



Koneru Lakshmaiah Education Foundation

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Department of Mechanical Engineering

International Conference on Innovations and Challenges in Mechanical Engineering (ICICME-2025) Report

Brochure

PUBLICATION

The proceedings containing the abstracts of all accepted papers will be released on the first day of ICICME-2025 with ISBN number. Furthermore, all selected papers will undergo peer review by experts from specialized areas. All accepted papers will be published in Scopus, WOS journals according to their preferences. Journals will be listed in the conference website along with article processing charges.

Registration Process

Participants can register through the Link: <https://forms.gle/EjIESUYLsA9QbpkNA>

The registration process includes filling out the online form, uploading necessary documents, and paying the applicable fees.

Important Dates:

Full paper Submission Deadline: 20th April 2025
Notification of Acceptance : 25th April 2025
Final Paper Submission : 30th April 2025
Registration Deadline for authors: 30th April 2025

Advisory Committee & Editorial Board

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Dr. K. V Narasimha Rao Dr. NBV Prasad
Dr. A Srinath Dr. P. V. Chalapathi

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Dr T Vijaya Kumar, Dept. Chair, ME, KLEF

Conveners

Dr. D. V. A. Rama Sastry, KLEF
Dr. S. N. Padhi, KLEF

Co-Conveners

Dr. S. S. Rao, KLEF

Dr. G. Murali, KLEF

Key Note Speakers

- Dr T Ram Prabhu, Joint Director - DRDO, CEMILAC, Bengaluru, India
- Dr. N. Siva Shanmugam, Professor, NIT, Trichy, INDIA.
- Dr M Ravinsankar, IIT Tirupati, India
- Dr V Panduranga, IIT Bhubaneswar, India
- Dr Pradeep Dixit, IIT Bombay, India
- B S Ramesha, Head of Academic Initiatives at Altair, Hyderabad, India
- Prof. Mark James Jackson, Kansas State University, USA
- Dr. Jayantha Ananda Epaarachchi, University of Southern Queensland, Australia
- Dr. Okokpuike Princess, Afe Babalola University, Nigeria.

For further details contact:

Dr K Saisarath - 9966172003
Dr Priyaranjan Samala - 9937402318

International Conference

on Innovations and

Challenges in Mechanical

Engineering

ICICME-2025

(Hybrid Conference)

12th & 13th May 2025



Organized by

Department of Mechanical Engineering,
Koneru Lakshmaiah Education

Foundation (KLEF)

Venue: KLEF Campus, Vaddeswaram,
Guntur,
Andhra Pradesh, India - 522 302



Department of
Mechanical Engineering

RECOGNIZED AS UNIVERSITY | 45 YEARS OF LEARNING LEADERSHIP | mif22 AMONG ALL UNIVERSITIES

About the Conference

The global shift towards sustainability has placed a heightened focus on innovation in engineering design and manufacturing practices. The "International Conference on Innovations and Challenges in Mechanical Engineering ICICME-2025" aims to provide a dynamic platform for researchers, academicians, and industry professionals to share groundbreaking insights and novel approaches in these critical areas.

Conference Themes

The conference invites submissions in, but not limited to, the following areas:

- Sustainable Manufacturing Design
- Smart Manufacturing Systems
- Industry 4.0 and Beyond
- Renewable Energy and Green Technologies
- Digital Transformation in Engineering
- Materials for Sustainability
- Advanced Simulation and Computational Methods

This conference will foster interdisciplinary collaboration and inspire transformative ideas to shape a sustainable future.

About University

Koneru Lakshmaiah Education Foundation (KLEF), deemed to be a university, is one of India's leading institutions for higher education. Located in Vijayawada, Andhra Pradesh, KLEF is known for its multidisciplinary approach and commitment to academic excellence. The university fosters innovation and entrepreneurship, empowering students to excel in both academics and industry.

Key features of KLEF:

- Ranked among the top universities in India.
- Strong emphasis on research and development.
- Extensive international collaborations and exchange programs.
- Vibrant campus life with modern infrastructure.

About the Department

The Department of Mechanical Engineering at KLEF is a hub for excellence in education, research, and innovation. Equipped with state-of-the-art laboratories and research facilities. The department is actively involved in areas such as smart manufacturing, advanced materials, energy systems, and computational mechanics.

Key highlights:

- Faculty members with vast experience and publications in reputed journals.
- Cutting-edge research in sustainable design and manufacturing.
- Active collaboration with industries and academic institutions worldwide.
- Strong focus on skill development, consultancy, and technology transfer. The department takes pride in nurturing professionals who contribute significantly to the global engineering community.

CALL FOR PAPERS

Authors are invited to submit original and unpublished research papers presenting innovative ideas on a wide range of topics, including but not limited to conference theme. The acceptance of papers will be based on the recommendations of the peer review committee, and authors will be notified accordingly.

Guidelines for Preparation & Submission of Paper:

- Paper should be submitted in standard A4 size sheets.
- Font: Times New Roman
- Margins: Left = 1.5 Inch, Right, Top & Bottom = 1.0 Inch
- Abstract: 11 Point Italic with single line spacing to be placed after title and other details
- Keywords: 4 (Four)
- Text: 12 Point normal justified,
- Paragraph heading: 12 Point Bold Sentence case
- Spacing = 1.5 lines
- Figures to be inserted in jpg format
- At least one of the authors is required to register and attend the conference for presenting the paper
- E-mail of the corresponding author should be given.
- Link for paper submission:
<https://forms.gle/SipxgX7Y7BagPBXv9>

Registration Fees

Category	Conference Registration fee
Students (UG/PG)	INR 1,000
Academicians & PhD Scholars	INR 1,500
Industry Professionals	INR 2,000
International Participants	USD 35

- For Paper publication, a separate fee will be applicable as per the journal.



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Invitation





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ICICME - 2025

International Conference on
Innovations and Challenges in
Mechanical Engineering
12th and 13th May 2025
Keynote Speakers



Dr. M. Mutyala Rao
Scientist, VSSC, ISRO,
India



Dr. Okokpuije Imhade Princess,
Professor
Afe Babalola University,
Nigeria



Mr. B. S. Ramesha
Head - Academic
Initiatives
Altair, Hyderabad, India



Prof. Mark J. Jackson
Cavendish Laboratory,
University of Cambridge,
UK and Space Science
Institute, USA



Dr. Shiva Rudraraju
Associate Professor,
Mechanical Engineering,
University of Wisconsin-
Madison, USA



**Dr. N. Siva
Shanmugam**
Professor, Mechanical
Engineering
NIT Trichy, India

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Assoc. Professor, ME, KLEF

Dr. P R Samal
Asst. Professor, ME, KLEF

Dr. P Raj Kumar
Asst. Professor, ME, KLEF

Dr. K Sai Sarath
Asst. Professor, ME, KLEF

Organised by: Department of Mechanical Engineering,
Koneru Lakshmaiah Education Foundation (KLEF)

Day-1 (12-05-2025)

Inaugural Session Report

International Conference inaugural function started at 10:00 A.M. Convenor Dr. D.V.A Rama Sastry invited another Convener, Co-Convenors, Faculty, Students and participants for conference and then Conference chairs Dr. T. Vijaya Kumar and Dr. B. Nageswara Rao addressed about Conference. Convener presented details about keynote speakers of ICICME-2025. Total 6 Keynote lecture sessions planned on these 2 days conference. Total 46 papers accepted for presentations after review. 46 participants are going to present their research work.



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Speaking: Dr DVA Ramasastri

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- Dr. K. V. Durga Rajesh Me • Unverified
- CR083 Cohost
- Dr DVA Ramasastri Host, pre... • Unver... (1)
- 1441 VIJAYA KUMAR TA...
- 1767 RAMESH KUMAR S...
- chinmaye sai kolla Unverified (1)
- DIWAKAR Unverified (1)
- Dr. B KIRAN KUMAR Unverified (1)

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In meeting - Meeting - Webex

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- 1767 RAMESH KUMAR S...
- 2520 ME Dr.K.V.Durga R... kluniversity.in
- Diwakar Unverified (1)
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Speaking: CR083

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- 2520 ME Dr.K.V.Durga R... kluniversity.in
- Diwakar Unverified ①
- Dr. B KIRAN KUMAR Unverified ①
- Dr.B.Nageswara Rao Unverified ①

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Participants (25)

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- CR083 Cohost
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- 1767 RAMESH KUMAR S...
- chinmaye sai kolla Unverified ①
- Diwakar Unverified ①
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Dr K V Narasimha... Unverified

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Dr DVA Ramasastya Host, pre... Unver...

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Diwakar Unverified

Dr. B KIRAN KUMAR Unverified

Dr.B.Nageswara Rao Unverified

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ENG IN 10:12 12-05-2025

Department of Mechanical Engineering ICICME – 2025

Event	Date	Time (IST)
1 Dr M Mutiyala Rao, Vikram Sarabhai Space Centre, ISRO	12-05-2025	11.15am to 12noon
2 Engr. Dr. (Mrs) Okokpuije Imhade Princess, Afe Babalola University, Nigeria	12-05-2025	12.00 to 12.45pm
3 B S Ramesha, Head of Academic Initiatives at Altair, Hyderabad, India	12-05-2025	2 pm to 2.45pm
Paper presentation by participants	12-05-2025	3 pm to 5pm
Prof. Mark J. Jackson,	13-05-2025	9.30am to 10.15am
4 Physics and Chemistry of Solids, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom.		
Dr Shiva Rudraraju, Associate Professor, Dept. of Mechanical Engineering	13-05-2025	10.15am to 11am
5 Fellow, Grainger Institute for Engineering		
University of Wisconsin-Madison, USA		
Paper presentation by participants	13-05-2025	11am to 1pm
6 Dr. N. Siva Shanmugam, Professor, Dept. of ME, NIT, Trichy, INDIA.	13-05-2025	2pm to 2.45pm
Paper presentation by participants	13-05-2025	3 pm to 4.30pm
Valedictory	13-05-2025	4.30 pm

ICICME-2025

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Dr K V Narasimha... Unverified

Dr DVA Ramasastya Host, pre... Unver...

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Diwakar Unverified

Dr. B KIRAN KUMAR Unverified

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ENG IN 10:13 12-05-2025

International Conference on Innovations and Challenges in Mechanical Engineering – ICICME 2025

Keynote speakers

Dr. M. Mutiyala Rao Scientist, VSSC, ISRO, India	Dr. Okokpuije Imhade Princess, Professor, Afe Babalola University, Nigeria	Mr. B. S. Ramesha Head – Academic Initiatives Altair, Hyderabad, India	Prof. Mark J. Jackson Cavendish Laboratory, University of Cambridge, UK and Space Science Institute, USA	Dr. Shiva Rudraraju Associate Professor, Mechanical Engineering, University of Wisconsin- Madison, USA	Dr. N. Siva Shanmugam Professor, Mechanical Engineering NIT Trichy, India
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Principal K L College of Engineering – Dr. T. K. Rama Krishna Rao sir addressed the gathering about the ICICME conference, highlighting its significance and research opportunities for participants.

Convenor Dr. S. N. Padhi sir introduced chief guest of inaugural session Dr. Ch. V. Ram Mohan, Outstanding Scientist (Scientist-H), DRDO, Additional Secretary, National Security Council Secretariat, Govt. of India to deliver his message to participants.



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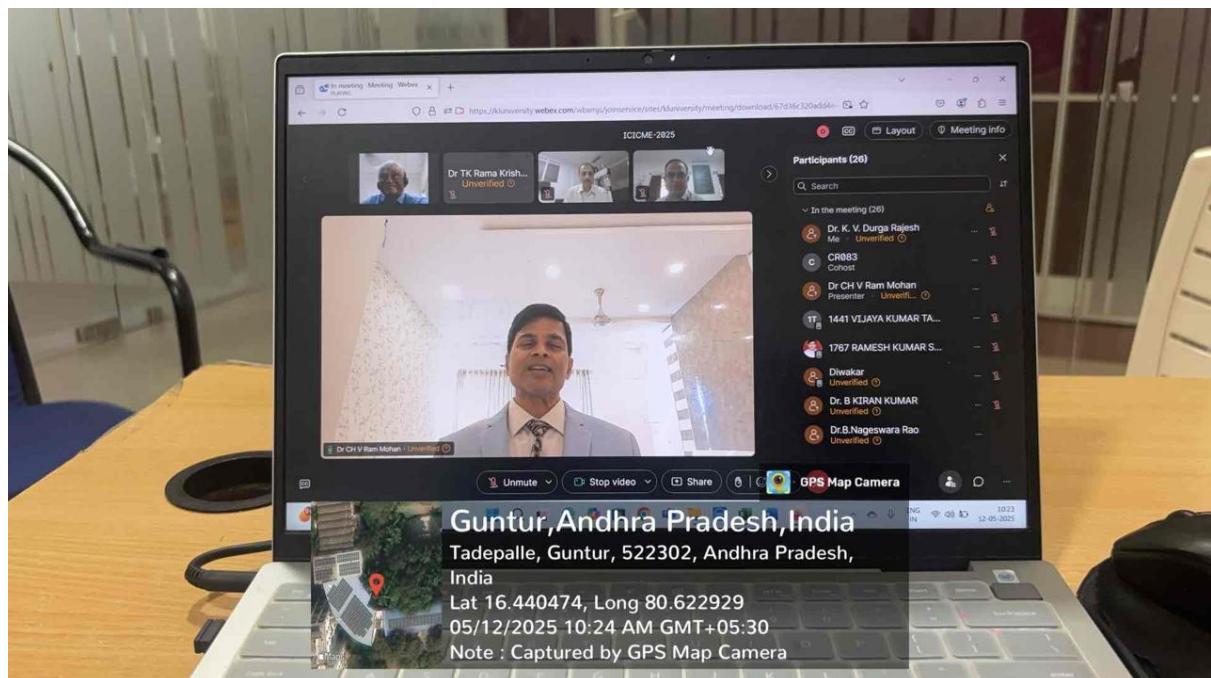
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Dr. Ch. V. Ram Mohan sir delivered a warm welcome address to participants at the ICICME conference, highlighting the event's objectives, significance, and expected outcomes in mechanical engineering research and innovation nationwide.





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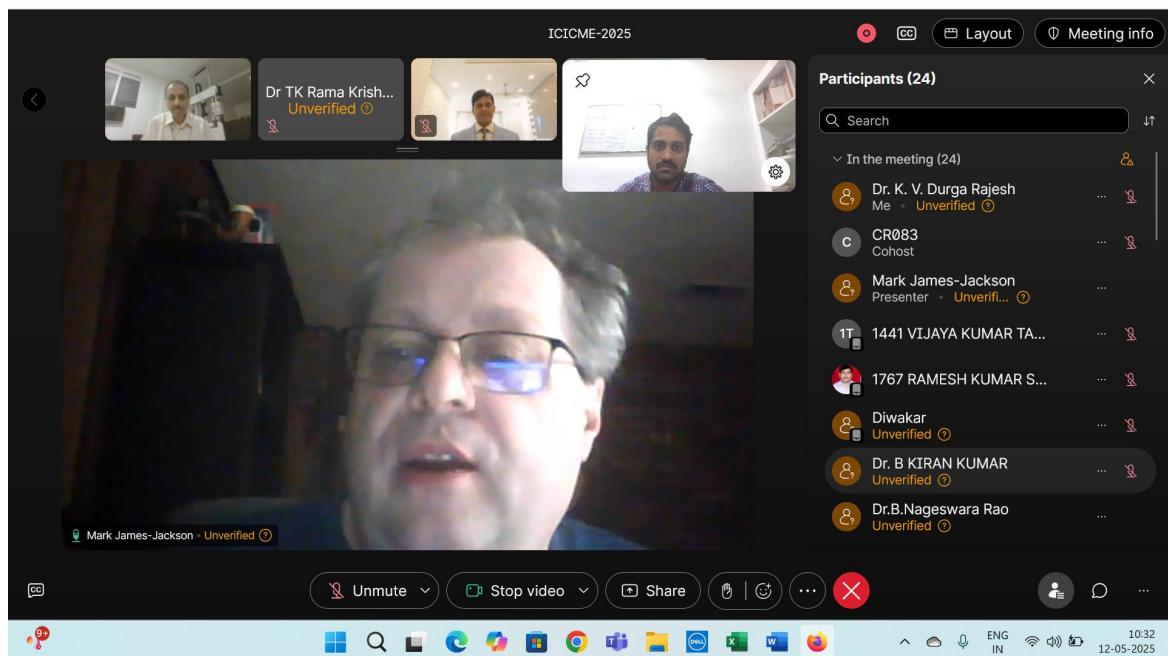
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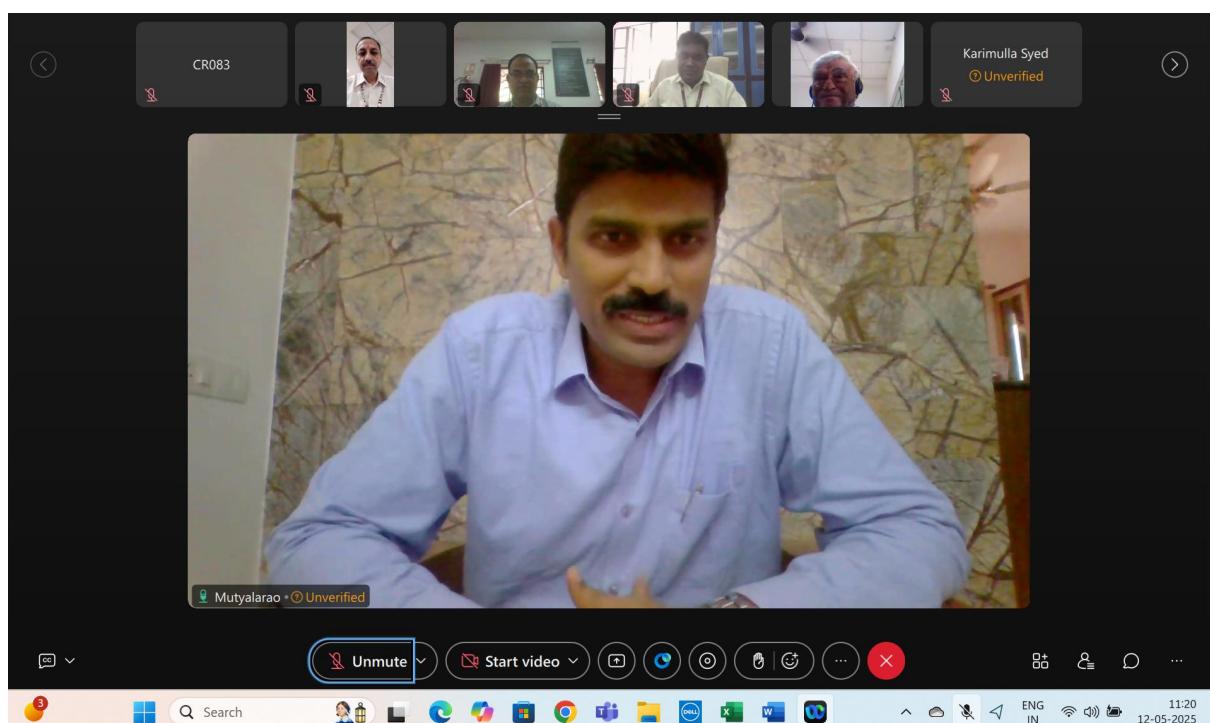
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Prof. Mark J. Jackson, Fryderyk Staub Distinguished Professor and Senior Scientist from University of Cambridge, UK addressed all participants and delivered his message.



Keynote Session-1





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Dr. M. Mutyal Rao, Scientist, VSSC, ISRO delivered keynote address on the topic "Towards a safer orbit: Passive Measures and Predictive models for Debris Risk Management". He discussed about Importance of space debris management, Passive measures for debris mitigation, Predictive models for risk assessment, Challenges and future directions in debris management, Collaborative efforts for sustainable space exploration and development of safety protocols.

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Dr. B KIRAN KU... Unverified

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ICICME-2025

Participants (19)

Participants (19)

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DIWAKAR Unverified

Dr. B KIRAN KUMAR Unverified

Dr.B.Nageswara Rao Unverified

Dr. Imhade Princess ... Unverified

Dr K V Narasimha Rao Unverified

Participants Chat

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Participants (19)

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DIWAKAR Unverified

Dr. B KIRAN KUMAR Unverified

Dr.B.Nageswara Rao Unverified

Dr. Imhade Princess ... Unverified

Dr K V Narasimha Rao Unverified

Participants Chat

Orbital elements

Two-line Elements (Description)

At last, he clarified doubts raised by participants.



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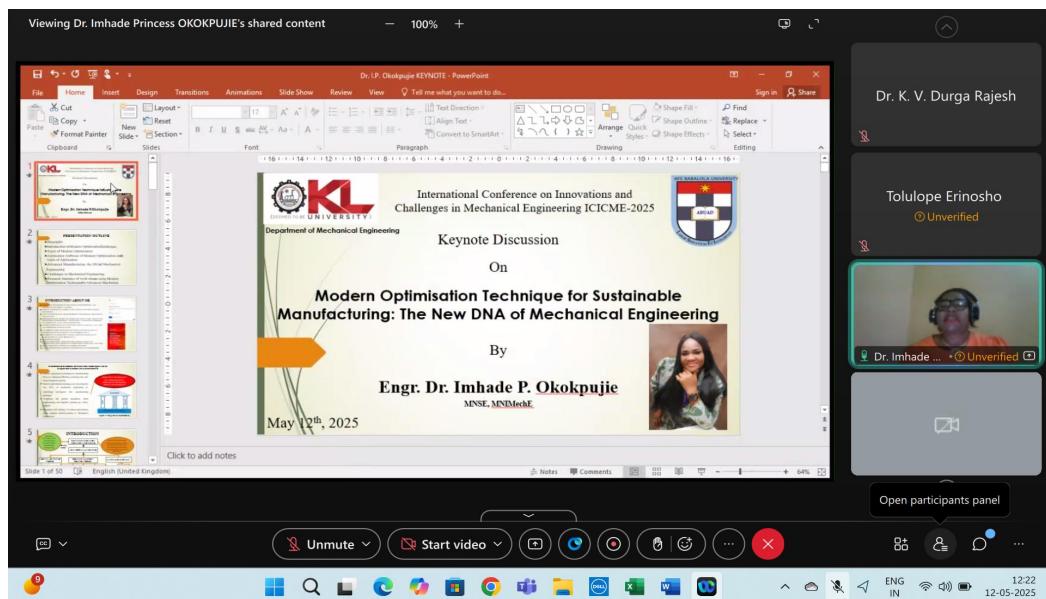
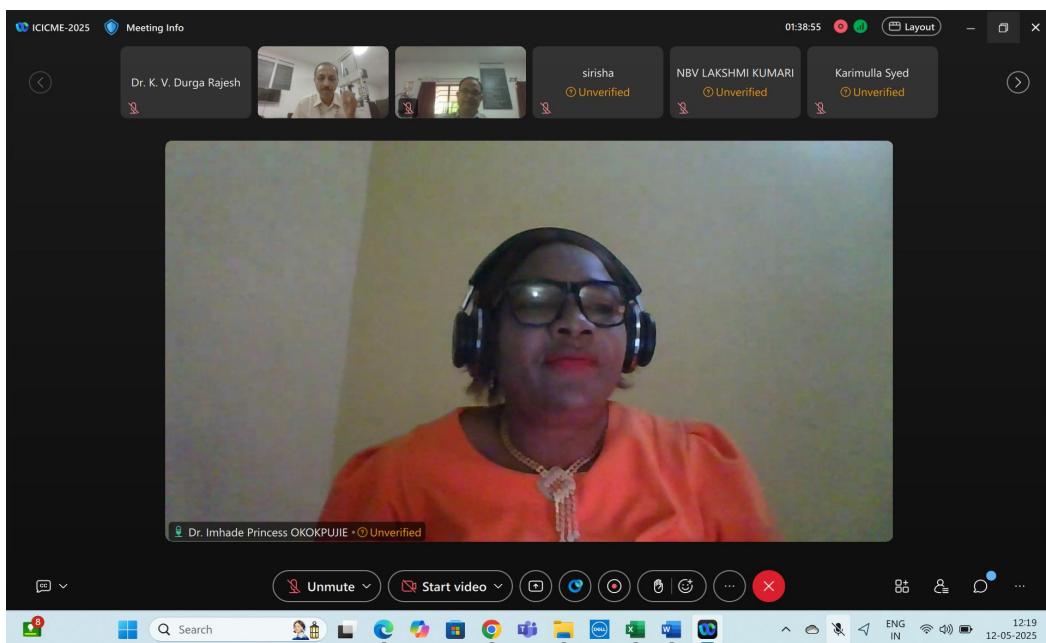
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Keynote Session-2

Dr. Okokpujie Imhade Princess, Professor from Afe Babalola University, Nigeria delivered keynote address on the topic "Modern Optimisation Technique for Sustainable Manufacturing: The new DNA of Mechanical Engineering". She discussed about Role of modern optimization techniques in sustainable manufacturing, Applications of AI, machine learning, and evolutionary algorithms, Enhancing efficiency, reducing waste, and promoting eco-friendly practices, Future directions and industry-academia collaborations for sustainable manufacturing innovations.





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Dr. I.P. Okokpuije KEYNOTE - PowerPoint

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Cut Copy Paste Format Painter New Slide Section... Slides

Layout Reset Convert to SmartArt

Font Paragraph

Drawing Editing

17 18 19 20 21 22 23 24 25 26 27 28 29 30

26 TEM, SEM AND EDS CHARACTERISATION RESULTS OF THE LUBRICANTS

Figure 28: TEM, SEM and EDS analysis of copra oil

Figure 29: TEM, SEM and EDS analysis of the developed MWCNTs nano-lubricant

Figure 30: TEM, SEM and EDS analysis of the developed TiO₂ nano-lubricant

Click to add notes

Slide 29 of 50 English (United Kingdom)

Notes Comments

64% 12:55 12-05-2025

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ENG IN

Dr. K. V. Durga Rajesh

Dr. Imhade ... Unverified

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ENG IN

12:55 12-05-2025

At last, she clarified doubts raised by participants.

Keynote Session-3

The image is a screenshot of a video conference interface. At the top, there are navigation buttons for zooming in and out (100%), a refresh icon, and an 'Annotate' button. The top right corner shows the time as 40:04 and a 'Layout' button. The main content area displays a presentation slide. The slide features a 3D transparent car model on a blue digital grid background. Below the car, the text 'SIMULATION PLATFORM FOR SMART PRODUCT DEVELOPMENT' is displayed in green. The Altair logo, consisting of a red triangle and the word 'ALTAIR' in blue, is located on the left side of the slide. Below the logo, the text 'Ramesha BS- Head - Academic Initiatives' and 'Altair : Part of Siemens Digital Industries Software' is shown. On the right side of the slide, there is a participant list. The first participant is 'Dr. K. V. Durga Rajesh', followed by 'Altair Ramesh...' (status: Unverified) and 'Dr. S.N. Padhi' (status: Unverified). Each participant has a small video thumbnail. At the bottom of the screen, there is a toolbar with various video and audio control buttons, including 'Unmute', 'Start video', and a red 'X' button. The bottom right corner shows the date and time as 14:13, 12-05-2025.

Mr. B. S. Ramesha, Head-Academic Initiatives Altair, Hyderabad delivered keynote address on the topic “Simulation Platform for Smart Product Development”. He discussed about



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Importance of simulation platforms in smart product development, Role of digital twins, AI, and IoT in product design and testing, Enhancing product performance, reducing costs, and accelerating time-to-market, Future trends and industry applications of simulation-driven product development.

How Products have Evolved....

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Front - 150mm Drum brake
Rear - 150mm Drum brake

CONNECTED
Locate your Chetak, receive notifications and updates on your Chetak app.

RIDING RANGE
180 km (EDC as per AIS 040) with new Battery on a full charge in Eco Mode.

Bluetooth Enabled
Geo Fencing
Over the Air updates
Tamper Alert
Locate your Chetak

ALTAIR

Unmute Stop video

ENG IN 14:19 12-05-2025

Scope for Virtual Validation for EV

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01 FV Structural and CFD Validations
Optistruct, Radioss, Motion Solve, Ultra Fluid X, Nano Fluid X

02 Motor Design Validations
Flux, Optistruct, Motion Solve, Acusolve

03 Battery Design Validations
Optistruct, Radioss, Activate [Sendejne], Acusolve

04 Controller/System Design Validations
Activate, Compose, Embed, Pollex

05 Data Intelligence & Management
Knowledge Works, Data Science

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ENG IN 14:26 12-05-2025

At last, he clarified doubts raised by participants.



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Paper presentations on Day-1 (AN)

Track-1

ICICME-2025

Participants (18)

- Dr. P. Raj Kumar
- Dr. S.N. Padhi
- konijeti. sri manikanta
- Muppiri Nitin srinivas
- NBV LAKSHMI KUMA...
- Shaikh Azharuddin
- Somasi Bhargavi

ICICME-2025

Participants (13)

- Dr. K. V. Durga Rajesh
- Dr. B. Nageswara Rao
- Dr. K. V. Durga Rajesh
- P. VIVEKANANDA (ICI...)
- Dr. K. V. Durga Rajesh
- Dr. S. S. Rao
- Dr. K. V. Durga Rajesh
- P. VIVEKANANDA (ICI...)
- Dr. K. V. Durga Rajesh



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Track-2

ICICME-2025 (Paper Presentations)

Participants (11)

Somasi Bhargavi Unverified

Vikrant

Dr V L Mangesh Unverified

DIWAKAR Unverified

V V Krishna Mohan Unverified

Dr.T.Kanthimathi Unverified

Viewing Somasi Bhargavi's shared content

ICICMF – MAY 2025

VIGNAN'S

AI in Robot Perception: Enhancing Navigation and Decision-Making

Authors :
Balakrishna Kunchala
Somasi Bhargavi
Thaduvai Ramya
Meesala Prathyusha

Presented By:
Somasi Bhargavi
Thaduvai Ramya

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ICICME-2025 Meeting Info

Participants (14)

Dr. K. V. Durga Rajesh

Dr S S Rao Unverified

Dr P Raj Kumar kluniversity.in

Muppuri Nithin srinivas Unverified

ANALYSIS OF SHOCK ABSORBER USING POLYURETHANE

M. NITHIN SRINIVAS
2401130004

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Day-2 (13-05-2025)

Page 15 of 21



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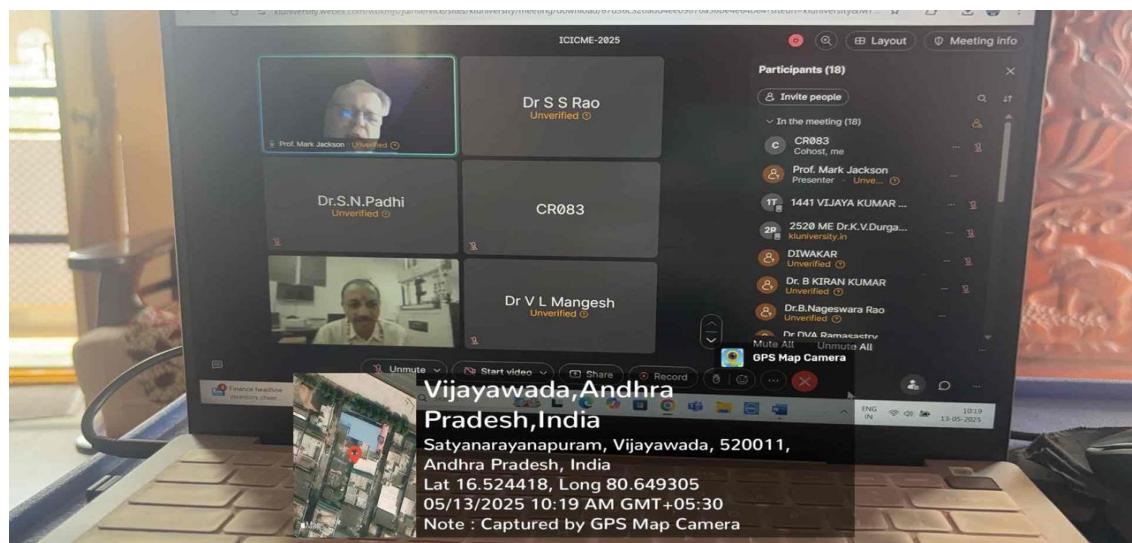
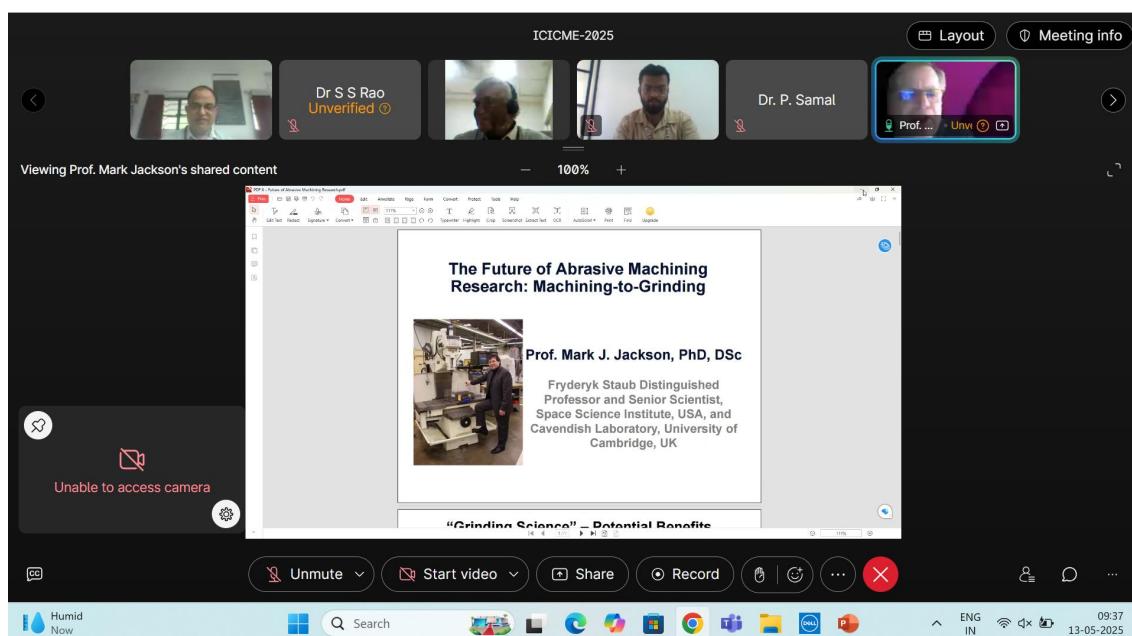
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Keynote Session-4

Prof. Mark J. Jackson, Fryderyk Staub Distinguished Professor and Senior Scientist from Space Science Institute and University of Cambridge, UK delivered his keynote address on the topic "The future of Abrasive Machining Research: Machining-to-Grinding". He discussed about Evolution of abrasive machining research and its applications, Advances in machining-to-grinding technologies, Challenges and opportunities in precision surface finishing, Future research directions and industry implications for improved efficiency and product quality.



At last, he clarified doubts raised by participants.



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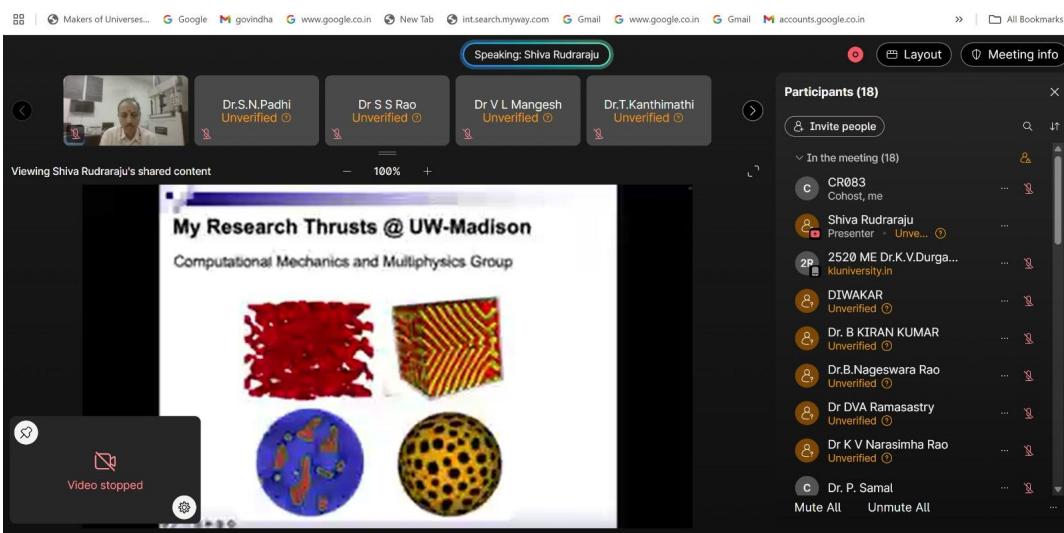
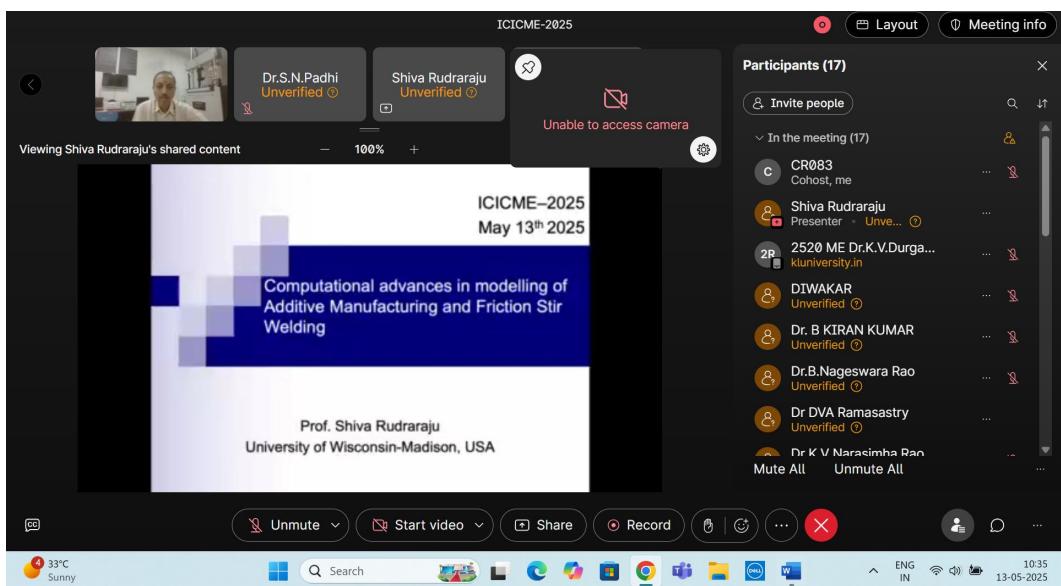
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Keynote Session-5

Professor Shiva Rudraraju from University of Wisconsin-Madison, USA delivered his keynote address on the topic "Computational advances in modelling of Additive Manufacturing and Friction Stir Welding". He discussed on - Advances in computational modeling of Additive Manufacturing and Friction Stir Welding, Numerical simulations for predicting thermal, mechanical, and microstructural behavior, Challenges and opportunities in modeling complex Additive Manufacturing and Friction Stir Welding processes, Future research directions and industry applications for improved process optimization and product quality.



At last, he clarified doubts raised by participants.



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Paper presentations on Day-2 (FN)

Track-1

ICICME-2025

Participants (18)

- Dr K V Narasimha ... Unverified
- Dr.S.N.Padhi Unverified
- Dr S S Rao Unverified
- Dr V L Mangesh Unverified
- sirisha Unverified
- CR083 Cohost, me
- Shiva Rudraraju Presenter + Unve...
- Amol J. Asalekar Unverified
- DIWAKAR Unverified
- Dr. B KIRAN KUMAR Unverified
- Dr.B.Nageswara Rao Unverified
- Dr K V Narasimha Rao Unverified
- Dr P Raj Kumar klu...
- Dr. P. Samal

Video stopped

Computational Modeling of Additive Manufacturing of Metals and Alloys

ICICME-2025

Participants (14)

- PURETI SIVA NAGA ... Unverified
- Dr.B.Nageswara Rao Unverified
- sirisha Unverified
- NBV LAKSHMI KU... Unverified
- CR083 Cohost, me
- PURETI SIVA NAGA ... Presenter + gmail.com
- 1441 VIJAYA KUMAR ... Unverified
- Arvapally Pragnya sree Unverified
- Bala yaswanth sai red... Unverified
- Dr.B.Nageswara Rao Unverified
- Dr P Raj Kumar klu...
- Dr S S Rao Host + Unverified
- Jai Ganesh R Unverified

Video stopped

HDPE Waste to Fuel: A Catalytic Conversion Approach

Authors: Dr V L Mangesh, Jai Ganesh R
Presenting Author: Jai Ganesh R



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Track-2

ICICME-2025 (Paper Presentations)

Participants (11)

- In the meeting (11)
 - CR084 Host, me
 - Arvapally Pragnya sree Presenter + Unver...
 - Amol J. Asalekar Unverified
 - D.NandaKishore Unverified
 - DIWAKAR Unverified
 - Dr.T.Kanthimathi Unverified
 - Karunakanth Unverified
 - konijeti. sri manikanta Unverified
 - T Rajendra Prasad Mute All Unmute All

Participants

Participants (11)

- In the meeting (11)
 - CR084 Host, me
 - Arvapally Pragnya sree Presenter + Unver...
 - Amol J. Asalekar Unverified
 - D.NandaKishore Unverified
 - DIWAKAR Unverified
 - Dr.T.Kanthimathi Unverified
 - Karunakanth Unverified
 - konijeti. sri manikanta Unverified
 - T Rajendra Prasad Mute All Unmute All

Participants

ICICME-2025 (Paper Presentations)

Participants (11)

- In the meeting (11)
 - CR084 Host, me
 - T Rajendra Prasad Presenter + Unver...
 - Anirudh Unverified
 - Arvapally Pragnya sree Unverified
 - D.NandaKishore Unverified
 - DIWAKAR Unverified
 - Dr.T.Kanthimathi Unverified
 - HASEEB AHMED Unverified
 - Karunakanth Unverified
 - Mute All Unmute All

Participants



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Keynote Session-6

Dr. N. Siva Shanmugam, Professor in Department of Mechanical Engineering, NIT Trichy presented his keynote address on the topic "Role of Wire Arc Additive Manufacturing in Product Development". He discussed about Wire Arc Additive Manufacturing (WAAM) benefits and applications in product development, Advantages of WAAM over traditional manufacturing methods, Challenges and limitations of WAAM, Future directions and potential industry applications for complex component fabrication and repair, highlighting WAAM's potential for innovation and efficiency.

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SIVA SHANMUGAM N Unverified

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Dr. N. Siva Shanmugam Professor, Mechanical Engineering NIT Trichy, India

Key note talk at 2pm

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Dr. S.N.Padhi Unverified

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Dr. N. Siva Shanmugam Professor, Department of Mechanical Engineering National Institute of Technology Trichy - 630 015 Email: siva@nittr.edu Mobile: 943649278

National Institute of Technology, Trichy

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At last, he clarified doubts raised by participants.



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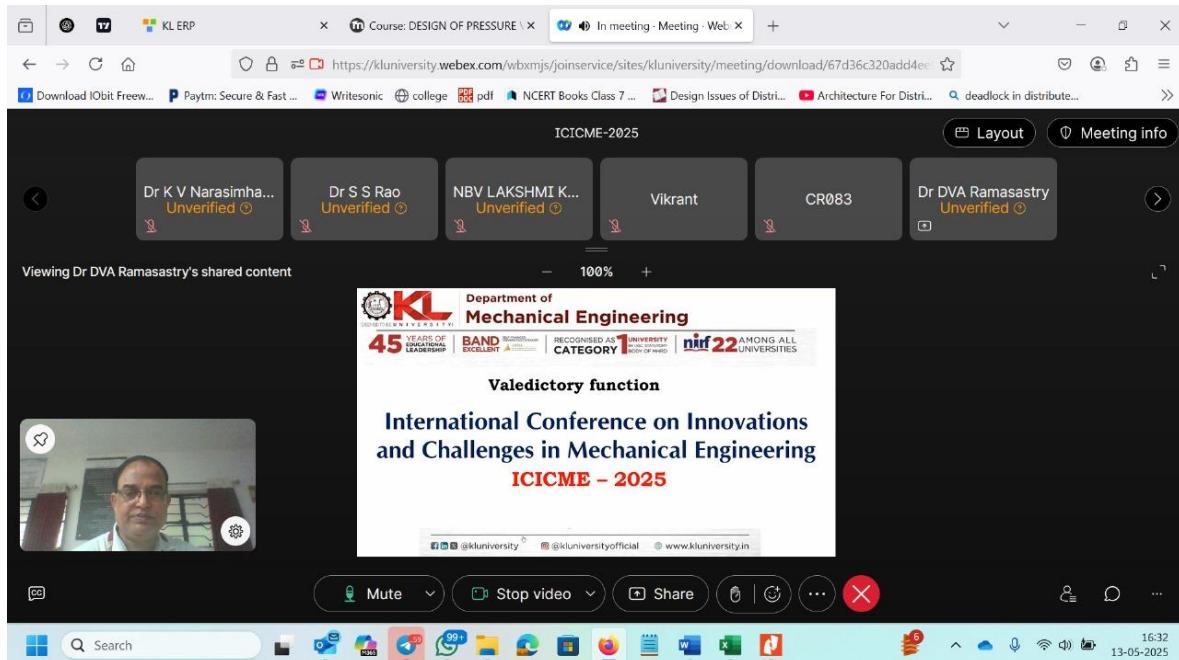
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At the end of conference, during valedictory function Vote of thanks presented by Dr. S. N. Padhi and feedback collected from participants.



Prepared by

Approved by