3.2.1. Institute has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge (Patents filed, published, incubation center facilities in the HEI to be considered)

The institute established Institute Innovation Cell/Training & Placement to encourage, inspire the students and faculties by supporting them to work with new ideas and innovations. Institute organized various activities on IPR, Patent filing under this cell.

- The Common Project laboratory was established to conduct the research by faculty and students.
- Institute signed a number of MOU with industries and organizations under this cell.
- This cell provides a platform to share and discuss the latest development and applications with practical exposure & assist the faculty members and students for the patent filing process.
- Institute has developed various policies to promote patent filing, to encourage research and publications.
- Institute provides financial support to faculties and students for patent filing and peer publications.
- Institute has also a policy to help students Projects and to enrich the library with respect to purchasing new reputed journals.
- Institute has also organized an International conference in Malaysia and India, Maharashtra, in the year 2017. This conference was attended by nearly 117 faculties and financial support was also given to these faculties. Such initiatives of the institutes creates an ecosystem for innovation and research. During the last five years the institute has organized a total 03 number of conferences.

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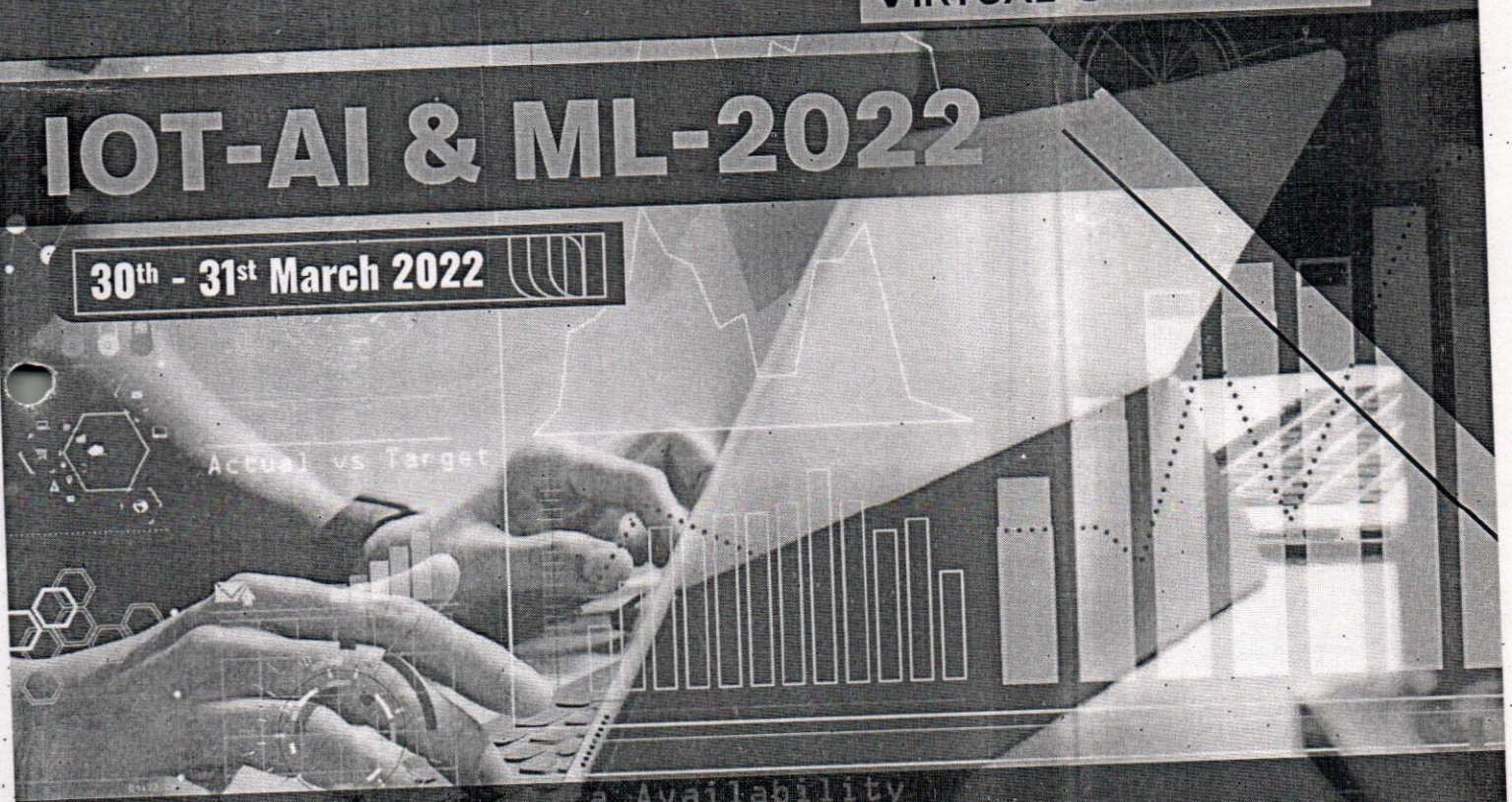

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Acknowledgement

IFERP is hosting the **1st International Conference on IOT-AI & ML in Information Technology (IOT-AI & ML-2022)** this year in month of March. The main objective of ICAESM-2021 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points, and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader.

I express my hearty gratitude to all my Colleagues, staffs, Professors, reviewers and members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.

Er. R. B. Satpathy
Chief Executive Officer
Institute for Engineering Research and Publication (IFERP)

Keynote Speaker

Fredrik Hofflander
Head of AI at AFRY
Chair of the Technical board at AI Center
Sweden

Message

It is a great honor to be part of the very noticeable group of keynote speakers at the 1st International Conference on IOT-AI & ML in Information Technology (AI&ML-22). I am very thankful to the Institute for Engineering Research and Publication (IFERP) has recognized and invite me to this event.

One of our big fateful questions is how we can stop global warming. It is a global problem that requires a global solution and for all countries in the world to come together and cooperate. No one can do everything, but everyone can do something.

The solution will be a mix of technical development, political influence, and changed behavior. What I have intended to tell you about is based on all these three parts and points out how we with the help of technological development can reduce our climate impact, get an improved experience while we also change our behavior completely voluntarily.

Thanks and Regards,

Fredrik Hofflander

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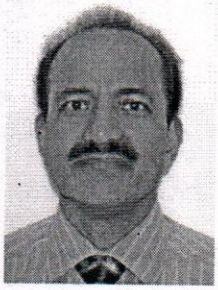
Keynote Speaker



Dr. Raziq Yaqub
Associate Professor
Electrical Engineering and Computer Science
Alabama A&M University, Huntsville, Alabama

Message

I feel honored to be invited as a keynote speaker at the 1st International Conference on IOT-AI & ML in Information Technology(AIML-22). I express my sincere appreciation to the Institute for Engineering Research and Publication (IFERP) for taking concrete steps in organizing intellectual activities leading to disseminating the knowledge. It is an excellent service to the nation and the entire world, for which the organizers, committees, and facilitators deserve congratulations.

Though Covid-19 was a pandemic on the one hand, on the other hand, it took the culture of webinars to the next step that vanished the barriers among researchers and scientists around the globe to join and present their findings to their peers. Though virtual, I am confident that this international conference will bring several critical issues to the table and discuss their possible solutions. I sincerely believe that the conference will provide networking opportunities and a platform for students, professors, researchers, and decision-makers to establish collaborations and promote Research and Innovation in Science, Technology, and Management.

Finally, I want to extend my sincere gratitude to IFERP, the conference organizer, and all those behind the stage for making this remarkable event a great success. I am also thankful for making me part of this reputed event. I feel honored to offer my support for collaborative research, cross-institutional online teaching, and joint services to the institutions.

I wish all presenters and participants good luck having a fruitful and enjoyable conference.

(Raziq Yaqub)

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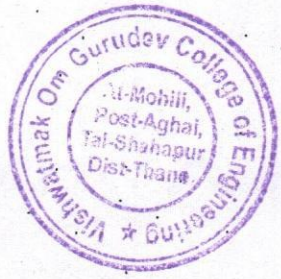

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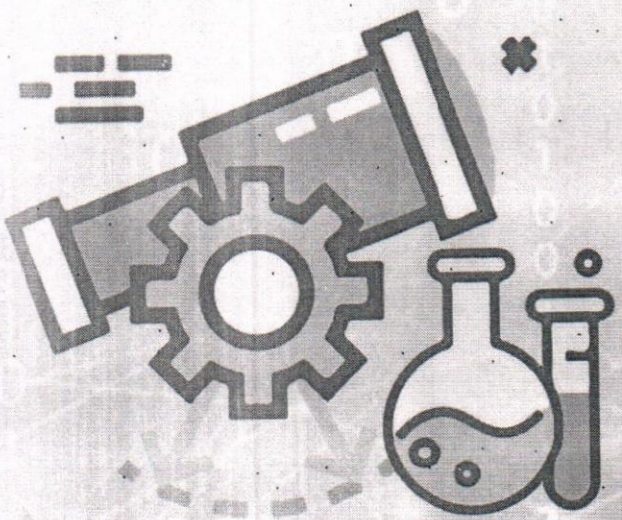

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Editorial

We cordially invite you to attend the **International Conference on Physical Science and Technology (ICPST -22)** on 21st–22nd May 2022.The main objective of **ICPST -22** is to provide a platform for researchers, students, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Applied Sciences, Engineering, Technology and Management. This conference will provide opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relationship and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on cutting edge development of academia as well as industries. All accepted papers were subjected to strict peer-reviewing by a panel of expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results but also will provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities, research institutes and colleges. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in there view process, and to the authors for contributing their research result to the conference.

Since March 2022, the Organizing Committees have received more than 280 manuscript papers, and the papers cover all the aspects in Applied Sciences, Engineering, Technology and Management. Finally, after review, about 193 papers were included to the proceedings of **ICPST -22.**

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of **ICPST -22** We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions made this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard work.

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IFERP is hosting the **International Conference on Physical Science and Technology - 2022** this year in the month of May. The main objective of Physical Science and Technology is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The session will serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and be known as a thoughtful leader.

I express my gratitude to all my colleagues, staffs, professors, reviewers and members of organizing committee for their hearty and dedicated support to make this conference successful.

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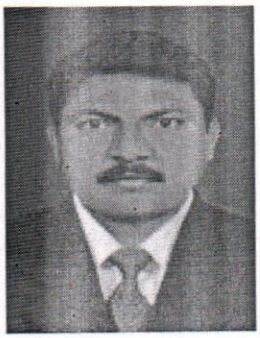

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•Bachelor of communication and Journalism (BCJ) from SDLCE Kakatiya University, Warangal, Telangana

Research Interests:

Environmental Engineering, Energy, Advanced Separation processes, Modeling, Simulation and Optimization, Biochemical Engineering, Waste water treatment, Membrane separations, Reactive distillation, Inverse fluidization, Pharmaceuticals and nanotechnology.

Teaching & Research Experience:

Twenty two years of experience in teaching different Chemical Engineering courses and Research since 26.02.1999 to till date at the Department of Chemical Engineering, National Institute of Technology (Formerly Regional Engineering College) Warangal, TS, India

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International Conference on Physical Science and Technology
ICPST - 2022
Keynote Speaker

Mr. Dhananjay Singh
Vice President-Engineering
eGovernments Foundation
Bengaluru, India

Experience Summary:

- 18+ years of IT Experience with 10 years in Leadership roles.
- Working as Vice President Engineering at eGov Foundation (https://egov.org.in/).
- Handling Engineering team for National level Platform DIGIT(www.digit.org) for Urban governance.
- IIM-Bangalore - GMITE (1-year, Executive Management).
- Pursuing PGP AI/ML (Post Graduate Program in Artificial Intelligence and Machine Learning) from Great Lakes Institute of Management.
- Exposure of handling 15+ million GBP portfolio for Telecom OSS platform.
- Was part of Top 20 High Potential Leaders of Infosys China, 2012 HIPO (Org level leadership).
- Exposure of setting up office, Engineering process and governance, Operations, P&L, L&D, and HR Policies.
- Managed large Multi-Geography Engineering team for Europe, APAC, USA, UK, AMEA, and LATAM.
- Excellent exposure in Transformation initiative, Product and Platform thinking, Outsourcing strategy, SDLC, Agile Methodology, Vendor Management, Stakeholders Management, and Start up environment.
- Good exposure of managing large Urban governance, Telecom, Healthcare, Retail, Manufacturing, CPG domain portfolios with team size of 600+.
- Certified in the areas of AWS, Python, Agile, and the Service Delivery.

Professional Experience:

- VP- Engineering, eGoverments Foundation, Dec-2018 till date
- Head of Engineering/Principal S&IT at British Telecom, Feb 2015-Dec 2018
- Group Project Manager at emids Technologies Pvt. Ltd, Sept 2014- Feb 2015
- Senior Project Manager in Infosys Limited, Bangalore, Feb 2006- Sept2014.
- Software Engineer with Cybercom Resources (P) Ltd, Bangalore, Oct 2002 - Feb 2006.

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International Conference on Physical Science and Technology
ICPST - 2022
Keynote Speaker

Dr. M.Suguna Lakshmi
Senior Principal Scientist
Polymer Science and Technology Division
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Tamil Nadu, India

Dr. M. Suguna Lakshmi is a Senior Principal Scientist in Polymer Science and Technology Division of Central Leather Research Institute (CSIR-CLRI). She received her Ph.D. Degree in Polymer Nanocomposite from University of Madras in 2012. She worked in CSIR-NAL from 1991 to 1998. She is having 31 years of Experience in the field of Materials Science. Her Area of Expertise includes: Epoxy and their allied resins synthesis, characterizations and property evaluations, Epoxy-Nanocomposite materials for high performance applications, Nanoclays and Nanodrug formulations, Fibre reinforced Nanocomposites, Flame retardant leathers. Currently she is active in doing research on 3D Printing technologies. She has published 47 papers in peer reviewed journals. She has presented her research in 37 national and international conferences. She has guided several post graduate students and guiding PhD students. She is a Life member in the Society for Polymer Science India, Chemical Research Society of India.

Keynote Adress : ICPST

I am glad to be a part of this ICPST-2022 conference programme which I am sure will enrich every participant with the updates on latest developments in science and technology of physics, chemistry and engineering. Holding this conference on the theme "Physical science and Technology" is a timely relevant since this would lead to fruitful discussions on the emerging research and technology due to the recent advancements gained in understanding the fundamental principles lies in well maintaining the components of eco system for the sustainability of earth's resources, climate and energy. I am pretty confident that the students and professionals will find this an awesome opportunity to share and learn the latest developments in the concepts of physical science and technology.

My best wishes to the organisers for the grand success of this conference.

Your's Sincerely

(Dr. M.Suguna Lakshmi)

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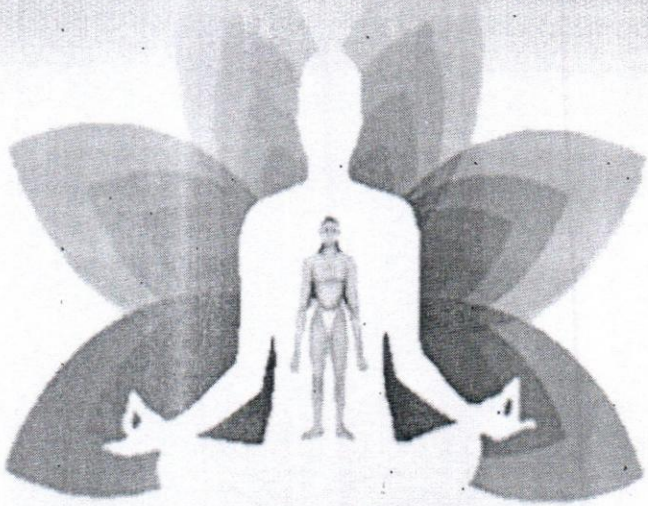

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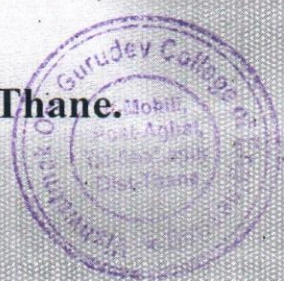

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Message from Convener

Season's greetings! I can't think of any better way to begin than with the quote 'The world today is changing so fast that, our experiences of the past have very little relevance to the future. Take the examples of big corporates Kodak, Nokia, Lehman Brothers and likes ...

Big systems of Cabled telephones, postal communications, banking and education.....

Many of these have buckled under the huge load of CHANGE. This is happening because of human Endeavour for innovative solutions, for an Idea, for RESEARCH. We are in the grips of a 'soft revolution' in which knowledge has become the main driver of economic growth. And we would all agree that higher education coupled with research, provides an extraordinary venue for creating and disseminating this knowledge. Yet as important as higher education has become to global development and prosperity, the worldwide demand for Research, quality academic programs still far exceeds the supply, technologies are quickly becoming essential to the big picture.....by transcending national boundaries to link, millions of researchers around the globe across time, space, and cultural experience. We will have to come up with the technologies for developing countries that are affordable, reliable and sustainable.

Research points to three basic learning preferences for acquiring and applying knowledge: learning by being shown....by being told....and by doing. The purpose of research is to inform action. Research must always be high quality in order to produce knowledge that is applicable outside of the research setting with implications that go beyond the group that has participated in the research. Thus, as researchers, it is imperative to take steps to overcome this barrier. Publishing your study may be one initial step to make your research known to the global community. Furthermore, you can present your research

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findings at the Conferences; send the results of your study to local officials, policy-makers, and community leaders.

A good research produces results that are examinable by peers, methodologies that can be replicated, and knowledge that can be applied to real-world situations. Researchers work as a team to enhance our knowledge of how to best address the world's problems.

So keep the great work going, keep researching....The world awaits you.....Thanks for sharing.

Ajay Sudhir Radke Ph D

Convener, ICMTEST-17

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Department of Mechanical Engineering and IQAC

Online FDP on "Research Methods in Sciences, Engineering & Technology" during 02-06 May, 2021

Time: 3.45 PM to 6.30 PM, Platform: Zoom / YouTube live streaming

Programme Schedule

Date	Time	Name of Resource Person	Affiliation	Topic
Day_1 02/05/2021	4.00 pm to 4.15 pm	**Welcome of Inaugural Guest and Overview of FDP: VJMAT Executive President Sir: Hon. Shri. Umesh Jadhav** (Prof. (Dr.) Ajeet Singh, Prof. (Dr.) S. K. Ukarande, Prof. (Dr.) V. K. Sunnapwar, & Prof. (Dr.) Rajesh Jaware, Principal)		
	4.15 pm to 4.30 pm	**Prof. (Dr.) V. K. Soni**	Associate Professor, Mechanical Engineering Department, MANIT, Bhopal, Ex. AICTE Director (Approvals), New Delhi	**Inaugural Address (AICTE and Research Opportunities)**
	4.15 pm to 4.30 pm	**Prof. (Dr.) S. K. Ukarande**	Principal, K. J. Somaiya Institute of Engineering and Information Technology & Associate Dean (Science & Tech), University of Mumbai	**Inaugural Address**
	4.35 pm to 4.50 pm	**Prof. (Dr.) V. K. Sunnapwar**	Principal, LTCE, Navi Mumbai & Charman Board of Stuies (Mech. Engg)	**Inaugural Address**
Day_1 02/05/2021 **Session-1**	5.00 pm to 6.00 pm	**Prof. (Dr.) C. M. Choudhari**	Professor & Head of Mech. Engg. Terna Engg. College, Nerul Navi Mumbai	**Research Methodology**
Day_2 03/05/2021 **Session-2**	4.00 pm to 5.15 pm	**Prof. (Dr.) A. S. Maheshwari**	Associate Dean, Sandip University, Nashik	**Case study on Research Methodology**
Day_2 03/05/2021 **Session-3**	5.15 pm to 6.30 pm	**Prof. (Dr.) M. S. Ali**	Principal, Prof. Ram Meghe College of Engineering & Management, Amravati	**'Research Process: The Eight Point Framework'**
Day_3 04/05/2021 **Session-4**	4.00 pm to 5.15 pm	**Prof. D. D. Shinde**	Director Admissions, Sandip University, Nashik	**Referencing Made Easy by Mendeley**

Day_3 04/05/2021 Session-5	5.15 pm to 6.30 pm	**Prof. (Dr.) P. V. Ingole**	Professor, Information Technology, PRMITR, Amravati	**Technical Thesis Writing**
Day_4 05/05/2021 **Session-6**	4.00 pm to 5.15 pm	Prof. (Dr.) A.D. Shirbhate	Professor, Mechanical Engineering, PRMITR, Badnera, Amravati	Robust Design by Taghuchi Method
Day_4 05/05/2021 **Session-7**	5.20 pm to 6.30 pm	**Prof. (Dr.) Rahul Dandage**	Associate Professor & Head, Automobile Engineering Dept. RMCET, Devrukh Ratnagiri	**Research Paper Publication in the Scopus Indexed Journals**
Day_5 06/05/2021 **Session-8**	4.00 pm to 5.00 pm	**Prof. (Dr.) Milind Kirkire**	Head, Mech. Engg & Dean (Academics), FAMT, Ratnagiri	**Case Study based research: What, Why and How?**
Day_5 06/05/2021 **Session-9**	5.05 pm to 6.05 pm	**Prof. (Dr.) Bhushan Patil**	Professor & Dean (Research & Development), FCRCE, Bandra, Mumbai	**Approaches for successful completion of Ph.D. Research**
Day_5 06/05/2021 **Session-10**	6.10 pm to 6.45 pm	**Prof. (Dr.) Sachin Shendokar**	North Carolina A & T Uni. USA Founder, Seventh Sense Consulting, USA	**Frontiers of Research**
Day_5 06/05/2021 Valedictory	6.45 pm to 7.00 pm	**Prof. (Dr.) S. U. Bokade** **Valedictory Guest**	Principal, RGIT, Mumbai & Member, Board of Studies, (Mech. Emgg.) University of Mumbai	**Valedictory Address**

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2nd – 6th May - 2021

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ABOUT THE COURSE

Research is the continuous process of any developing and developed society. The Government of India has been more & more attention towards the research & innovation to develop the indigenous technology. The faculty members in engineering institutions and scientists in various laboratories have been making day–and-night efforts in research & innovation. There are a number of research methods evolved over the decades and centuries. The continuous improvement and new addition of the research methods are also going on across the academia, research institution and industry. The beginners, research scholars and R & D personnel generally get confused during selection and implementation of research methods. This FDP is an attempt to share the knowledge and discuss various research methods applicable to various streams of Sciences, Engineering and Technology.

The course will cover concepts of basic understanding of Research Methodology through Sampling, Hypothesis Testing, Design of Experiments, reliability theory.

WHO CAN ATTEND

The FDP is free to all faculty members from technical institutions recognized by AICTE. The FDP is aimed at multi-skilled audiences from industry, faculties, and full time student researchers from engineering colleges of all disciplines. It's an interdisciplinary course.

ORGANIZED BY

DEPARTMENT OF MECHANICAL ENGINEERING

www.vishwatmakengg.in

IN ASSOCIATION WITH

Indian Institution of Industrial Engineering,
NHQ CBD Belapur,
Navi Mumbai
www.iiie-india.com

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ABOUT VJMAT

Vishwatmak Jangali Maharaj Ashram which located at Kokamthan near Shirdi, is a very powerful place for Meditation. Ashram was being founded by SADGURU ATMA MALIK. Everyone from all over the world is heartily invited here! VJMAT has started Educational Institutions since 1995 and year it is crossing new mile stones. We have about 11,000 students in 14 schools and colleges with faculty of 500 plus. These schools and colleges are located in Maharashtra, Gujrat and Karnataka.

COURSE OBJECTIVE

- To create awareness of various research methods applicable to engineering & technology.
- To provide motivation to pursue research
- To develop comprehensive understanding of basic principles of scientific research, data collection, sampling and analyzing.
- To be familiar with oral and written communication of research
- To cater to increasing aspirations of faculty

TOPICS TO BE COVERED

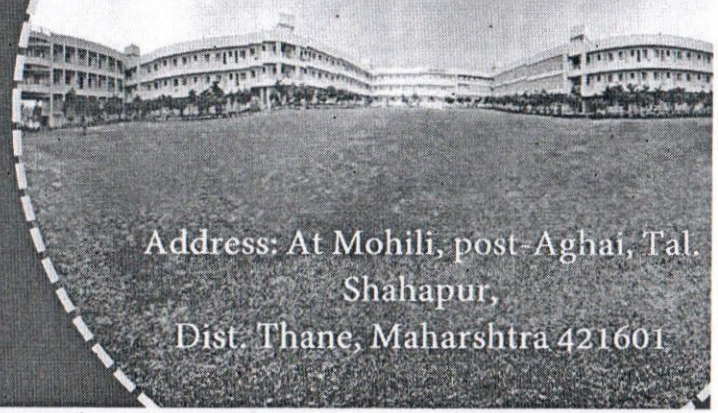
- Generation of Research Idea & Creativity
- Data Collection and Systematic categorization of data
- Data validation and Reliability Data sampling techniques
- Developing and Testing of Hypothesis
- Use of Statistical tools and techniques
- Writing Research proposal, Research article, and Technical Report
- Selected Case Studies

ABOUT VOGCE

Vishwatmak Om Gurudev College of Engineering (VOGCE) in the year 2011. VOGCE is located at Mohili-Aghaii on a table top surrounded by hills and blessed with serene, outstanding scenery. This College is approved by A.I.C.T.E. New Delhi, recognized by D.T.E. & Govt of Maharashtra and Affiliated to University of Mumbai(For Degree), Affiliated to M.S.B.T.E. (For Diploma). The VOGCE offers degree in Civil Engineering, Mechanical Engineering, Computer Engineering & Electronics and Telecommunication Engineering. It also offers regular Diploma in Civil Engg. and Mechanical Engineering in second shift.

The college is well connected by rail and road from Mumbai. The nearest railway station is Atgaon on central railway Mumbai-Nasik route. College is well-connected by road from Wada and Shahapur.

Email ID: vishwatmakengg@gmail.com
Contact: 91 95527 73875, +91 90114 33437



Address: At Mohili, post-Aghai, Tal. Shahapur,
Dist. Thane, Maharshtra 421601

AMRIT Research Policy

Objectives:

Our over-arching research objectives are to lead the International agenda across the Institute's Programs of study and through interdisciplinary initiatives, and make significant contributions to society regionally, nationally and internationally.

The objectives are:

1. To encourage faculty to undertake projects in thrust areas in Science and Engineering funded by various national and international agencies.

2. To motivate and depute faculty for doctoral and post-doctoral assignments at various national and international universities and organizations of repute.

3. To enhance the research awareness by organizing national and international conferences, workshops, seminars on research methodology, IPR, and Patents.

4. To provide a creative atmosphere supported by adequate facilities and resources in which research thrives among the faculty and students.

5. To explore new horizon of knowledge and ensure its practical implementation through collective efforts and quality research work.

Research Activities:

1. Procurement of high end laboratory equipment's and software for research.

2. Talks and Lectures by eminent researchers.

3. Collaboration and MOU with Industry and R & D Organization.

4. Organize and attend research conferences, Workshops, Symposia, etc.

5. Funding research based UG/PG projects and ideas.

Research Policy:

- The Institute shall promote the faculties to submit proposals to different National and International funding agencies.
- Institute shall encourage the international and national collaborations, especially funded by Government of India worldwide.
- The Institute shall try to financially assist faculty to attend national/ International conference, Workshops, Faculty development program and Short term training programs.

- Institute shall encourage and motivate faculties and students to published their research through journal publications and conference presentations and also provide funds.
- Every faculty members shall publish their researches in peer reviewed journals only.
- Faculty members shall be eligible for TA/ DA for presentation of their research work/delivering key note address in reputed International conferences and for reputed National conference once a year.
- The Principal Investigator shall be responsible to conduct research projects by streamlining the administrative and audit system.
- Collaboration of Library facility shall be initiated by the institute as per the requirements of researchers for required research project.
- Institute shall make efforts to provide separate hostel exclusively for men and women for collaborative research scholars.

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Department of Civil Engineering

Eco-Resort

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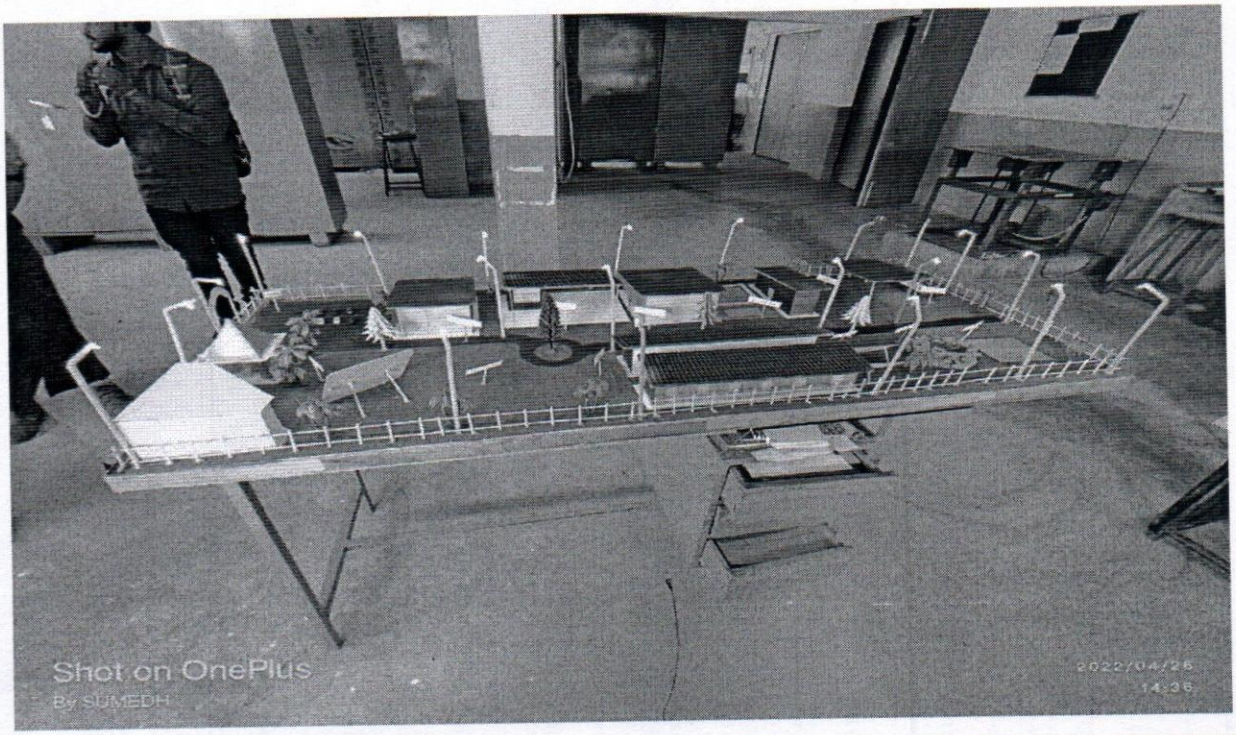

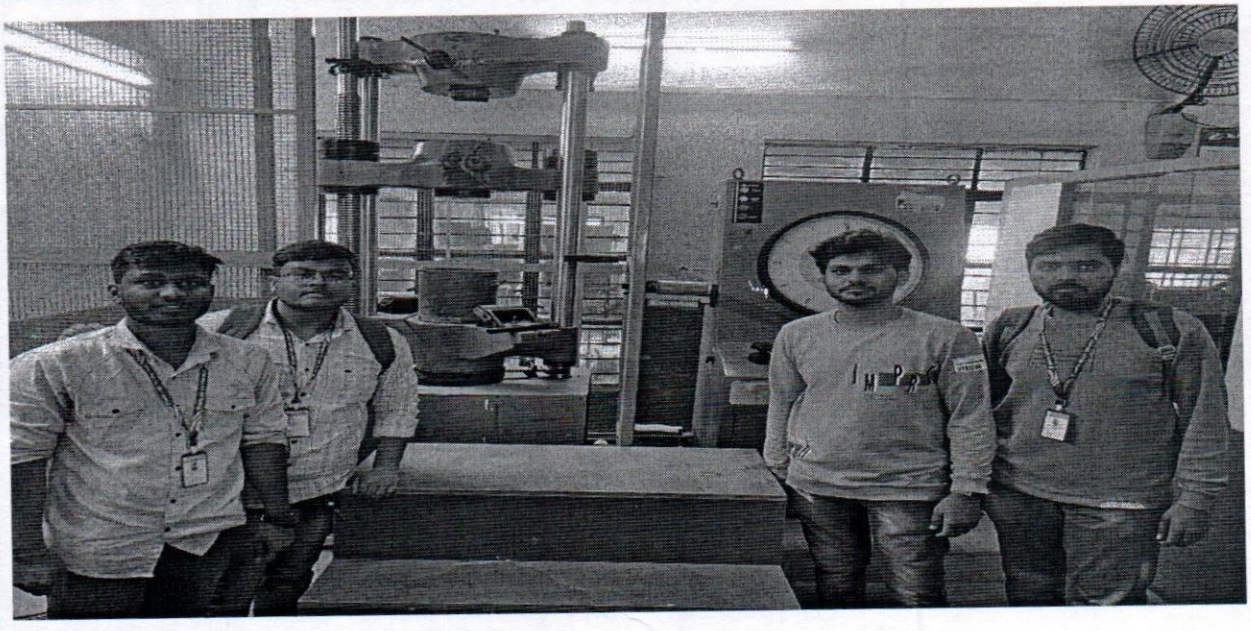

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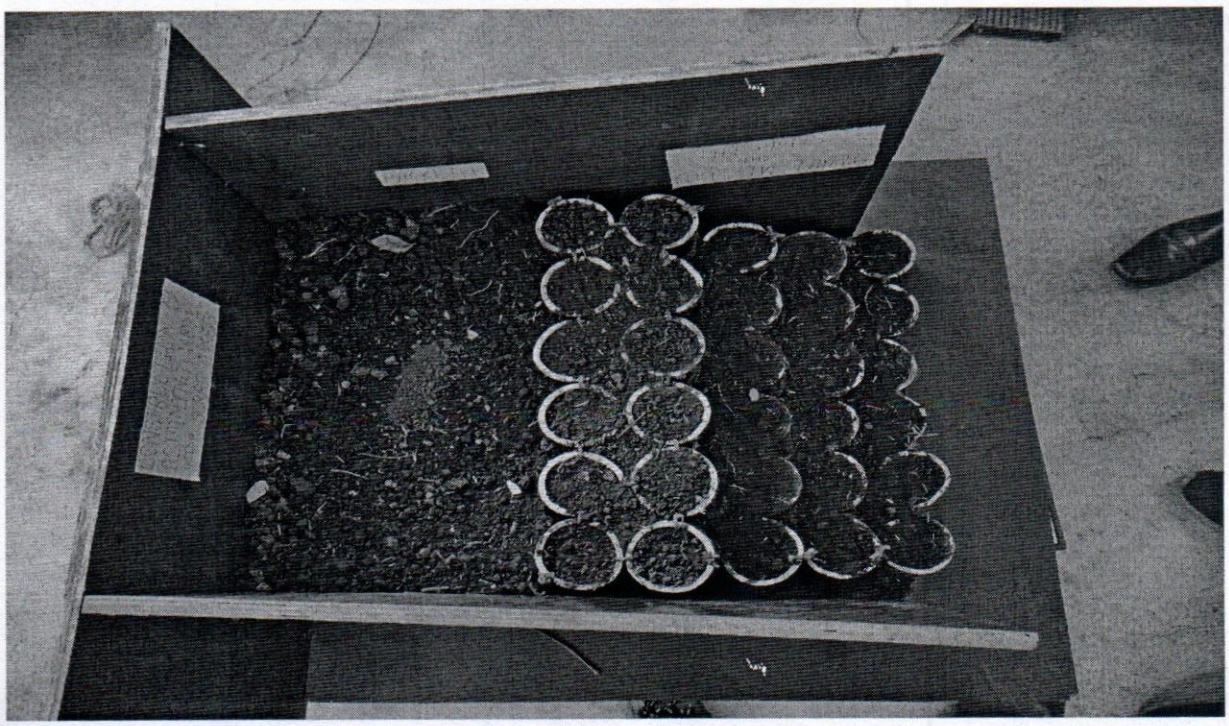

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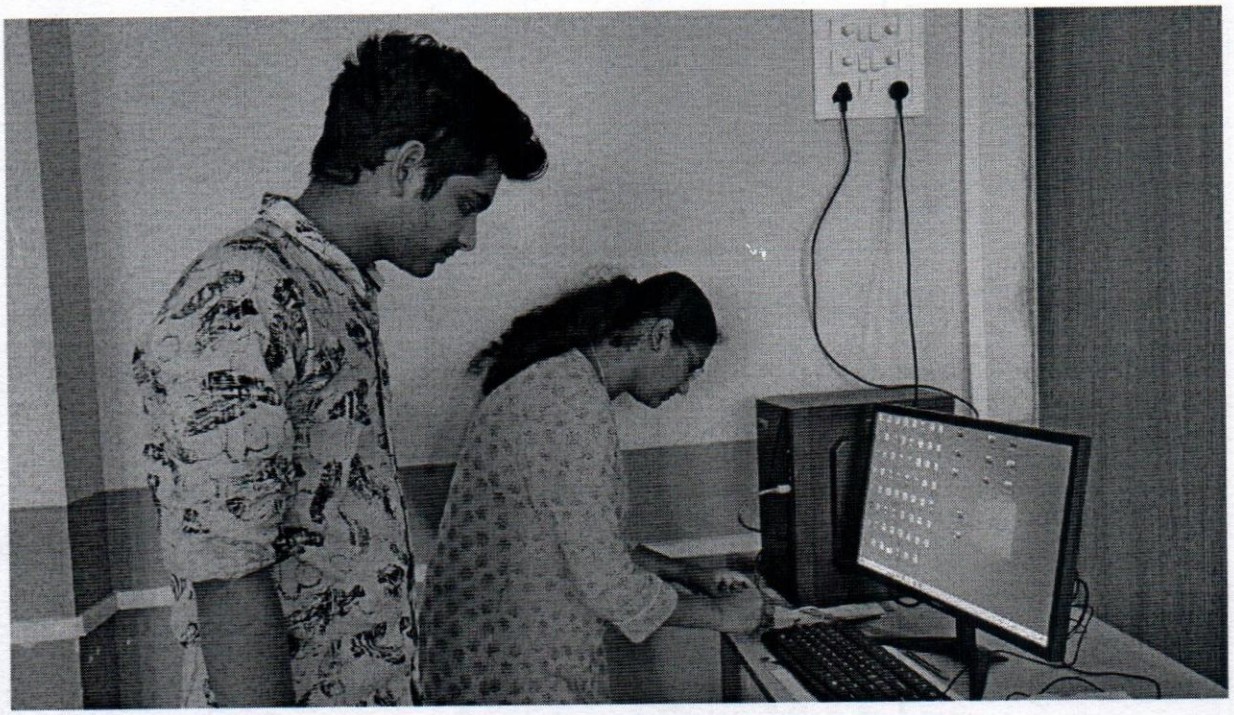
Department of EXTC Engineering

Project Photographs:



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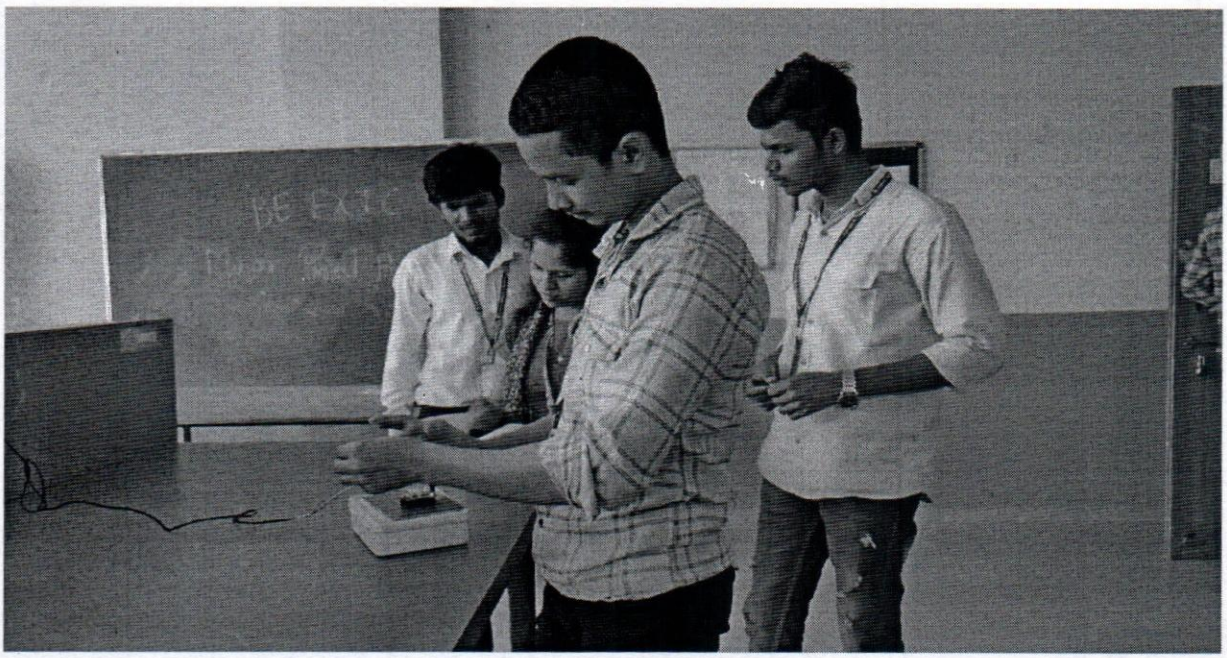

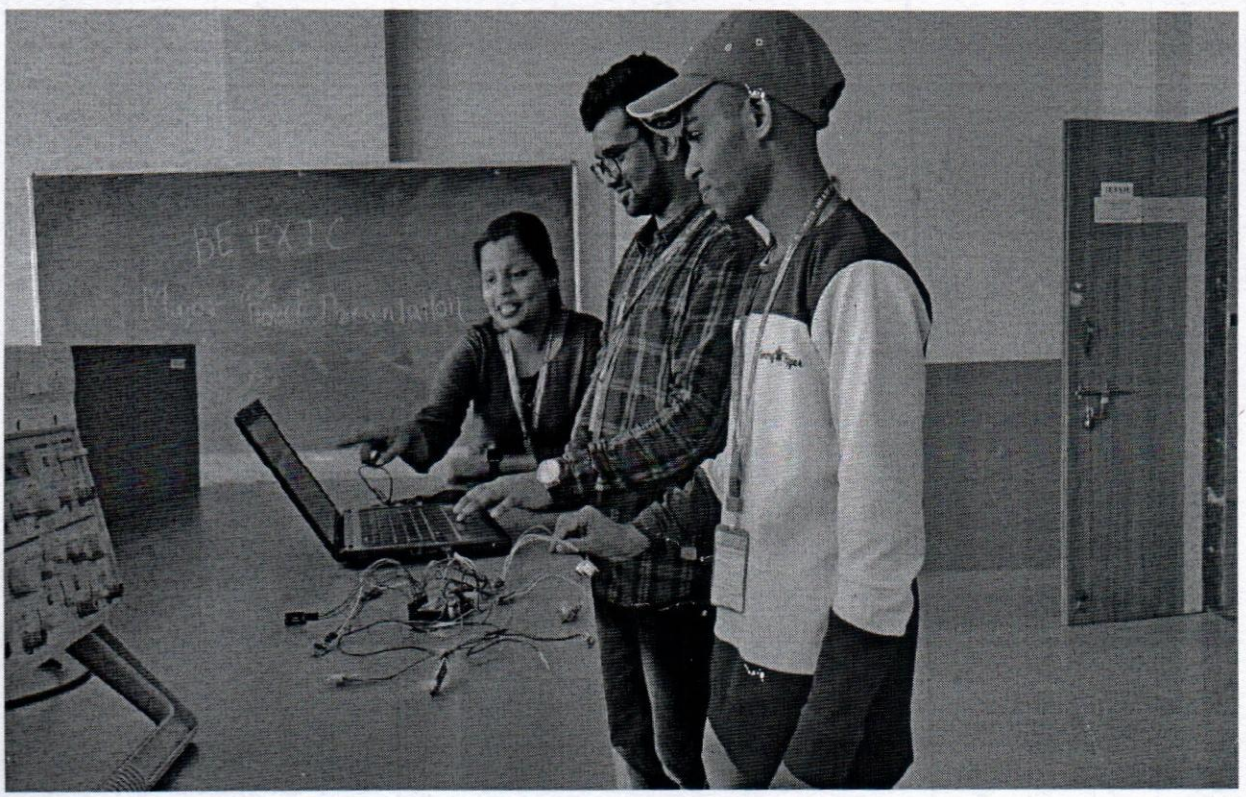

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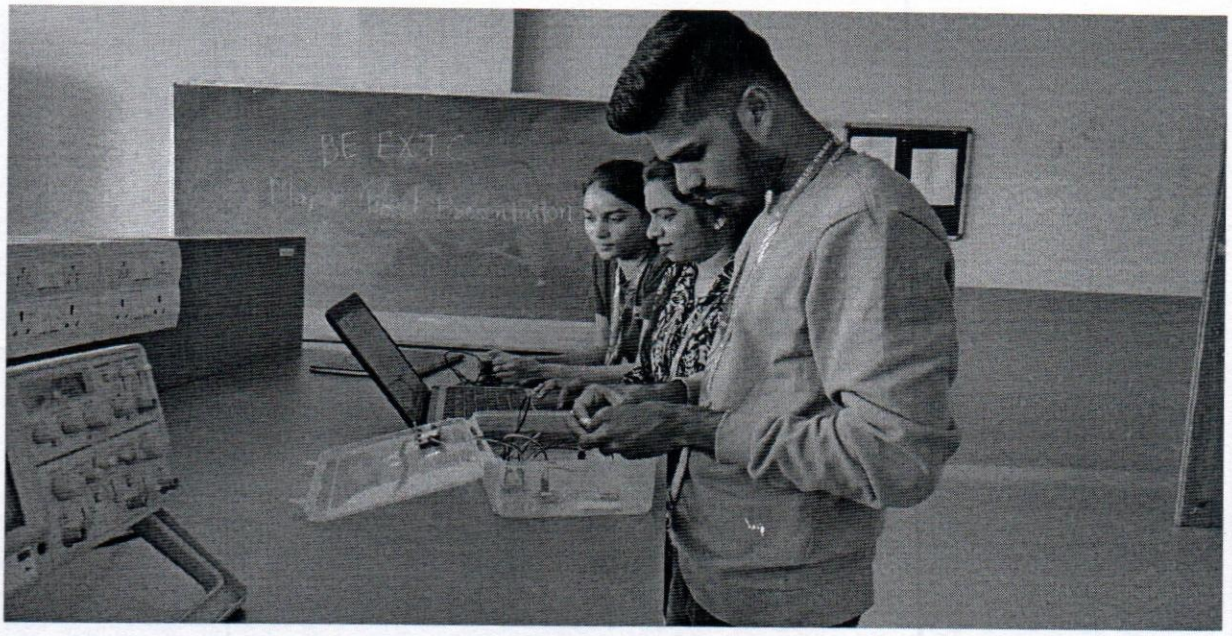

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Project Competition Photographs:

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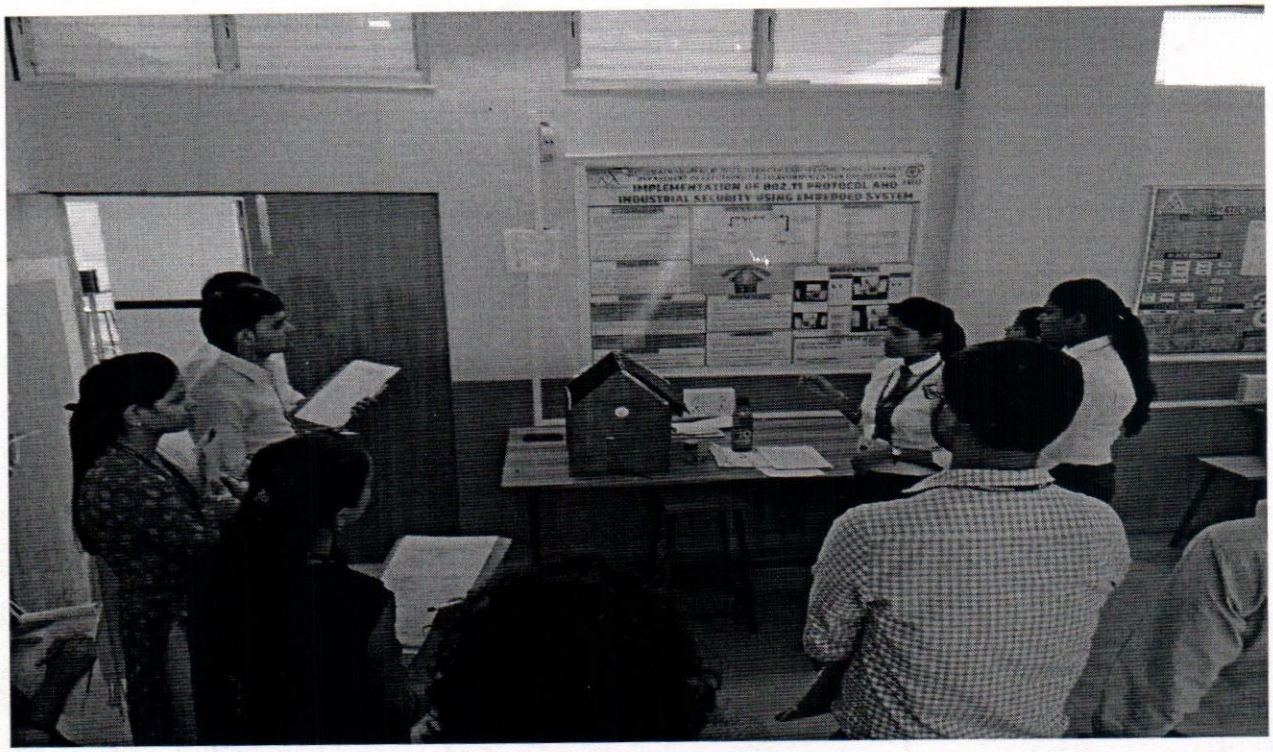

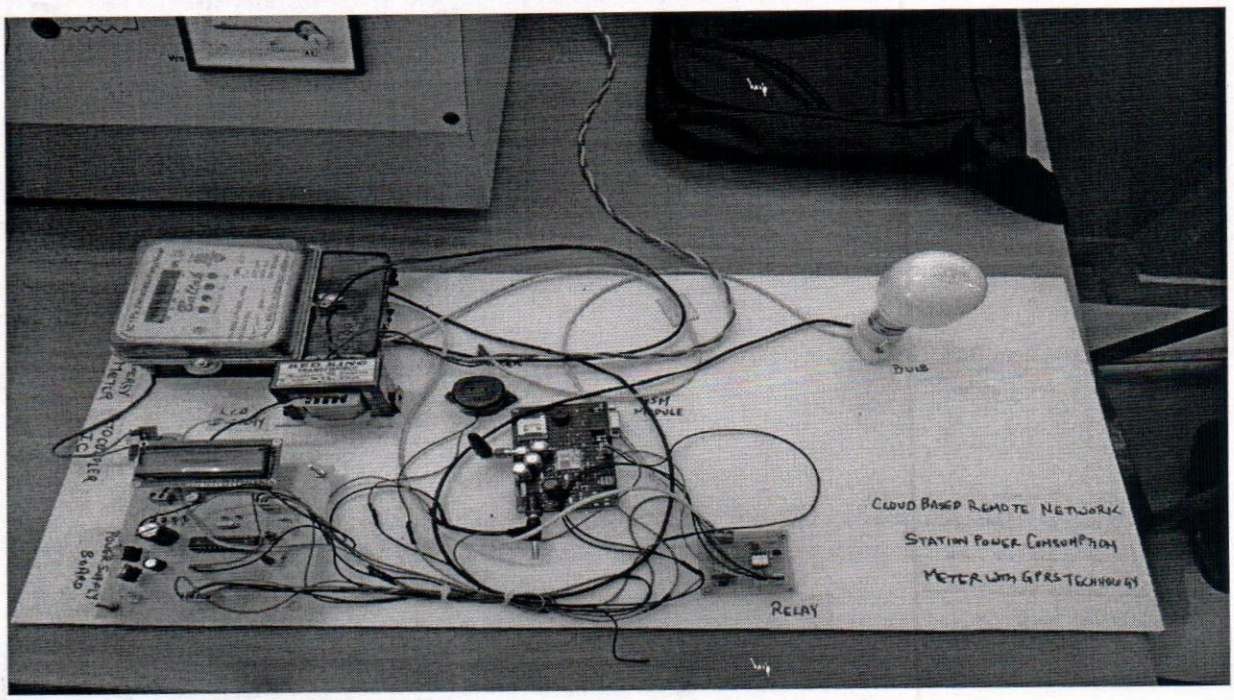

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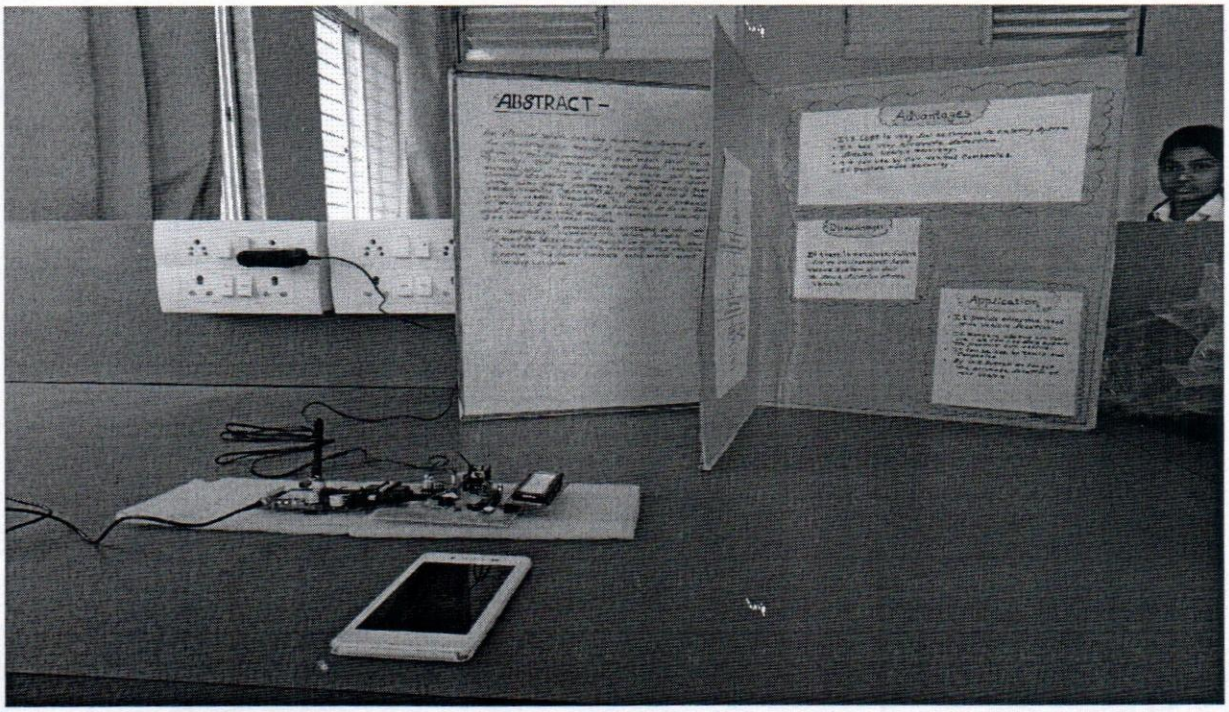

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