



3rd INTERNATIONAL CONFERENCE ON

**Smart and Sustainable Developments in Materials,
Manufacturing and Energy Engineering
(SME-2021)**

E-Conference (Online Mode)

**(Under the Aegis of ICETE 2021 Multi-Conference
Platform)**

**November 19-20, 2021
Organized by**

Department of Mechanical Engineering



(An Autonomous Institution affiliated to VTU, Belagavi)

Nitte – 574 110, Karkala Taluk, Udupi District, Karnataka, India

ISO 9001:2015 Certified, Accredited by UGC NAAC with 'A' Grade

Phone: +91 8258 281264; Fax: +91 8258 281265

Website: www.nmamit.nitte.edu.in/

About the Institute

Nitte Mahalinga Adyanthaya Memorial Institute of Technology (NMAMIT), affiliated to VTU, Belagavi, an autonomous Institution offering UG, PG and Doctoral programmes. It is a unit of Nitte Education Trust, Mangaluru. It currently offers 9 UG programmes in engineering, 8 M.Tech programmes, MBA and MCA programmes. All the UG programs are accredited by NBA, New Delhi. The Institute is ISO 9001:2015 certified and also accredited by NAAC, New Delhi with A grade. The institute is ranked 133 in the NIRF ranking (Engg Institutes)-2020, Govt. of India. The Institute has been awarded "Diamond" rating by QS I-GAUGE Indian Institute Ratings. The college has signed MoU with reputed industries, research organizations, and International universities to promote close interaction in areas of recent technologies, Research & Development, and skill development programs.

About the Organizing Department

The Department of Mechanical Engineering at NMAMIT was established in the year 1986 with an intake of 40 BE students. Since then, the department has shown exponential growth and at present passing out strength of UG students is ~252 per year. The department has two master's degree programmes namely Machine Design and Energy Systems Engineering with an intake of 18 students each. The department is accredited by the National Board of Accreditation (NBA) under Tier-1. The department is also an established Research Centre of VTU Belagavi and so far, nine students have completed their PhD, and there are several part-time and full-time doctoral students. The department has six centres of excellence. The research work carried out in micro-machining has won four awards in the prestigious IMTEX exhibition in the last 5 years. The most recent one is 2nd best prize for Research on "Two-axis TIG welding of Aluminium alloy with synchronized pulsating wire feeder" in the IMTMA-IMTEX-ToolTech2020 Exhibition held at Bengaluru in January 2020. The institute also won Best Student Project Award in the Fluid Power Society of India Exhibition 2019. Some of the products have been patented and some products have moved from Lab to Land. The students are provided with all-round development opportunities through professional societies, branch association, and several professional club activities.

About the Conference

Department of Mechanical Engineering, NMAM Institute of Technology, Nitte is organizing a Two Day International Conference on "Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering (SME-2021)" as a part of Multi-Conference "International Conference on Emerging Trends in Engineering" (ICETE- 2021) on 19th and 20th November 2021.

The conference is dedicated to driving innovation in nearly every aspect of Mechanical Engineering. The conference provides a platform for researchers, professionals, executives and practicing engineers from various research institutes, educational bodies and practicing engineers from industries to share and exchange their ideas on the theme of conference. A series of keynote presentations, technical paper and poster presentations are planned to discuss on emerging trends, feasible solutions to shape and enable the development of mankind.

The theme of the Conference

Smart and Sustainable developments in Materials, Manufacturing and Energy Engineering, which is focused on research and emphasizes the latest technological innovations. It showcases the commitment of NMAMIT in bringing together various disciplines, converge and amalgamate various new ideas, fields and technologies. The focus of the conference is to open a new paradigm to deliberate on eco-friendly and robust design use of materials with less environmental impact, use of fewer materials, optimal utilization of resources during manufacturing processes with zero defects. Also, produce less pollution, waste, reuse and recycle of materials. The emphasis is on application of Artificial Intelligence to enhance the productivity, safety and better management of the systems and processes.

Thrust Area

- ◆ Smart and Sustainable Developments in Materials
- ◆ Smart and Sustainable Developments in Manufacturing
- ◆ Smart and Sustainable Developments in Energy

Sub Themes to be addressed in this conference include, but not limited to the following:

Smart and Sustainable developments in Materials

- Advanced High strength steels
- Aluminum Alloys
- Biomaterials
- Ceramic Materials
- Characterization & Testing
- Composite Materials
- Dynamic Behavior of Materials and Structures
- Functional Materials
- High temperature & Cryogenic Materials
- Luminescence Materials and Its Applications
- Materials for Automotive, Energy and Environment
- Materials for Solid State Ion Batteries
- Nanomaterials
- Porous Materials and Their Applications
- Smart and Device Materials
- Smart Construction Materials
- Transport Properties of Materials

Smart and Sustainable developments in Manufacturing

- CAD/CAM/CAE/CIM
- Computational Mechanics & Techniques
- Control and Automation
- Electronic Manufacturing
- Flexible/ Lean Manufacturing
- High-Speed/Precision Machining & Inspection
- Industrial Robotics and Automation
- Machine Vision
- Measurement Control Technologies and Intelligent Systems
- Mechatronics, MEMS and Nanotechnology
- Metal Cutting and forming Processes
- Modeling, Analysis & Simulation of Manufacturing Processes
- Non-Conventional Machining Processes
- Production, Operations and Supply Chain Management
- Simulation and Optimization Techniques
- Surface Engineering
- Sustainable Manufacturing Technologies
- Welding Technology
- Tribology
- System Dynamics and Vibration

Smart and Sustainable developments in Energy

- Alternative fuels
- Biogas and Biomass
- Energy Storage Batteries and other Storage Devices
- Future Energy Technologies
- Foundry and Casting
- Global warming & Green Energy Options
- Green Buildings
- Health and Environment
- Heat & Mass Transfer
- Hybrid vehicles & Integration
- Nanotechnology for sustainability
- Refrigeration & Air-conditioning
- Sustainable Product development
- Thermal Energy
- Thermo Electric Materials
- Nonlinear Dynamics

Invited Speakers

Eminent researchers, academicians and industrialists will be delivering keynote address on topics pertaining to the three major themes of the conference. The list of keynote speakers and related details will be updated on the website.



Prof. Prasad Yarlagada
Queensland University of
Technology, Australia



Prof. Stijn Derammelaere
University of Antwerp
Department of Electro-mechanics
Campus Groenenborger
Groenenborgerlaan 171
2020 Antwerp – Belgium



Prof. Milind Atrey
Professor
Department of Mechanical Engineering
IIT-Bombay, India



Dr. Bharatheesh Jaysimha
Artificial Intelligence Implementation
Advisor
Numentrix consulting
Bengaluru, Karnataka, India

Paper Submission

The research paper submitted should be original work and should not have been submitted in another conference or journal. The respective journal format should be followed for the paper. To submit the paper kindly login to conference website: <http://www.sme2021.in/>. Manuscripts in electronic format (DOC, DOCX only) to be submitted

"THE BEST PAPER WILL BE AWARDED IN EACH STREAM"

committees

Patron:

Sri N. Vinaya Hegde

Chancellor, Nitte (Deemed to be University) & President, Nitte Education Trust

Steering Committee:

Sri. Vishal Hegde, Pro-chancellor, Nitte (Deemed to be University)

Dr. N.R. Shetty, Chancellor, Central University of Karnataka, Gulbarga, Karnataka

Dr. Takamoto Itoh, Vice Dean- Mech Engg, Ritsumeikan University, Japan

Dr. Harish Kumar Madhyastha, Professor, University of Miyazaki, Japan

Dr. Omid Ansary, Senior Associate Dean (Academic Affairs), Penn State Harrisburg, USA

Dr. Samson Ojoawo, Professor, Ladoko Akintola University of Technology, Nigeria

Dr. Shripad T. Revankar, Professor, Purdue University, U.S.A

Mr. Michio Kaida, Director, Chairman, NIDEC-READ Corp., Kyoto, Japan

Mr. Tomonari Kobayashi, President, Kobayashi Create Co. Ltd., Aichi-Ken, Japan

General Chair:

Dr. Niranjana N. Chiplunkar, Principal, NMAMIT, Nitte

General Co-Chairs:

Dr. I. R. Mithanthaya, Vice Principal & Dean (Academics), NMAMIT, Nitte

Dr. Srinivas Rao B. R., Vice Principal & Controller of Examinations, NMAMIT, Nitte

Conveners:

Dr. Sudesh Bekal, Professor & Dean (R & D), NMAMIT, Nitte

Dr. Muralidhara, Professor & PG Coordinator, NMAMIT, Nitte

Organizing Committee

Dr. A N Parameswaran, Director, Institute Industry Collaboration, NMAMIT, Nitte

Dr. G. Srinikethan, Director (R&D – Technical), Nitte (Deemed to be University)

Dr. Subrahmanya Bhat K., Professor & Dean (Student Welfare), NMAMIT, Nitte

Dr. K. Rajesh Shetty, Professor & Dean (Admission & Alumni Affairs), NMAMIT, Nitte

Dr. Srinivas Pai P., Professor & Deputy Controller of Examinations, NMAMIT, Nitte

Dr. Srinath Shetty K, Professor & Resident Engineer, NMAMIT, Nitte

Ms. Rashmi D Hegde, Associate Prof. & Head, Dept. of Humanities, NMAMIT, Nitte

Dr. Kumudakshi, Associate Prof. & Head, Dept. of Mathematics, NMAMIT, Nitte

Dr. Shivaprasad Shetty M, Asst. Prof. & Head, Dept. of Chemistry, NMAMIT, Nitte

Dr. Shobha R Prabhu, Asst. Professor & Head, Dept. of Physics, NMAMIT, Nitte

Organizing Secretary:

Dr. Grynal D'mello, Asst. Prof., Dept. of Mechanical Engg., NMAMIT, Nitte

SME-2021 Program Chair:

Dr. Shashikantha Karinka, Professor & Head, Dept. of Mechanical Engineering, NMAMIT, Nitte

Advisory Committee:

Dr. A. K. Sharma, Professor, IIT Roorkee

Dr. Ajit Kumar Kolar, Retired Professor, Mechanical Engineering Department - IIT Madras

Dr. Amit Banerjee, Professor, Pennsylvania State University Harrisburg, USA

Dr. Anand B. Dhaulakhandi, Additional Director, DRDO, New Delhi

Dr. Anand M shivapuji, Principal scientist Centre for sustainable energy, IISc, Bangalore

Mr. Ashoka Kumar, Director RV- RV-Skills Center for Emerging Technologies, Bangalore

Dr. Dinesh Singh Thakur, Assoc. Professor, DIAT, Pune

Dr. G. Ravichandran, Adjunct Professor, NMAMIT Former General Manager, WRI, Trichy

Dr. G. Siva Kumar, Scientist-F, Center for Engineering Coatings (CEC), ARCI-Hyderabad

Dr. Girisha K.B., Professor, Adichunchanagiri University, BGSIT, Bangalore

Dr. H. S. Maiti, Former Director, CGCRI, Department of Ceramic Engineering, NIT Rourkela

Dr. Hoysala N Chanakya, Centre for Sustainable Technologies, IISc, Bangalore

Dr. J. M. Mallikarjuna, Professor, IIT Madras.

Dr. K V Gangadharan, Professor, NITK Surathkal

Dr. K. Venkateswaralu, Principal Scientist CSIR-NAL, Bangalore

Dr. L.M.Das, Professor, Centre for Energy Studies - IIT Delhi

Dr. M Ravi, Senior Principal Scientist, CSIR- NIIST, Trivandrum

Dr. M.T Mathew, Assoc. Professor, Illinois College of Medicine Rockford, USA

Dr. Manish Tak, Scientist-E, CLPM-ARCI, Hyderabad

Dr. Murali Tumuluru, Senior Welding consultant, Tumulru Welding Consulting, USA

Dr. N. Ranapratap Reddy, Principal Global Academy of Technology, Bangalore

Dr. Ning Fang, Assoc. Prof., Utah State University, USA

Dr. Peter Fernandes, Principal, AIT, Moodbidri, Mangalore

Dr. Prasad Yarlagadda, Professor, Queensland University of Technology, Australia

Dr. R. Natarajan, Former Director - IIT Madras

Dr. Raj B K N Rao, Editor-in-Chief & Publisher, COMADEM International, UK

Dr. Rajkumar P. Singh, Senior Director, KCTI, Bharat Forge Ltd

Dr. Rangan Banerjee, Professor, Energy Systems Engineering, IIT Bombay

Dr. Ravi Bhate, Scientist-F & Team Leader, CLPM-ARCI, Hyderabad

Mr. S. Gopinath, Advisor-NMAMIT, Former Executive Director – BHEL Trichy

Dr. S. Karunanidhi, Scientist, Control Systems Laboratory Research Centre, Hyderabad

Dr. Satyashankara Sharma, Professor & Head, Dept. Mech & Manu Engg., MIT, Manipal

Dr. Shiv Prakash Singh, Scientist-D, Centre for Ceramic Processing (CCP), ARCI-Hyderabad

Dr. Shripad P Mahulikar Professor Dept. Of Aerospace Engg., IIT-Bombay

Dr. Srikanth Rao, Professor & Head Mechanical Engineering Department NITK – Surathkal

Mr. V.V. Kamath, Managing Director, Fronius India Private Limited, Pune

Dr. Yeong-Do Park, Professor, Dong-Eui University, Busan, South Korea

Technical Committee:

- Dr. A V Raghu**, Professor, Jain University
Dr. Abhinav K Nair, Assistant Professor, Amal Jyothi College of Engineering, Kottayam
Dr. Amith Jones, Assistant Professor, Dept. of Mechanical Engineering, JNNCE, Shivamogga
Dr. Arun Augustin, Associate Professor, Mechanical Engineering, Christ College of Engineering, Thrissur, Kerala
Dr. Ayub Ahmed Janvekar, School of Mechanical Engineering, VIT University, Chennai
Dr. B K Muralidhar, Professor, NMIT, Bangalore
Dr. B M Rajaprakash, Professor, UVCE, Bangalore
Dr. B. Yogesha, Professor, MCE, Hassan
Dr. Channabasappa Hampali, Professor, Reva University, Bangalore
Dr. Drakshayani D N, Retired Professor, Sirmvit, Mechanical engineering, Bengaluru
Dr. Ezil Vannan, Professor, MCE, Hassan
Dr. Gururaj Upadhyaya, Assoc. Professor, Mech. Engg. Dept., NMAMIT
Dr. H C Chittappa, Professor, UVCE, Bangalore
Dr. Harisha S K, Associate Professor, Department of Mechanical Engineering, RVCE, Bangalore
Dr. J V Simha Numentrix consulting, Bengaluru
Dr. Jayashree D. Mallapur, Basaveshwar Engineering College (Autonomous), Bagalkot
Dr. Kameshwari Devi S H, Professor, Dept of Polymer science and technology, SJCE, Mysore
Dr. Laxmana Naik L, Professor, MCE, Hassan
Dr. M. Rajesh, Assistant Professor, Department of Botany, A.V.C. College (Autonomous), Mayiladuthurai, Tamil Nadu
Dr. Madeva Nagaral, Deputy Manager, Aircraft Research and Design Centre, Hindustan Aeronautics Limited, Bangalore
Dr. Madhu P, Assistant Professor, Department of Mechanical Engineering, Malnad College of Engineering, Hassan
Dr. Mallikappa, Professor, NMAMIT Nitte
Dr. Manjunath S H, Professor, Adichunchanagiri University, Mandya
Dr. Muralidhara, Professor & PG Coordinator, NMAMIT Nitte
Dr. Narasimha Bailkere, Professor, NMAMIT Nitte
Dr. Narasimha Marakala, Professor, NMAMIT Nitte
Dr. Nayaka G P, Scientist, CSIR-National Chemical Laboratory, Pune
Dr. Prakash K R, Professor, Department of Mechanical Engineering, NIE Mysore
Dr. Praveen MP, Director at Numentrix consulting, Bengaluru
Dr. R. P. Swamy, Department of Mechanical Engineering,
Dr. Rajasekaran Saminathan, Assistant Professor, Jazan University, Saudi Arabia, Jazan,
Dr. Rajeshwar. S. Kadadevaramat, Professor, SIT, Tumukur
Dr. Ramesh M R, Associate professor, Department of Mechanical Engineering, NITK, Surathkal
Dr. Ranjit Abraham, Chief Data Scientist, Anna University, Coimbatore
Dr. Satya Narayan, Mech Engg, Institute of Engineering and Technology, Moodbidri
Dr. Sharanappa, Associate Professor, NITK Surathkal
Dr. Shivaprakash Y.M, Associate Professor MIT, MAHE, Manipal
Dr. Srinivas Pai P, Professor & DCOE, NMAMIT Nitte
Dr. Srinivasa C V, Professor & Head, Dept. of Mech Engg, GMIT, Davangere
Dr. Sudesh Bekal, Professor & Dean Research, NMAMIT Nitte
Dr. Sudheer M, Professor & Head Mechanical Engineering, SJEC, Mangalore
Dr. Sudheer Reddy, Professor and HoD, NMIT, Bangalore
Dr. Sumana B G, Associate professor, Government Engineering College, Hassan
Dr. Suresh L, Principal, Cambridge Institute of Technology, Bangalore
Dr. Vignesh Nayak Ullal, MITE, Moodbidre, Mangalore

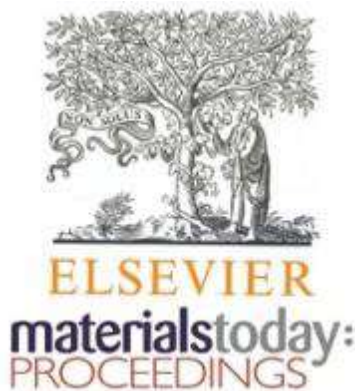
Dr. Vijay GS, Associate Professor, Dept of Mechanical and Manufacturing Engineering, MIT, Manipal

Important Dates

Submission of Full-length manuscript – Open	: 01/05/2021
Last date to Submit Full-length manuscript	: 01/08/2021
Notification of acceptance	: 20/08/2021
Submission of camera-ready manuscript	: 01/10/2021
Last date for registration	: 05/11/2021

Publishing Partners

All presented and accepted papers from the conference will be published in indexed journal of **Elsevier- Material Today Proceedings (Scopus)**. The papers will go through a stringent review process by the journal and only papers that pass these checks will be published.



The authors are requested to follow the instructions of the journal and prepare the manuscript accordingly with the help of templates.

Materials Today Proceedings:

<https://www.elsevier.com/journals/materials-today-proceedings/2214-7853/guide-for-authors>

NOTE: Before Submitting the paper make sure that the plagiarism is less than 20%

Conference Registration

Kindly fill the registration form attached along with the conference brochure and email it to the conference coordinators. For more information kindly visit the conference website.

Registration Fees

Category	Registration Fees	Publication Charges
Faculty/Researchers (UG/PG/PhD)/Industry	3500	No additional publication charges
Late Registration Fees	4000	
International Delegates	\$200	

Mode of Payment

Registration fee can be paid through NEFT as per the details given below:

Name : NITTE EDUCATION TRUST

Account Number: 01152200011460

Type of account : Savings Bank

Bank : Canara Bank

IFSC : CNRB0010115

MICR Code : 576015041

NOTE: Delegates must mention their NAME and SME-2021 without fail during online payment. The proof of online transfer (UTR No., date & time, Scan copy) needs to be uploaded in the registration portal.

Accommodation

Accommodation with nominal charges will be provided on twin sharing basis in the institute hostel on prior request depending on the availability and first come first serve basis.

Conference Location

Nitte is a village in Karkala taluk of Udupi district, India. Nitte is on the state highway from Padubidri to Kudremukh. It is 8 km away from Karkala, 36 km from Udupi, and 54 km from **Mangaluru**. It is

located on the foothills of the Western Ghats Mountains and receives an annual rainfall of around 4830 mm. The state highway SH-1 cuts across Nitte which connect to the National Highway NH-66 at Padubidri and NH-13 near Karkala. There is an ample number of tourism destinations near Nitte. To name a few:

- Sri Krishna Math, Udupi
- Beach, Malpe
- Thousand Pillar Temple, Moodbidri
- Chaturmukha Basadi, Karkala
- Attur Church, Karkala
- Durgaparameshwari Temple, Katil
- Lighthouse, Kaup



Contact Details

Dr. Shashikantha Karinka

Professor & Head

Email: shashikanth@nitte.edu.in

Mob: +91-8970915301/9890160844

Dr. Rashmi Shetty

Assistant Professor

Email: iprashmi@nitte.edu.in

Mob: +91-9448529222

Dr. Nithin Kumar

Assistant Professor

Email: nithinmech33@nitte.edu.in

Mob: +91-9535621260

Dr. Veerasha R K

Assistant Professor

Email: veereshark@nitte.edu.in

Mob: +91-9164458291

Department of Mechanical Engineering,
NMAM Institute of Technology, Nitte - 574110,
Karkala Taluk, Udupi District (Karnataka State), India.



**3rd INTERNATIONAL CONFERENCE ON
Smart and Sustainable Developments in Materials,
Manufacturing and Energy Engineering
(SME-2021)**

E-Conference (Online Mode)

**(Under the Aegis of ICETE 2021 Multi-Conference
Platform)**

November 19 - 20, 2021

To

.....
.....
.....
.....



(An Autonomous Institution affiliated to VTU, Belagavi)
Nitte – 574 110, Karkala Taluk, Udupi District, Karnataka, India
ISO 9001:2015 Certified, Accredited by UGC NAAC with ‘A’ Grade
Phone: +91 8258 281264; Fax: +91 8258 281265
Website: <http://nmamit.nitte.edu.in>



NITTE
EDUCATION TRUST

**NMAM INSTITUTE
OF TECHNOLOGY**

(An Autonomous Institution affiliated to VTU, Belagavi)

Nitte – 574 110, Karkala Taluk, Udipi District, Karnataka, India
ISO 9001:2015 Certified, Accredited by UGC NAAC with 'A' Grade

Phone: +91 8258 281264; Fax: +91 8258 281265

Website: www.nmamit.nitte.edu.in/

Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering (SME 2021)

E-Conference (Online Mode)

(Under the Aegis of ICETE-2021 Multi-Conference Platform)

19 – 20 November 2021

Registration Form

Name :

Designation :

Department :

Institution :

Registration for:

Indian Foreign

Payment Details:

DDDetails: DD No: Date:

Bank:

NEFTDetails: NEFT ID: Date:

Accommodation required: Yes / No

Mobile No :

Email ID :

Date:

Place:

Signature of the participant

Signature&Sealofthe HeadoftheInstitution/Organization