



Proceedings of
2nd Online International Conference on
**Advances in Engineering science
and Technology (ICAEST 2022)**

e-ISBN: 978-1-68576-326-8

Editor
Dr. Babasaheb Manik More



Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra, India.

2nd Online International Conference on
Advances in
Engineering Science and Technology
(ICAEST2022)

on
29th and 30th April 2022

Volume I

Editor
Dr. B M More



INSC International Publishers

First Volume: 2022

© Brahmdevdada Mane Institute of Technology, Solapur, Maharashtra, India.

DISCLAIMER the authors are solely responsible for the contents published in this book. The publishers or editors do not take any responsibility for the same in any manner. Errors, if any, are purely unintentional and readers are requested to communicate such errors to the editors or publishers to avoid discrepancies in future.

This work is subjected to copyright. All rights are reserved by the publisher, whether the whole or part of the content is concerned, and the rights of translation, reprinting, reuse of illustrations, recitation, and information storage by dissimilar methodology now known or hereafter developed.

The publisher, author and the editors are safe to assume that the advice and information in this proceeding are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editor's give warranty, with respect to the material contained in the proceeding or any errors or omissions that may have been made.

e-ISBN: 978-1-68576-326-8

PUBLISHER & PRINTER: INSC International Publishers

Pushpagiri Complex, Beside SBI

Housing Board, K.M. Road

Chikkamagaluru Karnataka

Tel.: +91-8861518868

E-mail: info@iiponline.org

IMPRINT: I I P

About INSC-Conference

The aim of the **Online 2nd International Conference on Advances in Engineering Science and Technology (ICAEST2022)** is to present the latest research and results of scientists related to all Multidisciplinary Science and Engineering topics. This conference provides opportunities for the delegates to exchange new ideas and application experiences in virtual mode. This will be used to establish business or research relations and to find global partners for future collaboration. We hope that the conference results constituted a significant contribution to the knowledge in these up-to-date scientific fields. The organizing committee of the conference is pleased to invite prospective authors to submit their original manuscripts to ICAEST2022.

All full paper submissions will be peer-reviewed and evaluated based on originality, technical and/or research content/depth, correctness, relevance to conference, contributions, and readability. The conference will be held every year to make it an ideal platform for people to share views and experiences in current trending technologies in the related areas.

About Organizing Institute

Brahmdevdada Mane Institute of Technology is having excellent infrastructure including buildings, laboratories, library, and other amenities creating an excellent learning environment. Institute buildings are well planned about 2 lacs sq. ft. built-up area on 10-acre land which is a part of a total of 70 acres of land. The building is the best example of modern architecture with due care of illumination and ventilation. The premise has very nice landscaping. Tree plantation adds a green, eco-friendly aspect to this landscaping.

The Institute has all mandatory / desired laboratories well equipped with the latest equipment. Computer Laboratories have the latest configured machines, software available for all, and the internet lab. All the laboratories of Electronics & Telecommunication Engg. have the latest ultra-modern training kits, Computers to fulfill all the needs of the students. Mechanical Engineering Laboratories are equipped with advanced Test rigs with digital interfacing. 10000 sq. ft. workshop houses modern machine tools. The Electrical Engineering laboratories reflect the image industry at a glance with a very nice ultra-modern testing machine sand controller.

The open-access library with a huge reading room became Hi-Tech due to the Digital Library.

Chief Patrons



Dilip Mane
Ex.MLA and President
BMSSP, Solapur

I Welcome to All Delegates to Online **2nd International Conference on Advances in Engineering Science and Technology (ICAEST 2022)** However, the health and safety of the conference participants is our first priority. Due to the current COVID-19 pandemic situation and travel restrictions, ICAEST 2022 is to be held as a VIRTUAL Conference. The conference will be held in 2 days April 29, 2022, to April 30, 2022. The theme of ICAEST2022 is to present the latest research and results of scientists related to all Multidisciplinary Science and Engineering topics. This conference provides opportunities for the delegates to exchange new ideas and application experiences in virtual mode. This will be used to establish business or research relations and to find global partners for future collaboration.

We hope that the conference results constituted a significant contribution to the knowledge in these up-to-date scientific fields. For participants, it promises to stimulate the scientific exchange of ideas, the identification of future trends in development on the latest leading-edge technologies, and take away with them the new challenges learned from the conferences. The ICAEST 2022 conference has a balance between industry and academia participation.



Pruthviraj Mane
Vice- President
BMSSP, Solapur

I would like to personally welcome you to the **Online 2nd International Conference on Advances in Engineering Science and Technology On 29-30 April 2022 (ICAEST 2022)** conference. The pandemic has forced us into a world only made possible through technology. I would rather see this as a unique opportunity.

In this virtual conference, we can span space and, to a certain extent, time in order to engage with each other in the ideas that we find so valuable. Our engagement is different and many of us will be learning the ropes anew but no less valuable to achieve this goal. A multidisciplinary approach is necessary to be able to critically revise the existing literature and develop new ideas and collaborations focused to open new scientific outputs.

From this point of view, ICAEST 2022 represents an exciting opportunity to meet different competencies and establish contacts focused to develop new research collaborations. I am tremendously pleased and excited to welcome you to our ICAEST 2022.



Mrs. Jayashri Mane
Secretary
BMSSP, Solapur

Dear delegates
Warm Greetings!!!

On behalf of BMIT and INSC India and the organizing committee, I would like to cordially welcome you to the Online **2nd International Conference on Advances in Engineering Science and Technology (ICAEST 2022)**.

In the last decade has the engineering and technology sector has invested significant time and effort into the area of assistive technology. This is a welcome change for the entire industry where we see clear opportunities and areas of larger networking between various scientists in this multidisciplinary area.

The Keynote address and thematic talks will drive you through the multi-sectored emergence in different fields. This could be the conference of its kind in the region where everyone could have the opportunity to showcase and present their ideas, thoughts, developments that could lead to a meaningful life in the community. I thank each and every one of you who are contributing to the success of the conference and looking forward to seeing you all soon.

Organizing Committee

Prof M M Shaikh

Coordinator
ICAEST 2022

Prof. A V Chipade

Dean Academics
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. A A Bhopale

Dean Admissions
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. S G Shrishikar

Dean NAAC
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. A N Khan

Dean NBA
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. T D Pawar

HOD GSE
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. J M Patil

HOD ENTC
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. A A Zambare

HOD MECH
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. P K Magadum

HOD ELECT
Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. A S Shimpi

HOD CSE

Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Prof. A L Advani

HOD MBA

Brahmdevdada Mane Institute of Technology
Solapur, Maharashtra

Technical Programme Committee

Prof. L P Deshmukh

Retired Professor & Head School of Physical Sciences
PAHSU, Solapur

Dr. Bhavana Umbrikar

Associate Professor Department of Geology
Savitribai Phule Pune University, Pune, Maharashtra

Dr. P D Panaskar

Professor in Chemistry Department
RTU, Nanded

Dr. B M More

Brahmdevdada Mane Institute of Technology
Solapur.

Steering Committee:

Dr. Sushilkumar Jadhav

School of Nano Science and Technology
Shivaji University, Kolhapur

Dr. Sanjay Lathe

Raje Ramrao College
Jat, Sangli, Maharashtra

Prof. V B Patil

HOD Physics
Solapur, Maharashtra

Dr. Mrunal Bachute(ENTC)

Pune, Maharashtra

Advisory committee:

Prof V A Bagale

Incharge of R & D Cell
BMIT, Solapur

Dr. Rahul Bachute

Vice Principal
Dr. D Y Patil School of Engineering and Technology, Pune

Conference Convener's

Dr. B M More

**Professor in Physics Dean Research and Development Cell
BMIT, Solapur, Maharashtra**

Content Table

Value Addition of Vegetables and Fruits Using Dehydration Technique

A A Zambare, B M More..... 1

Starch-Methacrylic Acid Hydrogel: Preparation and Swelling Characteristics

Md. Mateen M. Shaikh..... 2

An Efficient Industrial Switchgear Protection System

Shubham R. Kokate, Abdullah M.K, S. V. Murkute, R. D. Kokate..... 8

Quality Control of Foundry Product by SPC Tool- A Case Study

Milind S. Kadam..... 12

Performance Analysis of CI Engine using Waste Cooking Oil and Diesel Blend

Jamadar Saiphan Liyakat, Charate Manoj Manik..... 26

An Experimental Comparative analysis of Etching Depth for Different Etchants by using Photochemical Machining

*Avinash Sapkal, Akash Pawar, Shridhar Kulkarni,
Yashwant Chavan.....* 35

Contemporary Drift and Cognizance of the Architectural Journalism Outfit

Dr. Deepti Pande Rana..... 42

Fatigue Life Improvement by Interference Fit: A Literature Review Dhareshwar Subhash Patil

Sudhir Pandurang Soma..... 51

IOT Based Flood Monitoring System Using Node MCU

Megha R. Bhosale, Shital C. Jagtap, Pradnya V. Kshirsagar..... 59

Development of a low-cost Weedicides Application Module

Basavraj R. Birajdar, Shashikant S. Phulari..... 63

Structural and Electric Properties of Zn²⁺ doped Cobalt Ferrite Nanoparticles Synthesized by Sol-gel Method	
<i>Pravin Sambhaji Bhalerao, Ravindra C. Alange.....</i>	79
Optimised Performance Based Washing Machine	
<i>Rushikesh B. Gaikwad, Anup A Lamkane.....</i>	83
Social Distancing Token Based System	
<i>Prof. Dodmise U.S. , Maske Revati.....</i>	88
A Survey of Waste Management Using IOT	
<i>Nirmala T. Pujari, Dipakchandra Ghule.....</i>	92
Design of Vehicle Bus Data Onboard Diagnosis System using CAN	
<i>Shashikant Kamble, Shruti Jokar.....</i>	98
Numerical Investigation of Internal Fin Configurations on Heat Transfer of Annulus Tube Heat Exchangers	
<i>Kailash Mohapatra, Jiban Jyoti Sahoo, Tapas Kumar Parida.....</i>	104
Design and Development of Welding Fixtures for Various Components- A Review	
<i>Amasidha Kallappa Athani, Prashant Vijaykumar Dashwant</i>	115
Studies on Effect of Gravitational Pull on Neem Trees	
<i>A. M. Nadeghar, B. M. More.....</i>	121
Optimization of Influencing Factors in Mechanical Testing of Different Hot-air Aged Vibration Damping Materials using Taguchi Technique	
<i>Dr. Prasanth Kumar Mallipudi, Betha Hemanth, Dr. VVS. Bhaskara Raju...</i>	125
An Experimental Performance Analysis of Single Cylinder Diesel Engine for Karanja Biodiesel Blends	
<i>Chiapde A.V, Gaur A.V.....</i>	133
Structural and Magnetic Properties of Surfacted CoFe₂O₄ Nanoparticles	
<i>E. K. Kore, C. V. Chanmal, S. S. Bandgar, R. N. Mulik, B. M. More.....</i>	141

Optimal Scheduling of Residential Solar Photovoltaic Battery Energy Storage System Considering Demand Response in Smart Grid Environment	
<i>Shaikh T. W., Halli U. M., Survase S. S.</i>	145
An Overview on Technologies for Developing Smart Grid Environment	
<i>Chougule L.B., Bhadkumbe A.B., Patil S.R.</i>	154
Ultrasonic Rangefinder using Arduino	
<i>Rohitsingh A. Pardeshi, Harshavardhan S. Kumbhar, Komal A. Salunke, Kimayanand B. Solwat.....</i>	161
Camouflage-Military Robot	
<i>Nazia, Nikitha K, Nayana B V, Kusuma M P.....</i>	165
Victim Rescue from Open Borewell	
<i>Talamarla Vishnu sreelatha, Vinod M, Swagath M, Sparsha S Reddy.....</i>	169
Mapping of Landslide Susceptible Zones in and Around Patan Taluka, Satara District, India using Geospatial Techniques	
<i>Amit V. Shirke, Bandgar Bhagyashree P, Bhavana N. Umrikar.....</i>	171
Identification of sites for water Harvesting Structures in Naygaon Watershed, Maharashtra using Geospatial Techniques	
<i>Payal V. Waindeshkar, Bhavana N. Umrikar.....</i>	183
A Review on Vibration Analysis of Cantilever Beam	
<i>Patil Varsha B.</i>	193
IOT Based Home Automation	
<i>Namrta N. Shinde, Renuka N. Patil, Vaishanvi S. Gangekar, Seema A. Atole.....</i>	200
FEM Analysis of Single Cylinder Petrol Engine	
<i>Prof. Sunil Shivaji Dhanwe, Prof. Sunil B, Mishra.....</i>	204
Detecting Human Emotions Using Blue Eyes Technology	
<i>Kakade Vinashri Gaurang, Dipali H. Kumbhar.....</i>	215

Linear Differential Equation with Constant Coefficient	
<i>Chandrakant Shivaji Pimpale</i>	220
Water Distribution Network Design by Using Epanet	
<i>Nitin Pawar, Dattaprasad Gavali, Prabhu More</i>	225
Structural Analysis of an Adhesive Joint of an Automobile	
<i>Prof. Prashant Vijaykumar Dashwant, Prof. Amasidha Kallappa Athani</i>	233
Enhancing Students Verbal Communication Skills and Speech Etiquettes in English Language Teaching	
<i>Varsha Vikas Binage</i>	237
Design and Implementation of Ems under Critical Load Condition Using Fuzzy & Adaptive Fuzzy Controller	
<i>Vaishnavi G Shirsikar, Sampath Kumar Bodapatla, Seema G Shirsikar</i>	242
Applications of Robotics in Different Fields: A Brief Review	
<i>Dr. Vishalagoud S. Patil</i>	254
Dissolution Method Development and Validation for Estimation of Ibuprofen and Paracetamol by RP-HPLC	
<i>Sachin A. Babar, Sudhakar L. Padwal</i>	262
Fourier Series	
<i>Tejkumar Dattatray Pawar</i>	274
Consolidation of Soil using Electro-osmosis Technique.	
<i>Prof. S.D.Kandale, Prof. R.R.Tupe</i>	275