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# MECHANEWS

NEWS LETTER, DEPARTMENT OF MECHANICAL ENGINEERING NIT CALIGUT. KERALA

NewsLetter

# **Editor-in-chief's Message**

"I am very happy to release the Third Issue of MECHNEWS. This issue summarizes the programs and projects in which faculty, students and alumni of the Department of Mechanical Engineering, NIT Calicut were actively involved during January - December 2021. I thank the editorial board members for their support and suggestions. Special thanks to Dr. Vikash Kumar, Assistant Professor, Department of Mechanical Engineering and the students of the Mechanical Engineering Association for their services in bringing out this issue of the newsletter. Suggestions to improve the content and presentation are most welcome."



Happy reading! Dr. R. Sridharan

# **Highlights**

- Dr. C. Muraleedharan, Professor (HAG) took charge as Head of the Department of Mechanical Engineering on 22-07-2021 after the two-year term of Dr. Jose Mathew, Professor (HAG).
- Dr. S. Jayaraj, Professor (HAG) retired from the services of NITC on superannuation on 30-06-2021.
- Mechanical Engineering Association bid adieu to the batch of 2021 on 23-06-2021.

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**DEPARTMENT OF MECHANICAL ENGINEERING** 





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#### Patents and Copyright

Dr. Sudheer A.P., Ajith. A.M. and HariPrasanth, Robotic Tree Climber, 202141013008 25/03/2021 Published 02/04/2021.

# Conferences/Summer/Winter School/Short-term Courses/Workshops conducted:

A 5-day STTP on the topic "Application of MCDM Methods in Logistics and Transportation Engineering" (MMLT 2021) was conducted by Dr. Devendra K Yadav. on December 1 -5, 2021.

A series of lectures on "Roadmap for Effective Research using Advanced Techniques & Tools"

(REAT 2022) was conducted by Dr. Sandip Budhe on 14-18 February, 2022

An Online workshop on "3D Printing Solutions for Medical Innovation (3DPSMI2021)" MED NIT

Calicut was conducted by Dr. Jose Mathew, Dr. Deepak Lawrence, and Dr. Basil Kuriachen on July 17-18, 2021



#### Expert lecturers delivered in Conferences/Seminar/workshops:

Dr. Sudheer A.P. delivered a lecture on "Rashtriya Krishi Vikas Yojana Remunerative Approaches for Agriculture and Allied Sector Rejuvenation(RAFTAAR) KAU-Agri-Business Incubation (RABI)) organized a national Symposium on 'Doubling farmers income by revitalizing Agri-Business Ecosystem'" Dated 2nd march 2022, Kerala Agricultural University.

Dr. Sumer Dirbude delivered a lecture on "Introduction and Application of Computational Fluid Dynamics, Heat and Mass Transfer in Manufacturing Processes" dated 18th September 2022, Poornima College of Engineering Jaipur, Rajasthan (India).

Dr. Vinay V. Panicker delivered Online Faculty Development Programme on "Design and Analysis of Experiments" from 7th February to 8th February 2022, Government College of Engineering, Kannur.

Dr. Vinay V. Panicker delivered an expert Talk on "Logistics and Supply Chain Management" from 8th March to 10th March 2022, Government Engineering College Thrissur.

Dr. Vinay V. Panicker delivered an Online Course on "Recent Trends in Logistics and Supply Chain Management" 8th March 10th March 2022, Government Engineering College Thrissur.

Dr. Ashesh Saha AICTE sponsored an online Short Term Training Program dated 4th May 2022 at the Department of Mechanical Engineering, Misrimal Navaiee Munoth Jain Engineering College, Chennai - 97, India.

Dr. Dhanish P B Handled the session Fractional Factorial Experiments in the training program on Design and Analysis of Experiments 07/02/22 to 12/02/22 GEC, Kannur.

Dr. Dhanish P B delivered a talk on Factorial Design in the FDP on Design of Experiments and Optimization Techniques from 18/10/21 to 23/10/21 SRMIST, Kattankulathur.

Dr. Dhanish P B delivered a talk on Fractional Factorial Designs in the FDP on the Design of Experiments and Optimization Techniques from 9/8/21 to 13/08/21 Jyothi Engineering College, Cheruthuruthy, Thrissur.

Dr. Vineesh K P delivered a Short-term training program on "Finite Element Methods Design In Ansys, And Abaqus" 5 days, December 2020 at Vidya Academy Of Science And Technology In Engineering.

Dr. Vineesh K P delivered a Faculty Development Program on "Theoretical Foundations Of Fem And Hands-On Training On Ansys", 5 Days, February 2020 at Government Engineering College Palakkad.



#### Expert lecturers delivered in Conferences/Seminar/workshops:

Dr. Vineesh K P FIVE-DAYS delivered an Online Workshop Under Teqip-Iii (RTU-ATU) On "Finite Element Methods (Fem) For Engineers" 5 Days, December 2020 at Rajasthan Technological University Kota.

Dr. Ashesh Saha delivered a Faculty Development Programme on "Physical Systems and Mathematical Modelling (PSMM-2022)" on 29th January 2022, Department of Mathematics and Department of Physics, National Institute of Technology Calicut, 42 Kerala - 673601, India.

#### PhD Thesis Defended

Mr. Akhil V M, P150058ME completed his Ph.D. with dissertation in "Design, development and control of a pneumatically activated human locomotion system" under the guidance of Dr P.K.Rajendrakumar & Dr. K.S. Sivanandan.

Mr. Ambika P S, P140011ME completed her Ph.D. with dissertation in "Remaining useful life prediction of rolling element bearings using artificial intelligence" under the guidance of Dr. P K Rajendrakumar Dr. Rijil Ramchand.

Mr. Derick Abraham, P140080ME completed his Ph.D. with dissertation in "Analysis anddesign of coaxial type inertance pulse tube cryocoolers with electro-magnetically driven linear resonating compressor" under the guidance of Dr. Biju T. Kuzhiveli.

Mr. Jiju V Elias, P160002ME completed his Ph.D. with dissertation in "Investigations on improving the machining performances in micro turning of ti-6al-4v" under the guidance of Dr.Jose Mathew.

Mr. Eby David, P110030ME completed his Ph.D. with dissertation in "Investigation into grinding of al/sicp metal matrix composites and development of an intelligent grinding advisory system" under the guidance of Dr. R. Manu.

Mr. Ajyuk J. Raj (P130086ME) completed his Ph.D. with Dissertation in "Modelling and Analysis of Integrated Airline Scheduling" under the guidance of Dr. R. Sridharan and Dr. Vinay V. Panicker.

Mr. Rajesh Kana S, P130054ME completed his Ph.D. with dissertation in "Experimental investigations of biodiesel from waste avocado and its diesel blends as a fuel in diesel engines" under the guidance of Dr. A Shaija.

Mr. Shaiju M.R., P110091ME completed his Ph.D. with dissertation in "Performance analysis and diagnosis of industrial gas turbine systems using ANN" under the guidance of Dr. Arun.P & Dr. S. Jayaraj.

Mr. Mervin Joe Thomas, P170047ME completed his Ph.D. with dissertation in "Development of a six degree of freedom parallel manipulator for contactless applications" under the guidance of Dr. M L Joy and Dr. A P Sudheer.



#### PhD Thesis Defended

Mr. Rakesh Erappa Jinaga, P160037ME completed his Ph.D. with dissertation in "Synthesis of Organic Oils Blended Magnetorheological Fluids and their Application in Braking System" under the guidance of Dr.Jagadeesha T.

Mr. Gowthaman, P170099ME completed his Ph.D. with dissertation in "Experimental investigation on the effect of tool nomenclature and machining conditions on the machining and material behavior during end milling of nimonic 263 alloy" under the guidance of Dr. Jagadeesha T.

Mr. Rahul S Arackal completed his Ph.D. with dissertation in "Effect of plate length and surface roughness on the flow and aeroacoustic characteristics of wall jets" under the guidance of Dr. T.J. Sarvoththama Jothi.

Mr. Eldose K K (P120015ME) completed his Ph.D. with Dissertation in "Development and Application of Predictive Models for Students Academic Performance in Higher Education Institutions" under the guidance of Dr. R. Sridharan and Dr. K. Ratna Kumar.

Mr. Jobin M V, P110076ME completed his Ph.D. with dissertation in "Modelling and analysis of the implementation of lean manufacturing" under the guidance of Dr. T. Radha Ramanan & Dr. R. Sridharan.

Mr. Anand Krishnan N, P160001ME completed his Ph.D. with dissertation in "Modelling and experimental investigation on micro endmilling of inconel 718" under the guidance of Dr. Jose Mathew.

Mr. Remil George Thomas, P110056ME completed his Ph.D. with dissertation in Feature recognition from step ap 242 files for computer aided fixture design of prismatic parts under the guidance of Dr. R. Manu & Dr. Deepak Lawrence K.

#### Research Projects and Consultation Works

1	Experimental Investigations and Electro-Thermal Modelling of Electrode Wear Compensation in Micro Electric Discharge Machining (µEDM) of Shaped Holes on Super Alloys for Improving the Dimensional Accuracy and Functional Performance of Cooling Holes on Turbine Blades and Vanes		ARDB	2021	17.17 Lakhs	On going
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# Research Projects and Consultation Works

2	Numerical study of mixing in T-junction and Dilute Gas-Droplet Flows with Evaporation	Dr. Sumer Dirbude	SERB	2021	50,000	Complet ed
3	Development of  Kitchen Layout for paraplegic people	Dr. Ratna Kumar K	SERB	2019	26,75,120	ongoing
4	Agglomeration Abatement in Fluidised Bed Gasification of Ligno-cellulosic Biomasses	Dr. Arun P and Dr. C Muraleedharan	SERB	2021	32,01,240	Ongoing
Ę	One Ph.D. Fellowship Grant	Dr. Sudheer A P	IITPKD Technology IHub foundation	2021 Decemb er		Ongoing
6	Acoustic Emissions from a Premixed Flame propagating in a Tubular Combustor	Dr. T.J. Sarvoththama Jothi	SERB-CRG	2021	23,32,000	Ongoing



# Institute-Industry Collaboration:

SI. No.	Name	Firm & Description of the work	
1.	CIDAC	3D Printing	
2.	MVR Cancer Centre	3D Printing	
3.	Baby Memorial Hospital, Calicut	3D Printing	
4.	BARC Mysore	Roughness and profile measurement	
5.	Govt. Dental College Calicut	Roughness and profile measurement	
6.	MES Dental College	Roughness and profile measurement	
7.	KMCT Dental College	Roughness and profile measurement	
8.	NIFFT	Roughness measurement	
9.	King Khalid University (KSA)	King Khalid University (KSA), Roughness and profile measurement	
10.	Corelaed Technologies	Corelaed Technologies, 3D printing	
11.	Saintgits College of Engineering Kottayam	Roughness and profile measurement	
12.	Combat Vehicles Research & Development Establishment (CVRDE)	Characterization using Four ball tester	
13.	Vimal Jyothi Engineering College, Jyothi Nagar, Chemperi, Kannur, Kerala	Hands on training on Supply Chain Management simulation using 'Supply Chain Role Play Game' developed in-house.	
14.	HLL Management Academy, Thiruvananthapuram.	Hands on training Supply Chain Operation Simulation conducted for the participants of International Training Programme on "Procurement Management in Healthcare Sector" based on the software package, 'Supply Chain Role Play Game' developed inhouse.	
15.	CMTI, ARCI, RRCAT	Actively involved in academic collaboration with them and the signing of agreement/MoU is in the final stages	
16.	TATA Motors	M Tech Collaborative project work.	
17.	PK Steel Industry	Steel material testing	



#### **MED Alumini Webinar Series**

The webinar series started on October 6th



# SPEAKERS' TOPICS

Mechanics inspiration for learning and control Dr. Akella Maruthi Ram

How NITC prepared me for life ahead Mr. Sebi Joseph

Nuclear reactors in India: Advances and oppurtunity Mr. A. K. Balasubramanian

Fast & Furious 21:

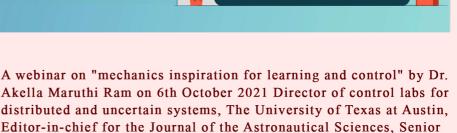
Accelerating career in transforming mobility industry Mr. Anant Kamat

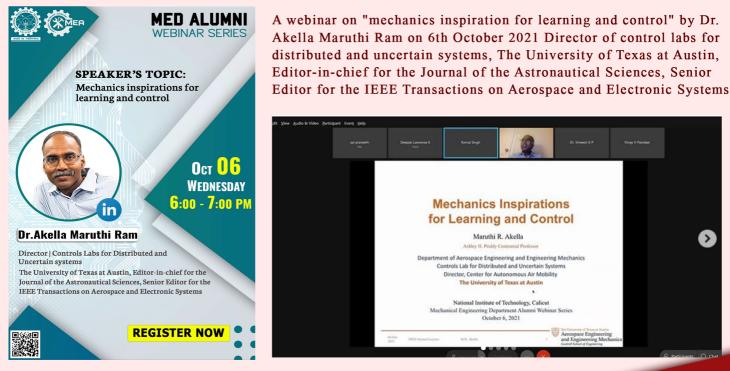
**Interactive Sessions** with **Q&A** 

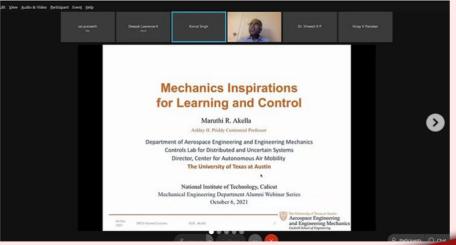


Registration closes one day before the talk

Sujay - 9652652225 Narayana - 9014059009









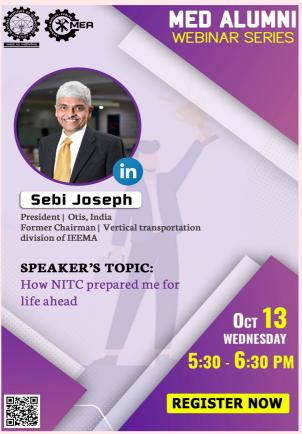












A webinar on "How NITC prepared me for life ahead" by Sebi Joseph on 13th October 2021, President of Otis, India and Former Chairman of Vertical transportation division of IEEMA





A webinar on "Nuclear Reactor Technology in India: Advances and Opportunities" by A K Balasubrahmanian on 21st October 2021, the Director (Technical) Retd. Nuclear Power Corporation of India Ltd (NPCIL)







A webinar on "FAST & FURIOUS 21: Accelerating a career in the Transforming mobility industry" by Anant Kamat on 29th October 2021, the Managing Director of Accenture and Former Director of Fiat Chrysler Automobile.



#### **CONTACT INFO**

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