**, Faculty of Commerce and Management, Yeshwantrao Chavan Maharashtra Open University, Nashik and
- A member of the **Board of Studies in Commerce and Management of New Arts, Commerce and Science College, Ahmednagar (Autonomous).**

- An **Expert Faculty** of IDEMI, Government of India organization Ministry of MSME and Maharashtra Centre for Entrepreneurship Development (MCED), Nashik Ahmednagar, Satara, Raigad, Thane, Mumbai (Urban) and Palghar.
- **Worked as Expert Mentor, District Coordinator & Judge** for the Inter-Collegiate/Institute / Department Avishkar Research Convention organized by the Department of Students' Development, University of Mumbai,
- **Chief Editor for 'Spandan'** Annual Magazine of Sonopant Dandekar College Palghar since 2018 till date, Spandan got an award of **Best Annual Magazine** at University level and also at State Level by Yeshwantrao Chavan Pratisthan.
- I have more than 22 publications in various International and National Journals of eminence.
- Currently creating a stance as Head, Department of Commerce and Member of various committees.
- **Expert & Mentor** for **15th State Level Aavishkar- Research Convention**, Maharashtra and outstanding track record of holistic development of students is

Declaration

I hereby declare that:

1. I am not a defaulter of any previous ICSSR grant.
2. I have neither been subjected to any disciplinary action nor found guilty of any offence in my career.
3. I have not concealed any information in my application. If ICSSR finds any contrary information at any stage, it may cancel the study out rightly and/or impose any penalty as it deems fit.

Place: Palghar

Date: 10/07/2023

Dr. Manish Madhav Deshmukh
Assistant Professor and Head
Department of Commerce

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH

Research Proposal for Major/Minor Research Projects (2023-24)

Application Number (To be noted down from the online application)	ICSSR-RMM-2023-2442
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Applying Under (Put tick mark)			
Major Project Proposals with budget up to Rs.25 lakhs		Minor Project Proposals with budget up to Rs.10 lakhs	√

Broad research discipline as per ICSSR list (Refer Clause 1.1 of guidelines)	Education
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1	Name of Project Director	Mr Manish Madhav Deshmukh
2	Title of the Research Proposal	Investigating the Synergy of Multimodal Pedagogy in Higher Education: Theoretical Alignment, Policy Influence, and Educational Practices
3	Abstract (approx. 300 words)	<p>The National Education Policy (NEP) 2020 envisions a future where young minds are equipped with education and imagination to create. This forward-looking policy calls for a paradigm shift in education, moving from traditional pen-and-paper approaches to embracing technology and fostering multidirectional learning. The integration of NEP's vision with a multimodal pedagogy, which employs diverse forms of communication and representation, is poised to revolutionize higher education in India.</p> <p>Traditional assessment methods, characterized by high-pressure exams and written essays, often leave students feeling disconnected and struggling to effectively communicate, analyze, and generate knowledge. Multimodal pedagogy offers an innovative solution by promoting collaborative efforts, critical examination of content, and creativity. It transcends the boundaries of solitary learning, allowing students to engage with their</p>

		<p>disciplines in imaginative and creative ways. This approach embodies four essential principles: criticality, creativity, holism, and valuing multimodality. By embracing this approach, classrooms can become more inclusive, recognizing the diversity of learners' identities, languages, and discourses, ultimately fostering equity in education.</p> <p>Our research aims to investigate the alignment of multimodal pedagogy with existing educational theories, the role of educational policies, the attitudes of educators and administrators, and the impact on learner engagement and curriculum outcomes. This study addresses a research gap in higher education, focusing on the unique challenges of implementing multimodal pedagogy in various disciplines and understanding its influence on learning outcomes.</p> <p>The study targets educators, administrators, and students in undergraduate colleges affiliated with the University of Mumbai. The research outcome holds the promise of promoting a transformative education landscape in India, aligning with NEP 2020's vision and the demands of the digital era. Through the establishment of Multimodal Open Learning Labs and the development of a Scaling Toolkit, this research offers a practical pathway for institutions to implement multimodal pedagogy effectively.</p>
<p>4</p>	<p>Introduction of the Proposed Study (approx. 400 words)</p>	<p>The National Education Policy (NEP) 2020 has significant implications for higher education in India. With a vision that "The future belongs to young people with an education and the imagination to create." When looked from the lens of NEP it is the power of imagination that lays its foundation by infusing a unique experiential process that can be achieved by a creative team of experts who can write the curriculum with the cross-curricular concepts. Policy framework coupled with shift from pen and paper to technology calls for reconsideration in the contemporary education ecosystem of teacher–student</p>

		<p>relationship to facilitator and learner framework where the thought process flows from all directions i.e., multidirectional.</p> <p>This changing landscape screech for creation and assessment in multimodal formats however in higher education ecosystem, the conventional methods of evaluating student learning in various fields have typically involved written essays and oral presentations, often conducted under high-pressure exam conditions. This approach can sometimes lead to students feeling disconnected or struggling to effectively communicate, analyze, and generate knowledge within the university environment. It also presents difficulties for educators in terms of how they assess student learning both during the learning process and at the end of a course. Multimodal texts, on the other hand, frequently involve collaborative efforts and can encourage students to critically examine the aspects of place and mobility within their content, representation, and target audience. Going beyond the traditional solitary reader or viewer, these types of texts provide students with authentic opportunities to interact with the subject matter of their discipline in innovative, creative, and imaginative ways. It thus envisages within itself the four principles: (a) criticality, (b) cultivating creativity, (c) holism and (d) valuing multimodality. Thus utilizing a multimodal approach in education holds the promise of fostering greater inclusivity and democracy within classrooms by ensuring that the identities, languages, and discourses of learners are acknowledged and brought to the forefront. This approach to teaching and learning can play a vital role in promoting equity by expanding the scope of representation.</p> <p>The present research intends to investigate the multimodal pedagogy with the current educational theories and National Education Policy 2020 and how it can be integrated into curriculum design and policy in the higher education landscape through apt pedagogy.</p>
<p>5</p>	<p>Major Research Works Reviewed: 1) International and</p>	<p>International Studies</p>

<p>2) National.</p> <p>Not less than 15 to 20 important works (approx. 600 words)</p>	<p>A study by New London Group (1996)., on “A Pedagogy of Multiliteracies: Designing Social Futures. foundational work introduced the concept of multiliteracies and discussed its application in the U.S. education system. It emphasized the importance of recognizing and incorporating various modes of communication to address the needs of diverse student populations. Kress, G., & Pachler, N. (2007), in their research paper “Thinking about the 'm' in m-learning” explored how mobile learning (m-learning) can be integrated into U.S. classrooms, emphasizing the use of multimedia and multimodal resources in education. Shifting from student-centric to teacher-centric wherein awareness and importance of multimodal texts need to be first reviewed, Mills, K. A., & Comber, B. (2014) in his research work titled, “Multimodality and Digital Literacies: How Teachers Use Multimodal Texts to Promote Literacy Learning,” examines the Australian education context, highlighting how teachers use multimodal texts and digital literacies to enhance literacy education. Walsh, M. (2011) in his work Multimodal literacy: What does it mean for classroom practice? discusses the Australian Curriculum and its emphasis on multimodal literacy, offering practical insights for educators. Archibald, J. (2008), “Multimodal Literacy: What is it and how can we use it?” this paper discusses how Canadian educators are integrating multimodal literacy in the classroom and the potential benefits for student engagement and learning. Jewitt, C., & Kress, G. (2003) a UK-based researcher in his policy paper titled “Multimodal Literacy” discusses how multimodal literacy can be integrated into the UK education system, emphasizing the changing nature of literacy in the digital age. Bachmair B. (2009) in his book ‘Media Literacies: A Critical Introduction’ discusses media literacy and multimodal pedagogy in the context of German and European education. It explores how these approaches can empower students to critically engage with various media.</p> <p>An edited volume Schwartz, M., & Wise, M. (2018) “ Multimodal Approaches to Research and Pedagogy: Recognition, Resources, and Access” covers diverse international perspectives on multimodal pedagogy in</p>
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		<p>research and practice. It includes case studies and examples from various countries, showcasing the global impact of this approach.</p> <p>National Studies</p> <p>In India, the perception of the usage of multimodal texts gained importance post-2015 especially post-pandemic. An exploratory study on the effectiveness of multimodal pedagogy in teaching writing skills to engineering students in India was conducted by Panchal, J., & Desai, S. (2020). The study investigates the effectiveness of multimodal pedagogy in teaching writing skills to engineering students. It provides insights into how this approach can be applied to enhance communication skills in technical education. Rajam, M. R., & Thilagavathy, D. (2019), "Multimodal Pedagogies in Indian English Classrooms" this paper discusses the application of multimodal pedagogies in Indian English classrooms. It examines the use of visual and digital elements to enhance English language teaching and learning. Gurumurthy, A., & Choudary, K. K. (2017), in his paper "Reimagining the English Language Classroom: A Multimodal Pedagogical Approach" discusses the transformation of English language classrooms in India using a multimodal pedagogical approach. It explores the integration of technology and visual elements to enhance language learning. Further Sharma, R., & Kumar, R. (2018) in his work, "Multimodal Learning: An Innovative Way of Learning for Generation Y". focuses on how multimodal learning can cater to the learning preferences of the "Generation Y" cohort in India. It emphasizes the importance of engaging students through various modes of communication.</p> <p>These works collectively demonstrate the widespread adoption of multimodal pedagogy across different countries and education systems. They emphasize its potential to improve student engagement, critical thinking, and digital literacy skills, making it a valuable approach for educators worldwide.</p>
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<p>6</p>	<p>Identification of Research Gap (approx. 300 words)</p>	<p>A gap analysis of multimodal research studies in India, specifically in the context of higher education, reveals several areas where further investigation and research are needed:</p> <p>Most of the existing research on multimodal pedagogy in India is focused on K-12 education. There is a notable lack of comprehensive studies that specifically address the unique challenges and opportunities of implementing multimodal pedagogy in higher education institutions. While many studies focus on language and literacy, there is a research gap in the application of multimodal pedagogy in various disciplines, such as science, mathematics, commerce, or social studies. Investigating how these approaches can be adapted for different subjects is essential. Further assessing importance in terms of influences of multimodal pedagogy on student learning outcomes, including academic performance, critical thinking skills, and digital literacy. Such studies could provide empirical evidence of the effectiveness of these approaches and help in improved policymaking. While some studies touch on how teachers use multimodal pedagogy, further research is needed to explore the challenges and opportunities teachers face while implementing these approaches. Investigating the role of teacher preparation and professional development in this context would be valuable. The studies pertaining to understanding the perspectives, attitudes, and competence among teachers are sleek. Further, most of the studies are descriptive in nature.</p> <p>The present study seeks to fill this research gap through its SMART objectives designed to include both qualitative and quantitative aspects of the implementation of multimodal pedagogy with an aim to provide a holistic approach.</p>

<p>7</p>	<p>Objectives of the Proposed Study (approx. 200 words)</p>	<p>Research Objectives</p> <ol style="list-style-type: none"> 1. To explore the alignment between multimodal pedagogy and existing educational theories and models. 2. To comprehend the role of educational policy in facilitating the integration of multimodal pedagogy in higher education. 3. To evaluate the perceptions, attitudes and existing behaviour of educators and administrators towards alignment of multimodal pedagogy into curriculum design and delivery. 4. To investigate the influence of multimodal pedagogy on learner engagement and curriculum outcome. 5. To identify best practices for integrating multimodal pedagogy into curriculum design.
<p>8</p>	<p>Major Research Questions / Hypotheses (approx. 200 words)</p>	<p>Research Hypotheses</p> <p>H₁: There is a significant alignment between multimodal pedagogy and established educational theories and models.</p> <p>H₂: Educational policies have a significant impact on the integration of multimodal pedagogy in higher education.</p> <p>H₃: The perceptions and attitudes of educators and administrators significantly influence the alignment of multimodal pedagogy into curriculum design and delivery.</p> <p>H₄: Multimodal pedagogy positively influences learner engagement and improves curriculum outcomes.</p>
<p>9</p>	<p>Proposed methodology for the research work (approx. 400 words)</p>	<p>A Mixed-Methods Sequential Exploratory Design is used to holistically explore and understand complex research questions or phenomena by first gathering qualitative insights and then conducting quantitative analysis. It is tailored to the specific needs of the research problem and provide richer, more nuanced findings than using either method in isolation.</p>

		<p>In order to understand the present landscape amongst the higher education educators, analytical review and synthesis of empirical research on evolution and challenges in embracing multimodal teaching pedagogy is to be conducted. The study follows Clark and Creswell’s (2010) definition of literature review study. In order to conduct systematic search an inclusive criteria was determined. The following inclusive criteria was applied: (1) National/ International reports on multimodal pedagogy and its contexts, (2) peer reviewed studies (3) studies published during the period 2013- 2023 only. Further Boolean search was applied. The study is aimed to identify the evolution of multimodal theoretical frameworks in terms of learner engagement. The themes would be drawn and coded.</p> <p>Mapping of Hypothesis with Research Analysis tool:</p> <table border="1" data-bbox="678 824 1377 1503"> <thead> <tr> <th data-bbox="678 824 935 913">Research Hypothesis</th> <th data-bbox="935 824 1377 913">Research Design</th> </tr> </thead> <tbody> <tr> <td data-bbox="678 913 935 1503"> <p>H₁: There is a significant alignment between multimodal pedagogy and established educational theories and models.</p> </td> <td data-bbox="935 913 1377 1503"> <ol style="list-style-type: none"> 1. Comparative Analysis of key principles of multimodal pedagogy and educational theories and models 2. Content Analysis: The content of educational materials to be studied and identify instances where it is implemented and correlation with theories and policies. </td> </tr> </tbody> </table>	Research Hypothesis	Research Design	<p>H₁: There is a significant alignment between multimodal pedagogy and established educational theories and models.</p>	<ol style="list-style-type: none"> 1. Comparative Analysis of key principles of multimodal pedagogy and educational theories and models 2. Content Analysis: The content of educational materials to be studied and identify instances where it is implemented and correlation with theories and policies.
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		<p>H₂: Educational policies have a significant impact on the integration of multimodal pedagogy in higher education.</p> <p>H₃: The perceptions and attitudes of educators and administrators significantly influence the alignment of multimodal pedagogy into curriculum design and delivery.</p>	<ol style="list-style-type: none"> 1. Case studies: Study and analyse case studies of institutions that have successfully implemented multimodal pedagogy 2. Interviews: Administer surveys and conduct interviews to collect data on educators' and administrators' perceptions and attitudes regarding multimodal pedagogy. Correlate this data with the extent to which multimodal pedagogy is integrated into the curriculum using statistical analysis (e.g., correlation analysis).
		<p>H₄: Multimodal pedagogy positively influences learner engagement and improves curriculum outcomes.</p>	<ol style="list-style-type: none"> 1. Experiments/ Case Studies: Implement multimodal pedagogy in selected courses and measure learner engagement using surveys and curriculum outcomes using assessments. The data will be compared to the courses without multimodal pedagogy using statistical analysis (e.g., t-tests) to

			<p>determine if there is a significant difference.</p>
			<p>10 Sample size for the research Study <i>(The indicative sample size for each individual study would be 400 to 500.)</i></p> <p>Sampling Method: The research will employ a stratified random sampling method to ensure representation from different groups of interest within the target population. This method will help obtain diverse perspectives from educators, administrators, and students in undergraduate colleges affiliated with the University of Mumbai.</p> <p>Sampling Characteristics:</p> <p>Educators: The sample will include a diverse group of educators with varying levels of experience and expertise. Stratification may include categorizing them by years of teaching experience, subject areas, and types of institutions (e.g., urban, rural).</p> <p>Administrators: The sample of administrators will encompass individuals holding various positions, such as deans, department heads, and curriculum coordinators. They may also be stratified based on their roles and years of administrative experience.</p> <p>Students: Students will be stratified based on their academic faculties (e.g., Arts, Commerce, Science) and year of study (e.g., first-year, second-year). This will allow for a comprehensive understanding of how multimodal pedagogy affects learners at different stages of their undergraduate education.</p>

		<p>Sampling Size:</p> <p>The sample size for each group may vary, but to ensure the study's reliability and representativeness, a reasonable sample size would be as follows:</p> <p>Educators: 100 educators are to be included in the study. This size will provide diverse insights into the perceptions and attitudes of educators from various backgrounds.</p> <p>Administrators: A sample size of 20 administrators would provide substantial data regarding the role of administrators in aligning multimodal pedagogy with the curriculum.</p> <p>Students: To ensure a robust dataset, around 600 students would be included in the study, with 200 students from each academic faculty (Arts, Commerce, Science) in undergraduate colleges affiliated with the University of Mumbai.</p>
11	State(s) / Region(s) covered by the study, if applicable	<p>State: Maharashtra</p> <p>Region: Konkan Division</p>
12	Innovation/path-breaking aspects of the Proposed Research (150 to 200 words)	<p>This innovative pathway emphasizes the collaborative nature of the study, its alignment with NEP 2020, the promotion of digital literacy and equity, and its potential to foster creative, critical thinking among students. By weaving these elements together, the proposed study can contribute to the transformation of higher education in India and address the challenges posed by the digital age and evolving job market demands. The study proposes to setting up of Multimodal Open Learning Labs that serve as pilot</p>

		<p>programs to test the effectiveness of multimodal pedagogy in different academic disciplines. Data will be collected on learner engagement, curriculum outcomes, and teacher and student feedback. Further it is capable of developing a Scaling Toolkit that provides guidance to other higher education institutions looking to adopt multimodal pedagogy. The toolkit would include resources, templates, and case studies for easy replication.</p>
13	<p>Expected Output such as books, policy papers, documents, datasets etc. with proposed timeline (300 words)</p>	<ul style="list-style-type: none"> ● Academic papers/ publications under CCBYSA license. ● Educational Materials in form of guides/ case studies to help implementation of multimodal pedagogy ● Workshops and Seminars to ensure wider dissemination. ● Policy Papers and help institute re define their quality mandate <p>By disseminating the research outcomes through these channels, one can contribute to the broader conversation about enhancing higher education through multimodal pedagogy and promote more inclusive and effective teaching practices.</p>
14	<p>Details of data sets to be generated (100-150 words)</p>	<p>Data sets to be generated would be</p> <ol style="list-style-type: none"> 1. Policies and alignment of multimodal pedagogy in paper and in practice 2. Focus areas where multimodal pedagogy is implemented or can be implemented 3. Awareness level and Perception towards multimodal pedagogy amongst stakeholders of higher education institutes. 4. Data related to curriculum outcomes, including assessments and student performance, in courses with and without multimodal pedagogy. Use statistical analysis to compare the data. 5. Data on learner engagement by implementing multimodal pedagogy in selected courses and

		gathering surveys and other engagement-related data.
15	Relevance of the proposed study for policy making (approx. 200 words)	<p>The research study is carved with its foundation in National Education Policy 2020 that is already implemented at post graduate level and expected to be implemented at under graduate level from the academic year 2024-25 in most of the states across the country. As the study aims to investigate the alignment of multimodal pedagogy with existing educational theories, the impact of educational policies, and the attitudes of educators and administrators it can provide strong evidence for the integration of multimodal teaching methods in higher education. Policy makers can use this information to encourage institutions to adopt and promote multimodal pedagogy as a valid and effective educational approach.</p> <p>The data sets so generated will help to comprehend the gaps in existing policy and findings would contribute towards upgradation of existing policies or create new ones. Policy makers can use this information to develop training programs and incentives for educators to equip them with the necessary skills and mindset to implement multimodal teaching methods effectively. Policy makers can leverage this information to develop policies that promote inclusive and equitable educational environments, ensuring that all students have access to effective learning methods and are represented in the curriculum.</p>
16	Relevance of the proposed study for society (approx. 200 words)	<p>With the Industrial Revolution 4.0, the transformation from a global world to digitally mediated global citizenship is complex and multifaceted. This revolution has resulted in profound changes in the way people live, interact and carry on business, permeating the new world of tech-based lifestyles. This business tech world doesn't demand graduates who are skilled in pen-paper framework but multitaskers and innovators in every aspect of their work profiles. The crashing pace of these changes, demands niche groups and not mass</p>

		workers calling out for sea changes in the education landscape to suit the needs of digital naive as income earners and income givers. Multimodal pedagogy, which involves the use of multiple modes of communication and representation in teaching and learning, that are capable of addressing these challenges of digital divide, disparities in opportunities, transition from a factory-led production model to a more diverse and knowledge-based economy. As India continues to develop its digital infrastructure, multimodal pedagogy can help students become more digitally literate and proficient. Further it involves collaborative and project-based learning, which can foster critical thinking, problem-solving skills, and creativity among students. These skills have assumed greater vitality in the changing market scenario and job demands.
17	Milestones set for	6 months: Completion of Pilot Study and Commencement of Actual Field work in 5 colleges 9 month: Preparation of Toolkit 12 month- Submission of Report
18	Total Grant expected for this study (in Rs.)	Rs 10,00,000/-

19. Proposed budget of the study under expenditure heads with justification

Heads of Expenditure	Number	Months	Rate	Amount
1. Research Staff				
(a) Research Associate	01	10	47,000	4,70,000
(b) Research Assistant	NIL			NIL

(c) Field Investigator	02	6	20,000	2,40,000
2. Field work				1,00,000
3. Workshop to disseminate the outcomes of the project	20		4000	80,000
3. Equipment and study material				60,000
4. Contingency				47,500
Total				9,97,500
Affiliating Institutional overheads (over and above the total cost @ 7.5 % of the approved budget, subject to a maximum upper limit of Rs. 1,00,000/-)				74,800

20. Justification of different heads of budget (write in 30 words each)

1. Research Staff : As the expanse of the research is diverse in terms of academics and geographical reach, the need to engage staff is imperative.
2. Field work: The study involves both qualitative and quantitative aspects, that requires frequent visits and stay in the institutes. Further since Konkan division is covered expenditure would be high.
3. Equipment and study material : In order to create a toolkit and Lab equipment's for recording/ access to subscriptions would be mandated.