

SANJAY BHOKARE GROUP OF INSTITUTES

Miraj, Maharashtra

(Approved By AICTE, DTE Mumbai & MSBTE, Affiliated to DBATU, Lonere
(Raigad) & Shivaji University Kolhapur)



National Assessment & Accreditation Council

International e-Conference on Innovation and Emerging Trends in Engineering, Science and Management

[ESM-2K22]

24th - 25th June 2022

In Association With:



www.conferenceworld.in



www.iardo.com

ISBN: 978-93-91535-38-4

**International e-Conference on Innovation and
Emerging Trends in Engineering, Science and
Management**

[ESM-2K22]

24th - 25th June 2022

Editors

Dr.A.C.Bhagali

Prof. Soumya Hublikar

Publish By:

A.R. Research Publication

Preface

Conference World and AR Research Publication is fast growing group of academicians in Engineering, Sciences and Management. AR Research Publication is also known for fast reply and zero error work. Conference world has organized a various conferences at renowned places namely Delhi University; New Delhi, Jawaharlal Nehru University; New Delhi, PHD Chamber of Commerce and Industry New Delhi, YMCA New Delhi, India International Centre New Delhi Sri Venkateswara college of Engineering and Technology, Andhra Pradesh, Dhananjay Mahadik Group of Institutions (BIMAT), Shivaji University, Maharashtra, Vedant Engineering Kota and many more places across the country.

We are very pleased to introduce the proceedings of the International e-Conference on Innovation and Emerging Trends in Engineering, Science and Management [ESM-2K22] As for previous conferences, the theme was the link between the information provided by conference world and the use made of this information in assessing structural integrity. These were the issues addressed by the papers presented at the conference. The level of interest in the subject matter of the conference was maintained from previous events and over 150 suitable papers were submitted for presentation at the conference.

Papers were well represented in the conference to arouse a high level of international interest. Three countries were represented in the final program from Europe, North America and Asia. In the event, the conference was highly successful. The presented papers maintained the high promise suggested by the written abstracts and the program was chaired in a professional and efficient way by the session chairmen who were selected for their international standing in the subject. The number of delegates was also highly gratifying, showing the high level of international interest in the subject. This is also indicated by the large number of countries, 02 represented by the delegates. This Proceeding provides the permanent record of what was presented. They indicate the state of development at the time of writing of all aspects of this important topic and will be invaluable to all workers in the field for that reason. Finally, it is appropriate that we record our thanks to our fellow members of the Technical Organizing Committee for encouraging participation from those areas. We are also indebted to those who served as chairmen, without their support, the conference could not have been the success that it was. We also acknowledge the authors themselves, without whose expert input there would have been no conference. Their efforts made a great contribution to its success.

About College

Sanjay Bhokare Group of Institutes, (SBGI) Miraj is established in the year 2009 under the aegis of "Shri Ambabai Talim Sanstha". It is approved by All India Council for Technical Education (AICTE), New Delhi and DTE Mumbai Maharashtra. Degree Engineering is affiliated with Dr. Babasaheb Ambedkar Technical University, Lonere (Maharashtra) and MBA is affiliated with Shivaji University Kolhapur (Maharashtra).

The integrated college campus is centrally located at prime location of Sangli Miraj road including Degree Engineering, MBA, Diploma and other institutions. At present it has five UG engineering courses (Civil Engineering, Mechanical Engineering, Electrical Engineering, Computer Engineering, Electronics and Telecommunication Engineering), MBA course (Five Specializations) & Diploma (Four Courses). The institute is Accredited by NAAC with "A Grade" in 2017. The institute is involved in research, PhD work, industrial visits, sponsored projects, MoU's with several renowned industries, consultancy so as to achieve academic excellence.

About Conference

In order to remain on the incisive edge, one must be continually observant, when it comes to following up with the latest trends, distinguishing the most constraining challenges, or conducting their own research.

Research and development (R&D) can foster sustainable development by building greener, more inclusive societies. To be effective, however, infrastructure development, technology transfer and both public and private R&D need to be nurtured and regulated via effective policies.

This conference aims to bring together a range of professionals, researchers, academicians, industrialists, research scholars and students at common platform to interact with expert, innovation in field of Science, Humanities, Information Technology and Management.

From Chairman's Desk....



It gives me immense pleasure that the Sanjay Bhokare Group of Institutes, Miraj has organized “International e-Conference on Innovation and Emerging Trends in Engineering, Science and Management” [ESM-2K22] on 24th & 25th June 2022 in association with International Association of Research and Developed Organization (IARDO) and Conference World. Ever since the inception of our Institute, we have been striving for excellence in various departments of Engineering, Management and at the very same time marching forward with the mission of professional as well as technical development.

I believe in promoting events to be organized in ATS's SBGI, Miraj which opens research and innovation avenues for students. This International Conference (Online) is one such step towards motivating students and researchers. The conference greatly encourages graduate and Postgraduate students, research scholars and faculty to present innovative ideas and latest discoveries in the field of engineering and Technology. I would like to extend my gratitude towards organizers and all staff who had done excellent job for the success of this conference.

I congratulate the SBGI organising team, all faculty members, and all the participants of this conference for their research contributions to future endeavours and for research that brings laurels to the institute and to the field of future education. I am sure that the content of the proceedings will go a long way in the dissemination of knowledge.

Sanjay Bhokare
Hon. Chairman, Shri Ambabai Talim Sanstha, Miraj

Hon. Chief Patron:

Hon. Sanjay P. Bhokare

Chairman, Shri Ambabai Talim Sanstha, Miraj

Ms. Chinmayi Bhokare

Vice-President, Shri Ambabai Talim Sanstha, Miraj

Mr. Siddharth Bhokare

Managing Director, Shri Ambabai Talim Sanstha, Miraj

Mr. Parag Inamdar

Administrator Director, Shri Ambabai Talim Sanstha, Miraj

Patrons

Dr.A.C.Bhagali

Director, ATS's SBGI, Miraj

Dr.G.M.Malu

Dean Engineering, ATS's SBGI, Miraj

Dr.Paul Madhale

Dean, MBA, ATS's SBGI, Miraj

Dr.Mrs.S.S.Joshi

Coordinator IQAC, ATS's SBGI, Miraj

Hon. Chief Guest

Dr. Abubakar Mohammed

Dept. of Information Technology

Modibbo Adama University, Yola Nigeria

Keynote Speaker

Dr.Abhijt Chakraborty

Vice Principal , GIMT, Krishnagar, West Bengal

Mr. Ankur Kumar

Assistant Professor & Head - Research Cell , Department of Civil Engineering,
Buddha Institute of Technology, Gorakhpur, UP

Dr. Farzana Fathima

Assistant Professor, Sri S. Ramasamy Naidu Memorial College, Sattur,
Virudhunagar,

Technical Session Chair

Prof.Dr.G.M.Malu

Dean Engineering,
Sanjay Bhokare Group of Institutes, Miraj

Prof. Dr.Paul Madhale

Dean, MBA, ATS's SBGI, Miraj

Prof. Dr.D.S.Bhangari

Head Dept. of Electrical Engineering,
Sanjay Bhokare Group of Institutes, Miraj

Prof. Dr.S.S.Joshi

Coordinator IQAC, Sanjay Bhokare Group of Institutes, Miraj

Conference Convener

Prof. Soumya Hublikar

Head Dept. of Mechanical, ATS's SBGI, Miraj

Organizing Secretary

Mr. Anand Gopal Krishna Koparde

Assistant Professor
Head of Department Mechanical Engineering,
Sanjay Bhokare Group of Institutes, Miraj

Organizing Committee

Prof.Dr.D.S.Bhangari

Head Dept. of Electrical Engg.

Prof.S.A.Chougule

Head Dept. of Civil Engg.

Prof.V.V.Bhiungade

Head Dept. of E&TcEngg.

Prof.C.G.Kokane

Head Dept. of Computer Engg.

Prof.V.J.Sawant

Head Dept. of Basic Science

Prof.S.N.Kamble

Asst.Prof., Dept. of Electrical Engg.

Prof.P.S.Langade

Asst. Prof., Dept. of E&TcEngg.

Prof.U.V.Hiremath

Asst.Prof., MBA

Prof.K.K.Nikam

Asst.Prof., Dept. of Computer ScienceEngg.

Prof.S.A.Mahadik

Asst.Prof., Dept. of Civil Engg.

National Advisory Committee

Dr. Nagaraja V, Professor, School of Legal Studies, REVA University, Bangalore

Rajanala Sowjanya Yamini, Assistant professor at REVA University, Bangalore

Dr. Rajesh. D.P, Assistant Professor Dept. of Fisheries Resources & Management, College of Fisheries Mangaluru

Dr. Nagendra S, Associate Professor, PG Department of Business Administration, AIET, Mijar, Moodabidri, D.K. Karnataka India

Dr. Badiuddin Ahmed, Professor, Department Of Management and Commerce, Maulana Azad National Urdu University, Hyderabad

Dr. Jeet Singh, Officiating Principal, Head & Assistant Professor, Department of Commerce, Mahamaya Rajkiya Mahavidalaya, Dist. Bijnor (UP), India

Prof. Kishore Parth, Assistant Professor, L N Mishra College of Business Management, Muzaffarpur, Bihar.

Prof.Dr.Abhijit Chakraborty, Vice Principal & Professor, ME Dept. , Global Institute of Management & Technology,Krishnagar, Dist-Nadia, West Bengal (affiliated to Maulana Abul Kalam Azad University of Technology and recognized by AICTE)

Ashwini S H, PU Lecturer, Karaumbiah's Academy for Learning and Sports (KALS) School, Gonikoppal, South Coorg

Sunitha M M, Assistant Professor, Dept. Commerce, Govt. First Grade College Virajpet

Dr. Narinder Bali, Computer Eng. Excise & Taxation

Mr. Shrikant Sanjayrao Khairnar, Technical Assistant "B", MACS-Agharkar Research Institute,Pune (Maharashtra)

R.K.Padmashini, Assistant Professor, AMET Deemed to be University

Dr. Bhavana Narain, Associate Professor, MSIT MATS University, Pandari Raipur, Chhattisgarh

Dr. Koduru Chandra Mouli, Professor and HOD of Civil Engineering,
NRI Institute of Technology, Visadala (Post),Guntur Andhra Pradesh,

Karthikeyan Senthilnathan, Assistant Professor ,
Dept. of Food Processing Technology, AMET Deemed to be University

Dr. Neha Jain, HOD English,
Nitte Meenakshi Institute of Technology, Yelahanka, Bangalore

Dr. Paresh Vyas, Head of Department, Christian Eminent College Indore,
Madhya Pradesh

Dr. Prerana Dubey, Head of Department, Christian Eminent College Indore,
Madhya Pradesh

Sumit Sharma, Professor/Christian Eminent College, Indore

Dr. Seema Modi, Asst. Prof., Christian Eminent College Indore, Madhya Pradesh

Dr. Amita Joshi (Vyas), Asst. Professor, Indore (M.P.)

Dr. Prabhat Kumar Dubey, Professor, Indore (M.P.)

Dr. Rajesh Vyas, Principal, LIG Main Rd, Near L.I.G. Square, Indore,
Madhya Pradesh

Dr. N. Srinivasan, Professor and Head of Department of Mathematics,
St Peters Institute of Higher Education and Research, Avadi, Chennai, Tamil Nadu,
India

Dr. Saroj Kumar Singh, Associate Professor, Dept. of Rural Economics,
S. N. S. R. K. S. College, Saharsa Bihar, India

Prof. Dr. Mukesh Keshari, Professor, Faculty of Commerce, RSS Nager,
Indore (M.P.).

Dr. Mina Dadarao Koche, Assistant Professor, Plant Pathology Department,
Shri Shivaji Agriculture College, Near Nagpur By Pass, Amravati (Maharashtra)

Dr. Sonali Abhang, Lecturer in Symbiosis Law School (A Constituent of Symbiosis
International University) Pune

Dr. Harish.N, Lecturer, Dept of Economics, Adarsha PU College, Bengaluru

Dr. Sajith Vijayaraghavan, Associate Professor ,
Department of Electronics and Communication College of Engineering, Trivandrum

G Ramakrishna, Associate Professor, Mechanical Engineering Department,
GIET(A) , Rajamundry, West Godavari District, AP, India.

Mr. Neeraj Kumar, Assistant General Manager ,Galaxy Toyota, New Delhi

Rajendra Babu Yadiki, Professor & HOD of EEE Dept.,
Potti Sriramulu Chalavadi Mallikarjuna Rao College Of Engineering & Technology,
Kothpeta, Vijyawada, Andhra Pradesh

A.Vijay, Assistant Professor, Ambal Professional Group of Institutions

Tamilnidhi. M, Department of Electronics and Communication Engineering,
CEG Campus, Anna University, Chennai

S.Kannadhasan, Assistant Professor, Department of ECE,
Cheran College of Engineering K.Paramathi, Karur

Dr. U. Fathima Farzana, Assistant Professor of English,
Sri S. Ramasamy Naidu Memorial College, Sattur, Virudhunagar dst. Tamil Nadu

Haroon Rashid, Assistant Professor & H.O.D Economics Government P.G College
Rajouri (J&K)

Dr. Dharmendra Kumar Singh, Dean Engineering, Associate Professor,
Dr..C.V.Raman University, Vaishali, Bihar

Makhan Kumbhkar, Asst. Professor, Computer Science & Electronics,
Christian Eminent College Indore

Girija C, Asst Prof., MPMMSN Trusts College Shoranur, Kerala

Jyothi Budida, Asst .Professor, H&BS Department ,
Aditya College of Engineering , Surampalem, E.G.Dt , A.P, India

Amardip Diwakar Kurukwar, Assistant Professor at DAIMSR,
Deekshabhoomi, Nagpur

Dr. Syeda Shazia Bukhari, Assistant Professor School Of Business SMVD
University, J&K

Dr. Nilesh Uke, Principal/Professor; Trinity Academy of Engineering ,
Kondwa, Pune

Dr. Vikramjeet Singh, Assistant Professor, Mathematics, I.K. Gujral Punjab
Technical University, Amritsar Campus

Dr. Qamar Sultana Associate Professor, Civil Engineering Department,
Muffakham Jah College of Engineering and Technology, Banjara Hills,
Hyderabad, Telangana, India

Vandana, Assistant Professor, University of Delhi, Delhi

Dr. Rashmi Gupta, Associate Professor & HOD, College of Engineering Roorkee,
Roorkee, Uttrakhand

Dr Aparna.B Dhote, Head and Assistant Professor, Department of Chemistry, Nilkanthrao Shinde Science and Arts college Bhadrawati

Ms. Rimma Quadros Department Coordinator, BA- Multimedia and Mass Communication, Goregoan, Mumbai, Maharashtra

Lalit Rai, Assistant Professor, Department of Electronics Engineering, J. C. Bose University of Science and Technology, YMCA, Faridabad, Haryana

Shobha V,Assistant Professor,Department of Commerce, NMKRV College for Women, Bengaluru, Karnataka, India

Dr. Nancy Prasanna Joseph, Assistant Professor, SRM Institute of Science and Technology, Kattankulathur

International Advisory Board

Dr. Vijay Singh Rawat,
Assistant Professor, Adama Science and Technology University, Adama, Ethiopia

Prof. Dr. Amer A. Taqa,
DB'S . Department, College of Dentistry, Mosul University

Dr. Elsanosy M. Elamin
Assist. Pro. and Head Dept., Department of Electrical Engineering.

University of Kordofan, Faculty of Engineering, Elobeid, Sudan

Dr. P. Corell,
REU Program Director, Jackson State University, Jackson, USA

All papers will undergo a double blind peer review process and the criteria for acceptance will be based on quality, originality, technical content and relevance.

Proceeding of the conference has been published with ISBN: 978-93-91535-38-4

International e-Conference on Innovation and Emerging Trends in Engineering, Science and Management [ESM-2K22] Organized by: Sanjay Bhokare Group of Institutes, Miraj, Maharashtra (Approved By AICTE, DTE Mumbai & MSBTE, Affiliated to DBATU, Lonere (Raigad) & Shivaji University Kolhapur) with the collaboration of IARDO and Conference World on **24th and 25th June 2022**

Total 238 papers were received for the conference and 150 papers were shortlisted by the committee.

1. Accepted papers will be published in the peer reviewed international journals having ISSN & High Impact factor.
2. Selected Papers will be published in the UGC Care listed international journals having ISSN & High Impact factor.
3. Few very good quality Papers will be published in the Scopus indexed journal having ISSN & High Impact factor.
4. Author will get certificates, one for paper publication in Journal other for paper presentation in conference as per their choice
5. All the papers of the conference will be published in the conference proceeding with ISBN.
6. All the accepted and presented/Non Presented papers will be indexed in Google scholar & IDIIF.

Published by

AR Research Publication,

3/186 Santpura Govindpuri Modinagar- 201201 . Dist: Ghaziabad

International e-Conference on Innovation and Emerging Trends in Engineering, Science and Management [ESM-2K22] (Vol-01) Copyright © 2022, by AR Research Publication (India)

No part of this publication may be reproduced or distributed in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise or stored in a database or retrieval system without the prior written permission of the publishers. The program listing (if any) may be entered, stored and executed in a computer system, but they may not be reproduced for publication.

This edition can be exported from India only by the publishers, AR Research Publication (India) ISBN: **978-93-91535-38-4**

Managing Director: Gauri Sharma

Senior Researcher—Product Development: Ms. Pratima Singh

Head—Production (Higher Education and Professional): Satinder Kulkarni

Information contained in this work has been obtained by AR Research Publication (India), from sources believed to be reliable. However, neither AR Research Publication (India) nor its authors guarantee the accuracy or completeness of any information published herein, and neither AR Research Publication (India) nor its authors shall be responsible for any errors, omissions, or damages arising out of use of this information. This work is published with the understanding that AR Research Publication (India) and its authors are supplying information but are not attempting to render engineering or other professional services. If such services are required, the assistance of an appropriate professional should be sought.

Cover Design: Rishab Kumar