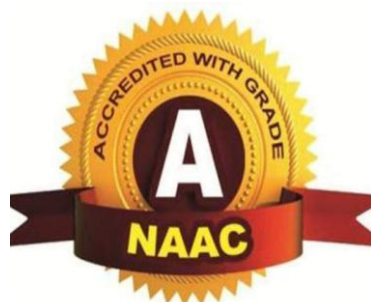


KJEE's TRINITY ACADEMY OF ENGINEERING, PUNE

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**International Multidisciplinary Conference on
Research, Technology & Engineering**

[ImCReTE-2022]

7th & 8th April 2022

In Association With:



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**International Multidisciplinary Conference on
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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 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 Multidisciplinary Conference on Research, Technology & Engineering [ImCReTE-2022]. 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 115 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, 04 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 the College

KJ's Educational Institutes is established in the year 2005 with excellent infrastructure spread over 110 acres of green campus with spacious buildings having backdrop of Sahyadri hills.

KJEI's Trinity Academy of Engineering is established in 2010 located on 112 acres and 22,000 sqm constructed state of the art, world-class infrastructure. Campus is well equipped with best laboratories, workshops, libraries, hostel, canteen, sports facilities, transportation facility and other amenities to create conducive environment for students in attaining highest standards in academics, research and professional skills.

Challenges and Opportunities are two sides of the same coin. We take every care of all-round personality development of individual student along with academic excellence.

Aim & Objective of the Conference-ImCReTE-2022

The conference is aimed to bring together innovative academics and industrial experts in the field of Engineering and Technology to a common forum. The conference aspires to exhibit the technical excellence of budding technocrats, research scholars, representatives from the academia and industry.

The conference is also a space for creating collaborative links between academics and professional practitioners and their workplaces, aiming at long-term sharing of knowledge and discussions of highly current issues.

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MESSAGE FROM PRESIDENT



It gives me immense pleasure that the Trinity Academy of Engineering has organized International Multidisciplinary Conference on Research, Technology and Engineering - ImCReTE-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 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 KJEI which opens research and innovation avenues for students. This International Multidisciplinary Conference on Research, Technology and Engineering is one such step towards motivating students and researchers. The conference greatly encourages graduate and Post-graduate 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 Research and development cell and all staff who had done excellent job for the success of this conference. I take this opportunity to extend my best wishes to all the participants of this conference for their future endeavors and also aspire that more and more people opt for research and bring laurels to themselves and to the field of education.

Shri. Kalyan Jadhav

President, KJEI

MESSAGE FROM EXECUTIVE DIRECTOR



At the outset, a my appreciation and congratulations to Trinity Academy of Engineering for successfully organizing International Multidisciplinary Conference on Research, Technology and Engineering on 7 and 8th April 2022. Education in general and technical education in particular, must be relevant to rapidly changing needs of the society, industry and business houses. The educational environment must be dynamic and quickly adaptable, so that professionals are capable of shouldering all encompassing global responsibilities.

The conference brought together students, researchers and educators of varied domains to share their ideas, views and also to explore their technical abilities. I am confident that this event will be useful to researchers and academicians to enhance their knowledge on the research topics of their chosen field.

I express my sincere thanks to all well-wishers for their valuable guidance and unstinted support, who have been directly or indirectly involved in organizing this conference. May you all always be in pursuit of Excellence.

Maj Gen. Sameer Kalla, VSM (Retd),
Executive Director, KJEI

MESSAGE FROM CAMPUS DIRECTOR



It gives me great pleasure to be part of the International Multidisciplinary Conference on Research, Technology and Engineering ImCReTE-2022 in KJEI campus. The conference proceedings is a collection of research based articles and papers presented by graduate and post graduate students and research scholars from all over India. These articles not only handle various issues in the field of Technology but also touch an array of topics right from Civil ,mechanical ,Electronics and Computer branches. Conducting a conference of this magnitude is always encouraging and I would appreciate the efforts of the Trinity Academy of Engineering in this endeavor.

I hope that the conference will provide a platform for various personnel to introduce innovative ideas and thoughts and exhibit their research skills in the area of all Technologies for sustainable development.

Dr. V. J. Kakhandki

Campus Director, KJEI

MESSAGE FROM PRINCIPAL



Education is an instrument to enhance the capabilities of human beings to become knowledgeable, creative and good citizens which resulted in my urge to develop excellent educational facility. I am extremely happy as principal of Trinity Academy of Engineering, hosting International Multidisciplinary Conference on Research, Technology and Engineering.

It is a justified gesture to provide a platform for graduate students and researchers to present their work and seek experts' evaluation that provides insight in the work undertaken. I hope that the presentations, discussions, appreciations and suggestions will help in improving their research work. I extend my heartfelt wishes to all the participants who have contributed in making this conference a great success. It gives me pleasure to write for the proceeding of International Multidisciplinary Conference on Research, Technology and Engineering (ImCReTE-200) an important event. Conferences of this magnitude help the graduate students and researchers to interact amongst themselves as well as experts in various areas. I feel that, with presentations and interactions with experts; students are exposed to the emerging trends in respective domains and the research work being carried out.

I would like to congratulate participants for contributing to this conference. I appreciate conference conveners, faculty coordinators, staff members of Trinity Academy of Engineering for organizing the International Multidisciplinary Conference on Research, Technology and Engineering.

Dr. Nilesh Uke

Principal, Trinity Academy of Engineering

MESSAGE FROM CONVENER



It is fair to conclude that the International Multidisciplinary Conference on Research, Technology & Engineering (ImCReTE-2022) held at Trinity Academy of Engineering in association with the conference world on 7th and 8th March, 2022 was a great success. So many people have contributed in so many ways to turn this event into a smoothly running meeting with many very interesting presentations and a very good atmosphere for discussion and networking.

Management of TAE has helped in obtaining the necessary administrative approval for organizing the event in our Campus. They supported in all possible manner to organize this conference. My special thanks to Mr. Tomio Isogai, Chief Guest for his gracious presence at the event. I am thankful to my faculty colleagues and non-teaching staff members for their constant help and guidance that radiated a source of energy within me. I feel proud and thank you for making this event a successful one. I am thankful for the enormous and high-quality support of all authors, reviewers and session chairs.

I wish that ImCReTE will keep on growing in coming years with more impact on the International research community.

Dr. Nikita Kulkarni,

Convener,

International Multidisciplinary Conference on Research, Technology & Engineering (ImCReTE-2022)

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: 978-93-91535-28-5**

International Multidisciplinary Conference on Research, Technology & Engineering [ImCReTE-2022] Organized by: KJEI's Trinity Academy of Engineering Accredited by NAAC with 'A' Grade (Approved by AICTE, New Delhi, Govt. of Maharashtra & affiliated to Savitribai Phule Pune University) through online as well as offline with the collaboration of IARDO and Conference World on **7th & 8th April 2022**

Total 208 papers were received for the conference and 115 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.

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