engineering proceedings

MDPI

Editorial

Preface: International Conference on Mechanical Engineering Design (ICMechD 2024) †

M. S. Alphin [1,*], Divya Zindani [1], M. Nalla Mohamed [1] and P. Ramkumar [2]

[1] Department of Mechanical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Rajiv Gandhi Salai, OMR, Kalavakkam, Chennai 603110, India; nallamohamedm@ssn.edu.in (M.N.M.)
[2] Indian Institute of Technology, Madras 600036, India; ramkumar@iitm.ac.in
* Correspondence: alphinms@ssn.edu.in
† All papers published in this volume are presented at the International Conference on Mechanical Engineering Design, Chennai, India, 21–22 March 2024.

1. Introduction

1.1. About the Conference

The International Conference on Mechanical Engineering Design was held at Sri Sivasubramaniya Nadar College of Engineering, Chennai, TamilNadu, India, on 21–22 March 2024. The scope of the International Conference on Mechanical Engineering Design provided an international forum for the exchange of ideas among interested researchers, students, developers, and practitioners in the areas of Engineering Design and research. ICMechD'24 addressed key topics and issues related to all aspects of Mechanical and Multidisciplinary Engineering Design. Conference programs included technical sessions, panel discussions, symposiums, tutorials, demos, workshops, and plenary/keynote speeches. The conference received a total of 165 abstracts, of which 85 were shortlisted for presentation. This volume, published by MDPI's *Engineering Proceedings*, highlights 40 articles that demonstrate the latest developments in mechanical and multidisciplinary engineering design.

The conference had the following themes:

1. **Design Theory, Methods, and Processes**: This covered Design Process, Design Research Applications and Case Studies, Design Theory and Research Methodology, Design Methods and Tools, Human Behavior in Design, Design for Manufacturing, Design for Reliability and Safety, Industrial Design, Optimization in Design, and Engineering Management.
2. **Advanced Materials, Mechanics, and Manufacturing**: This covered Advanced Materials, Composite Mechanics and Design, Mechanical Behavior of Materials, Materials Design, Polymer Engineering, Welding Design, Tribology in Design, Fatigue and Fracture Mechanics, Mechanics of Solids, Rapid Prototyping, and Finite Element Analysis.
3. **Robotics, Automation, and Emerging Technologies:** This covered Robotics, Automation, and Control, Microelectronics, Nanotechnology and Microengineering, Computer-Aided Design (CAD), Crash Analysis and Vehicle Dynamics, Biomechanics and Biomedical Engineering, Healthcare Engineering, Structural Dynamics/Design, and Thermal Engineering.
4. **Sustainable Design, Energy, and Multidisciplinary Engineering:** This covered Sustainable Product Design, Fluid Dynamics & Renewable Energy, Design of Thermal Power Systems, Global Business Strategy and Systems, Manufacturing Planning and Control, Automotive Engineering, Human Factors in Design, Sports Engineering, Mathematical Modeling and Simulation, and Multidisciplinary Projects.

check for updates

Published: 18 December 2025

Citation: Alphin, M.S.; Zindani, D.; Mohamed, M.N.; Ramkumar, P. Preface: International Conference on Mechanical Engineering Design (ICMechD 2024). *Eng. Proc.* **2025**, *93*, 30. https://doi.org/10.3390/engproc2025093030

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1.2. About the Institution

The Sri Sivasubramaniya Nadar College of Engineering (SSNCE), founded by Padma Bhushan Dr. Shiv Nadar, Chairman, HCL Technologies, stands out as a premier center of higher learning, with the stated mission of pursuing excellence in education and research. The institution, with its diverse and dynamic community of students, offers a distinctive combination of some of the finest graduate, undergraduate, and research programs, an accomplished faculty, world class facilities, and a residential campus set on 230 acres of sprawling sylvan surroundings. The SSNCE is home to beautifully designed buildings with state-of-the-art computer and internet facilities, modern workshops, seminar halls, auditoriums, well-stocked libraries, and sports and games fields, in addition to an indoor stadium with a gymnasium. The SSNCE has been ranked 46th among all the engineering colleges and 81st with the overall category of the NIRF (2024), instituted by the MHRD, Government of India.

1.3. About the Department

The department of Mechanical Engineering, SSNCE, was established in 2007. The department has offered a B.E (Mechanical Engineering) since the academic year 2007–2008; an M.E (Manufacturing Engineering) since the academic year 2012–2013; and an M.E (Energy Engineering) since the academic year 2013–2014. The department became an approved research center of Anna University in the year 2012. Ever since, 67 students have successfully completed PhDs, with 104 students currently PhD research. The UG program of the department has been accredited by the prestigious National Board of Accreditation (NBA). The department has research projects funded by the Department of Science and Technology (DST), the All India Council for Technical Education (AICTE), the Science and Engineering Research Board (SERB), and the Naval Research Board (NRB), totaling around INR 5.15 crores for conducting research in the fields of Friction Stir Welding, Magnetic molding of Composite Materials, Vibration Studies, Robotics, Abrasive Reclamation, and the Finite Element Analysis of Composites. The department is also actively involved in consultancy projects. In addition, the department has an active AICTE-sponsored Industry Institute Partnership Cell (IIPC) designed to carry out beneficial institute–industry interactions at a variety of levels.

2. Committee Members

This conference has been extensively supported by the Sri Sivasubramaniya Nadar College of Engineering with the guideship of the following members:

- **Chief Patron:** Dr. Shiv Nadar, Founder and Chairman of HCL Technologies Ltd., Founder of Shiv Nadar Foundation.
- **Patrons:** Dr. Kala Vijaykumar, President—SSN Institutions, Dr. V. E. Annamalai, Principal—SSNCE and Dr. S. Radha, Vice-Principal—SSNCE.
- **General Co-Chairs:** Dr. P. Ramasamy, Dean (Research)—SSNCE and Dr. K. S. Vijay Sekar, Professor and Head of Mechanical Engineering, SSNCE.

2.1. Organizing Committee

Eight faculty members from the Mechanical Engineering Department actively participated in organizing this conference, while the remaining members ensured the smooth conduct of the event. The organizing committee had **four main conveners**:

- Dr. M. S. Alphin, Associate Professor, SSNCE.
- Dr. M. Nalla Mohamed, Associate Professor, SSNCE.
- Dr. G. Selvakumar, Associate Professor, SSNCE.
- Dr. M. Selvaraj., Associate Professor, SSNCE.

In addition, **three co-conveners** were also involved in this process:

- Dr. S Suresh Kumar, Associate Professor, SSNCE.
- Dr. Divya Zindani, Assistant Professor, SSNCE.
- Dr. Sunil Kumar M.

2.2. Advisory Committee

This conference was guided by several stalwarts from across the world. Of these, the following members were part of the International Advisory Committee:

- Dr. Esther T Akinlabi, Northumbria University, UK.
- Dr. Foster Patrick, University of Exeter, UK.
- Dr. Paulo Davim J, University of Aveiro, Portugal.
- Dr. Bohua Sun, Cape Peninsula University of Technology, Cape Town, South Africa.
- Dr. Galkin A F, St Petersburg University, Russia.
- Dr. Georges Kouroussis, Olivier Verlinden Universite de Mons, Belgium.
- Dr. Kalyanmoy Deb, Michigan State University, USA.
- Dr. Karl-Heinrich Grote, Otto-Von-Guericke-University Magdeburg, Germany.
- Dr. Kunimatsu S, Yamaguchi University, Japan.
- Dr. Mahesh Chaturvedi, Distinguished Professor Emeritus, University of Manitoba, Canada.
- Dr. Michael J. Brennan, São Paulo State University, Brazil.
- Dr. Phillip Joseph, University of Southampton, UK.
- Dr. Satya Seetharaman, The Ohio State University Columbus, USA.
- Dr. Shyh-Chin Huang, Ming Chi University of Technology, Taiwan.
- Dr. Sung K. Koh, Yeungnam University, Korea.
- Dr. Takayuki Kitamura, Kyoto University, Japan.
- Dr. Viviana Meruane, Valentina del Fierro Santiago, Chile.
- Dr. Sewon Gil, Mine Reclamation Corporation of Korea.

We were also fortunate enough to obtain valuable suggestions, feedback and information from across India; the following individuals were part of the National Advisory Committee:

- Dr. ArockiaRajan A, IIT Madras.
- Dr. Arunachalam N, IIT Madras.
- Dr. Badrinathan K.S, SVCE Chennai.
- Dr. Bhaskar G B, MIT, Chennai.
- Dr. Chandramouli P, IIT Madras.
- Dr. Devadasan S R, PSG Tech.
- Dr. Dinesh Babu P, SASTRA.
- Dr. Illayavel S, SVCE Chennai.
- Dr. Jayabal K, IIITDM Chennai.
- Dr. Kingsly Jeba Singh, SRM IST.
- Dr. Latha Nagendran, CEG, Anna University.
- Dr. Manisekar K, NEC, Kovilpatti.
- Dr. Mohandass M, SVCE Chennai.
- Dr. Murugan R, Panimalar Chennai.
- Dr. Murugan S, IGCAR, Kalpakkam.
- Dr. Radhika N, Amirtha.
- Dr. Rajkumar M, RVS Dindugul.
- Dr. Ramesh Babu S, SVCE.
- Dr. Ramesh T, NIT Tiruchirapalli.
- Dr. Ramkumar P, IIT Madras.
- Dr. Sankaranarayanasamy K, NIT Tiruchirapalli.

- Dr. Selvakumar N, Mepco Schlenk Engg College, Sivakasi.
- Dr. Tamil Mannan K, Indira Gandhi National Open University.
- Dr. Thanigaiyarasu G, REC, Chennai.
- Dr. Vasanthanathan A, Mepco Schlenk Engg College
- Dr. Vasudevan M, IGCAR Kalpakkam.
- Dr. Vasudevan R, VIT, Vellore.
- Dr. Winowlin Jappes JT, Kalasalingam.

2.3. Technical Committee

Every conference requires a technical committee to scrutinize the work along with the conveners. We were lucky enough to have the following individuals as part of our technical team, as they helped shortlist abstracts and evaluate the worthiness for this conference:

- Dr. S.R. Koteswara Rao, Professor, SSNCE.
- Dr. S. Vijayan, Professor, SSNCE.
- Dr. B. Anand Ronald, Associate Professor, SSNCE.
- Dr. A. K. Lakshminarayanan, Associate Professor, SSNCE.
- Dr. D. Ananthapadmanaban, Associate Professor, SSNCE.
- Dr. L. Poovazhagan, Associate Professor, SSNCE.
- Dr. K. L. Hari Krishna, Associate Professor, SSNCE.

2.4. Programme Committee

The programme committee included the following members:

- Dr. M. Suresh, Associate Professor, SSNCE.
- Dr. K.S. Jayakumar, Associate Professor, SSNCE.
- Dr. S. Suresh Kumar, Associate Professor, SSNCE.
- Dr. S. Rajkumar, Associate Professor, SSNCE.
- Dr. R. Prakash, Associate Professor, SSNCE.
- Dr. A.S. Ramana, Associate Professor, SSNCE.
- Dr. G. Satheesh Kumar, Associate Professor, SSNCE.
- Dr. G. Selvakumar, Associate Professor, SSNCE.
- Dr. R. Vimal Singh, Associate Professor, SSNCE.
- Dr. B. Jayakishan, Assistant Professor, SSNCE.
- Dr. D. Ebenezer, Assistant Professor, SSNCE.
- Dr. T. Micha Premkumar, Assistant Professor, SSNCE
- Dr. Srinivasan S A, Assistant Professor, SSNCE.
- Dr. Mani Prabhu S S, Assistant Professor, SSNCE.

3. Keynote Speakers

Two keynote speakers were invited to this event:

- Dr. Ramkumar P, Professor, IIT Madras.
- Dr. Jayabal K, Professor & Dean of Academics, IIITDM, Kanchipuram.



Conflicts of Interest: The authors declare no conflicts of interest.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.