



**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING**  
(AUTONOMOUS)

Accredited by NAAC & NBA ( CSE, IT, ECE, EEE & ME) under Tier - I

Approved by AICTE and Permanently Affiliated to JNTUK, Kakinada



**DEPARTMENT OF MECHANICAL ENGINEERING**

**One Week online Faculty Development Programme on**

***“Advancements in Mechanical Engineering”***

***AME-2023***

19<sup>th</sup> June 2023 to 24<sup>th</sup> June 2023 (Monday to Saturday)

Timings - Session -1 from 9.30AM to 11.00AM and Session -2 from 11.15AM to 12.45PM

The one week online Faculty program was conducted through Microsoft Teams Platform. The inaugural session for the online FDP was held on 19-6-2023 at 9.30am and with valedictory session it was closed on 24-6-2023 at 11.45am. There was a good response from the faculty and research scholars and a total 680+ registrations from the participants across the country and overseas. The total number of participants after scrutiny were limited to 250 members in Microsoft Teams after short listing process is done based on first cum first serve.

**Registration link:** <https://forms.gle/vKBY3NYxJNFQK8z86>

**Registration Fee: Free**

**Registration Deadline: 15-06-2023**

**Details of Resource Persons:**

**DEPARTMENT OF MECHANICAL ENGINEERING**

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Timings - Session -1 from 9.30AM to 11.00AM and Session -2 from 11.15AM to 12.45PM

<b>Name of the Resource Person</b>	<b>Designation and Institute</b>
<b>Dr. P.Karthik</b>	<b>Research Engineer, Florida Solar Energy Centre, University of Central Florida, USA</b>
<b>Dr. S.K.Tyagi</b>	<b>Associate Professor Department of Energy Science and Engineering Indian Institute of Technology, Delhi</b>
<b>Dr. D.Jayakrishna</b>	<b>Professor Department of Mechanical Engineering National Institute of Technology, Warangal</b>
<b>Dr. T.Srinivas</b>	<b>Associate Professor Department of Mechanical Engineering National Institute of Technology, Jalandhar</b>
<b>Dr.M.Ravi Sankar</b>	<b>Associate Professor &amp; Head Department of Mechanical Engineering Indian Institute of Technology, Tirupati</b>
<b>Dr.D.Chakradhar</b>	<b>Associate Professor Department of Mechanical Engineering Indian Institute of Technology, Palakkad</b>
<b>Dr.R.Parameshwaran</b>	<b>Associate Professor Department of Mechanical Engineering BITS-Pilani Hyderabad Campus</b>
<b>Dr.M.Krishna Kishore</b>	<b>Assistant Professor Department of Mechanical Engineering National Institute of Technology, Surat</b>
<b>Dr.M.Vijaya Kumar</b>	<b>Assistant Professor Department of supply chain NITIE, Mumbai</b>

**Inauguration Function:** The inauguration function of the FDP started on 19-06-2023 at 9.30AM, with the welcome address by the Convener, Dr.S.Pichi Reddy, Professor & HoD, Department of Mechanical Engineering followed by the key note address by the distinguished guest and resource person, Dr.S.K.Tyagi, Associate Professor, Department of Energy Science and Engineering, Indian Institute of Technology, Delhi. Later the Principal of LBRCE Dr.K.Appa Rao addressed the participants and emphasized the importance of knowledge transfer to the student fraternity after attending the FDP by Faculty members. The inaugural function concluded at 9.45AM. The session on day-1 started with Dr.S.K.Tyagi Agro-wastes to carbon

neutral clean and green energy for rural India. There were total 9 sessions conducted and the details are as given below.

Table 1: Details of Resource Persons and topic delivered

<b>Dates</b>	<b>Name of the Resource Person</b>	<b>Topic Covered</b>
19.6.2023 9.30AM to 11.00AM	<b>Dr. S.K.Tyagi, Associate Professor Department of Energy Science and Engineering Indian Institute of Technology, Delhi</b>	Talk given on: <b>Agro-wastes to carbon neutral clean and green energy for rural India</b>
19.6.2023 11.15AM to 12.45PM	<b>Dr.M.Krishna Kishore, Assistant Professor Department of Mechanical Engineering National Institute of Technology, Surat</b>	Talk given on: <b>Large scale metal additive manufacturing of inconel and steels</b>
20.6.2023 9.30AM to 11.00AM	<b>Dr. T.Srinivas , Associate Professor Department of Mechanical Engineering National Institute of Technology, Jalandhar</b>	Talk given on: <b>Solar thermal and photovoltaic collector with water driven tracking mechanism</b>
21.6.2023 9.30AM to 11.00AM	<b>Dr. D.Jayakrishna, Professor Department of Mechanical Engineering National Institute of Technology, Warangal</b>	Talk given on: <b>Battery thermal management system for e-vehicles</b>
21.6.2023 11.15AM to 12.45PM	<b>Dr.M.Ravi Sankar, Associate Professor &amp; Head Department of Mechanical Engineering Indian Institute of Technology, Tirupati</b>	Talk given on: <b>Under liquid laser micro-machining</b>
22.6.2023 3.30PM to 4.45PM	<b>Dr. P.Karthik, Research Engineer, Florida Solar Energy Centre, University of Central Florida, USA</b>	Talk given on: <b>Application of Data Mining in buildings</b>
23.6.2023 9.30AM to	<b>Dr.R.Parameshwaran, Associate Professor Department of Mechanical Engineering BITS-Pilani Hyderabad Campus</b>	

11.00AM	Talk given on: <b>Thermal energy storage using advanced materials</b>
<b>23.6.2023</b>	<b>Dr.D.Chakradhar, Associate Professor Department of Mechanical Engineering Indian Institute of Technology, Palakkad</b>
11.15AM to 12.45PM	Talk given on: <b>Sustainable Machining</b>
<b>24.6.2023</b>	<b>Dr.M.Vijaya Kumar, Assistant Professor Department of supply chain NITIE, Mumbai</b>
9.30AM to 11.00AM	Talk given on: <b>Technological Challenges in Indian Industries</b>

### Outline of the topics covered in FDP

**Agro-wastes to carbon neutral clean and green energy for rural India** - The identification of agro waste material for cooking purpose interms of developing a new method of carbon free clean and green energy for smoke free rural india elaborated in his presentation.

**Large scale metal additive manufacturing of inconel and steels** - The emerging type of additive manufacturing method especially the metal additive manufacturing in large scale basis was presented with suitable examples and case studies.

**Solar thermal and photovoltaic collector with water driven tracking mechanism** - has been explained to the participants in lucid manner by the Resource person.

**Battery thermal management system for e-vehicles** Necessity of Battery thermal management system, Battery structure, materials, Lithium ion battery and the prospective and alternate sodium ion battery discussed.

**Under liquid laser micro-machining** - The instances where the necessity of under liquid machining arises and for what type of applications and components lase micro-machining can be applied was presented. The merits and demerits in comparison to other machining techniques also discussed.

**Application of Data Mining in buildings** - The step by step procedures for selecting and implementing the data mining technique with examples and specific applications to building simulation analysis assisted by some software tools like Python and R programming also chatGPT discussed.

**Thermal energy storage using advanced materials** Thermal energy storage methods, sensible heat type, latent heat type, PCM based thermal energy storage, its salient features, different types, application of PCM based thermal energy storage in solar collectors, energy storage capacity with advanced materials was presented.

**Sustainable Machining-** The problems associated in machining methods and the causes for inefficient and ineffective machining with respect to materials and methods presented. The probable methods leads to sustainable machining discussed.

**Technological Challenges in Indian Industries -** The present day industries facing challenges elaborately presented with appropriate analysis using statistical data and the remedies were proposed.

Day-1: Monday 19-06-2023, Session-1, Dr.S.K.Tyagi, IIT, Delhi

Harmful Pollutants	Emission (t/kg)
NOx	2.40
CO	58.90
NM VOC	6.30
SOx	0.30
PM2.5	5.80

PAHs (carcinogenic) µg/kg	Emission (t/kg)
Benzo(a)pyrene	72
Benzo(b)fluoranthene	120
Benzo(k)fluoranthene	88
Indeno(1,2,3-cd)pyrene	55


Day-1: Monday,19-06-2023, Session-2, Dr.M,Krishna Kishore, Asst. Professor, NIT, Surat

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19<sup>th</sup> June -24<sup>th</sup> June 2023

Department of Mechanical Engineering  
LAKIREDDY BALIREDDY COLLEGE OF ENGINEERING

## Wire Arc Additive Manufacturing

Dr. Krishna Kishore Mugada,  
Assistant Professor,  
Department of Mechanical Engineering,

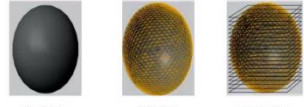


Sardar Vallabhbhai National Institute of Technology, Surat,  
Gujarat, India-395007.  
Email: [kkm@med.svnit.ac.in](mailto:kkm@med.svnit.ac.in); Phone: +91 9505674467.

Guest, Dept. of ME

### Additive Manufacturing Processes- Definition

(ASTM F2792) It is defined as the process of joining materials to make objects from 3D model data, usually layer-by-layer as opposed to subtractive manufacturing methodologies.



CAD file      STL file      Sliced file

Pre-process  
(tessellate, slice, support)

↓

Build Part  
(additive / stacking)

↓

Post-process  
(break support, finish)

ISO/ASTM 52900 defines-  
Five criteria for a process to be called "Additive Manufacturing"

- Process of joining of materials.
- Starting from 3D model data.
- Layer-by- layer build up approach.
- Not subtractive manufacturing methodologies.
- Not formative manufacturing methodologies.

Department of Mechanical Engineering, SVNIT Surat

Guest, Dept. of ME

### Quality improving recent advances in WAAM Process

- Post-process heat treatment
- Near immersion active cooling (NIAC)
- Interpass cooling
- Interpass cold rolling
- Hot forging WAAM (HF-WAAM)
- Ultra cold WAAM (UC-WAAM)

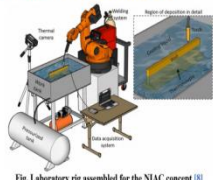


Fig. Laboratory rig assembled for the NIAC concept [8]

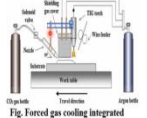


Fig. Turreted gas cooling integrated WAAM setup [9]

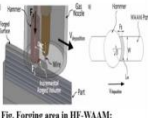




Fig. Forging area in HF-WAAM: (a) isometric (3D); (b) top view (2D) [8]

Guest, Dept. of ME


### Parts Produced by WAAM in Different Sectors




Aerospace Sector [9]




High-speed Rail Sector [9]




Naval Vessel Sector [9]



Nuclear Power Sector [9]



Aviation Sector [9]



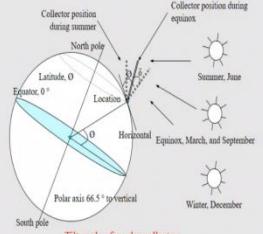
Construction Sector [9]

Guest, Dept. of ME

Day-2: Tuesday 20-06-2023, Session-1: Dr.T.Srinivas, NIT, Jalandhar

### Slope or Tilt angle ( $\beta$ )

is the angle the surface makes with the horizontal plane.



$\beta = \theta - \delta$

Collector position during summer

Collector position during equinox

Collector position during winter

North pole

Latitude,  $\theta$

Location

Equator,  $0^\circ$

Horizontal

Polar axis  $66.5^\circ$  vertical

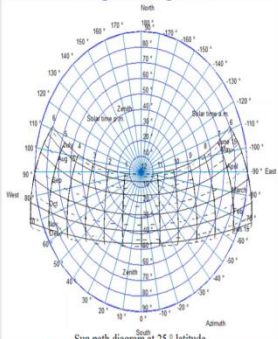
South pole

Tilt angle of a solar collector

A south-facing collector tipped up to an angle equal to its latitude is perpendicular to the sun's rays at solar noon during the equinoxes

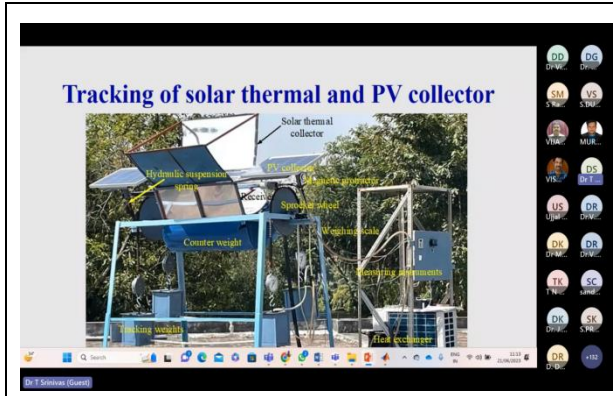
Dr.T Srinivas (Guest)

### Sun path diagram

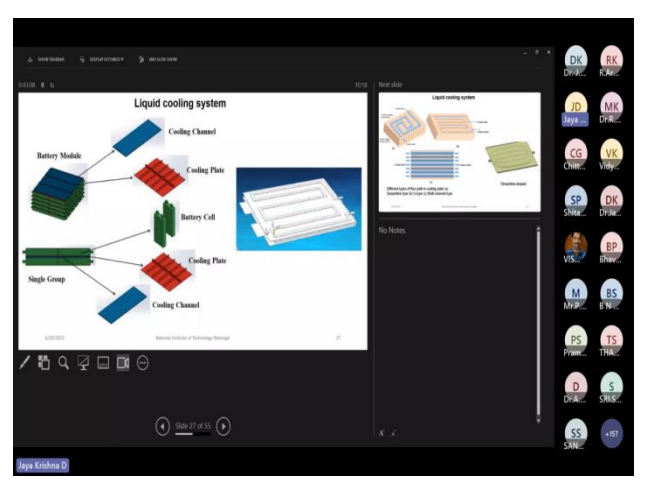
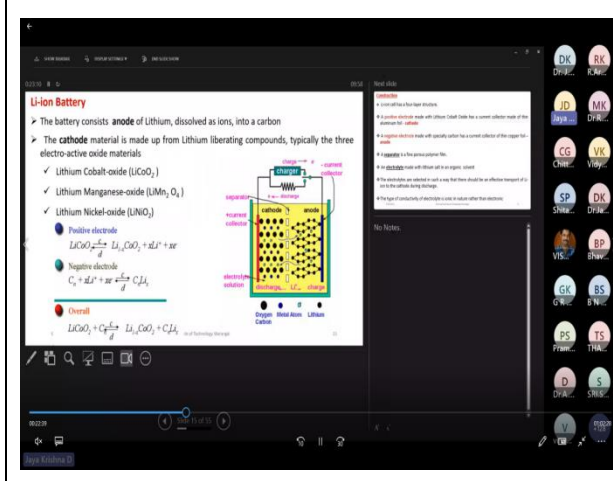
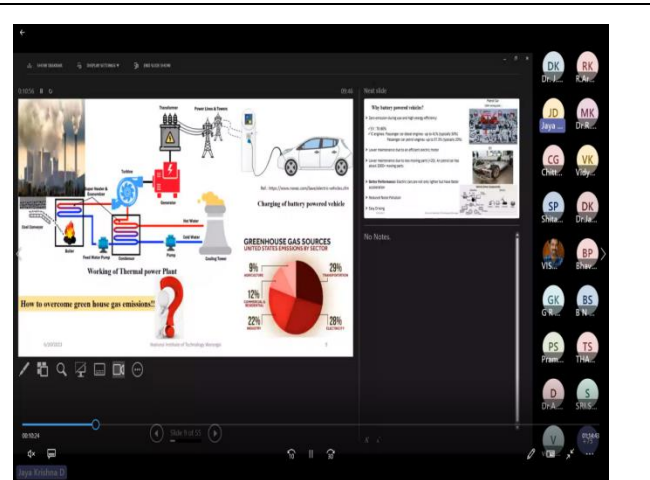
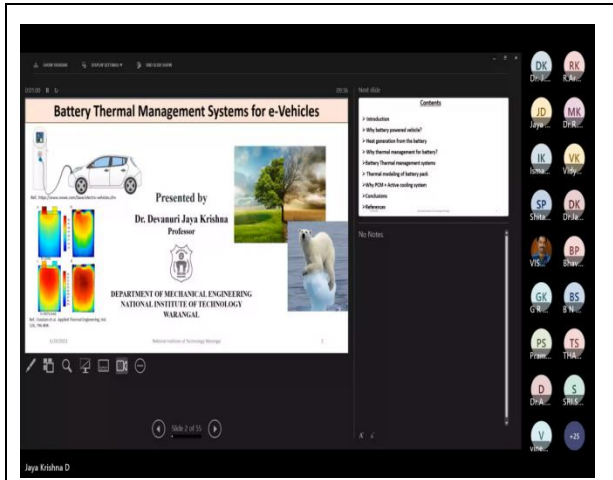


Sun path diameter at  $25^\circ$  latitude

Dr.T Srinivas (Guest)



Day-3: Wednesday 21-06-2023, Dr.D.Jayakrishna, NIT, Warangal



Day-4: Thursday 22-06-2023, Evening Session(Special), Dr.P.Karthik, Research Engineer, University of Central Florida, USA

**UCF FSEC Energy Research Center**  
UNIVERSITY OF CENTRAL FLORIDA

## Application of data mining in buildings

Karthik Panchabakesan, Ph.D.,  
Research Engineer, Buildings Research,  
Florida Solar Energy Center,  
University of Central Florida, UCF, Florida, USA

June 22, 2023

Karthik Panchabakesan

### Data mining - Knowledge Discovery in Databases

[http://www2.cs.uoregina.ca/~dbd/cs831/notes/kdd1\\_kdd.html](http://www2.cs.uoregina.ca/~dbd/cs831/notes/kdd1_kdd.html)

University of Central Florida

Karthik Panchabakesan

### Energy consumption in buildings

**Occupants' types of activities affecting building energy consumption!**

Occupant Status	Occupant energy behaviour	Energy cause
Absence of Occupants	Passive	Production of metabolic heat
Presence of Occupants	Active	Use of lighting and solar shading
Energy Use	Active	Use of HVAC systems and equipment
		Use of hot water
		Use of appliances
		Use of openings
		Ventilation

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY conducted a simulation study to assess the energy consumption in a private office, considering three scenarios:

1. Austerity workstyle
2. Standard workstyle
3. Wasteful workstyle

Compared to the Standard workstyle, the **Austerity workstyle** can save **42%, 50%, and 49%** of source energy in **San Francisco, Chicago, and Miami** respectively, while the **Wasteful workstyle** consumes **89%, 81%, and 74%** more energy for the three climates, respectively.

Karthik Panchabakesan

### Data sources

Building automation/energy management systems

Smart thermostats

Open-source data

Data loggers

Time of Use Surveys

Mostly in commercial buildings

University of Central Florida

Karthik Panchabakesan

Day-4: 23-06-2023, Friday Session-1, Dr.R.Parameshwaran, BITS Hyderabad Campus

**BITS Pilani**  
Thermal Energy Storage Using Advanced Materials

Dr. R. Parameshwaran

Dr. Parameshwaran (Guest)

### MPCM for Passive Cooling

**Preparation of MNP:**  $Urea\ Formamide\ +\ NaOH\ \rightarrow\ MNP$

**Synthesis of MPCM:**  $MNP\ +\ MIP\ \rightarrow\ MPCM$

**MPCM Slurry:**  $MPCM\ +\ Water\ \rightarrow\ MPCM\ Slurry$

Dr. Parameshwaran (Guest)





**Technological Challenges in Indian Industries**

Dr Vijaya Kumar Manupati  
National Institute of Industrial Engineering

**Framework for integrating CPS w.r.t PPC and MM**

Manufacturing Data  
Sensors, Actuators  
Big Data  
Cloud  
AI  
ML  
MTBT  
Analytics  
Production Planning and Control  
Advanced Analytics  
Artificial Intelligence, Machine Learning, and Deep Learning Technologies  
Machine Learning  
Optimization  
Production Planning and Control  
Advanced Analytics  
Artificial Intelligence, Machine Learning, and Deep Learning Technologies  
Machine Learning  
Optimization  
Production Planning and Control  
Advanced Analytics  
Artificial Intelligence, Machine Learning, and Deep Learning Technologies  
Machine Learning  
Optimization  
Production Planning and Control

3D Model of a Manufacturing Plant Layout

State Gantt Chart showing machine throughput and block in progress.

Machine	Throughput
Machine 1	850
Machine 2	840
Machine 3	830
Machine 4	820
Machine 5	810
Machine 6	800
Machine 7	790
Machine 8	780
Machine 9	770
Machine 10	760
Machine 11	750
Machine 12	740
Machine 13	730
Machine 14	720
Machine 15	710
Machine 16	700
Machine 17	690
Machine 18	680
Machine 19	670
Machine 20	660
Machine 21	650
Machine 22	640
Machine 23	630
Machine 24	620
Machine 25	610
Machine 26	600
Machine 27	590
Machine 28	580
Machine 29	570
Machine 30	560
Machine 31	550
Machine 32	540
Machine 33	530
Machine 34	520
Machine 35	510
Machine 36	500
Machine 37	490
Machine 38	480
Machine 39	470
Machine 40	460
Machine 41	450
Machine 42	440
Machine 43	430
Machine 44	420
Machine 45	410
Machine 46	400
Machine 47	390
Machine 48	380
Machine 49	370
Machine 50	360
Machine 51	350
Machine 52	340
Machine 53	330
Machine 54	320
Machine 55	310
Machine 56	300
Machine 57	290
Machine 58	280
Machine 59	270
Machine 60	260
Machine 61	250
Machine 62	240
Machine 63	230
Machine 64	220
Machine 65	210
Machine 66	200
Machine 67	190
Machine 68	180
Machine 69	170
Machine 70	160
Machine 71	150
Machine 72	140
Machine 73	130
Machine 74	120
Machine 75	110
Machine 76	100
Machine 77	90
Machine 78	80
Machine 79	70
Machine 80	60
Machine 81	50
Machine 82	40
Machine 83	30
Machine 84	20
Machine 85	10
Machine 86	0
Machine 87	0
Machine 88	0
Machine 89	0
Machine 90	0
Machine 91	0
Machine 92	0
Machine 93	0
Machine 94	0
Machine 95	0
Machine 96	0
Machine 97	0
Machine 98	0
Machine 99	0
Machine 100	0

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**Program Objective:** To impart the knowledge of advancements and current research in the domain of Mechanical Engineering happening around the globe.

**Program Outcomes:** The participants able to

1. Know the aspects of developing thermo-economic mechanical systems
2. Comprehend thermal and renewable energy storage systems using the advanced materials
3. Recognize the significance of modelling, simulation, analysis and optimization of machining
4. Know the importance of developing the carbon free clean and green energy systems for smoke free rural india
5. Know the technological challenges of indian industries and propose the remedies
6. Develop the methods for thermal management of e-vehicles

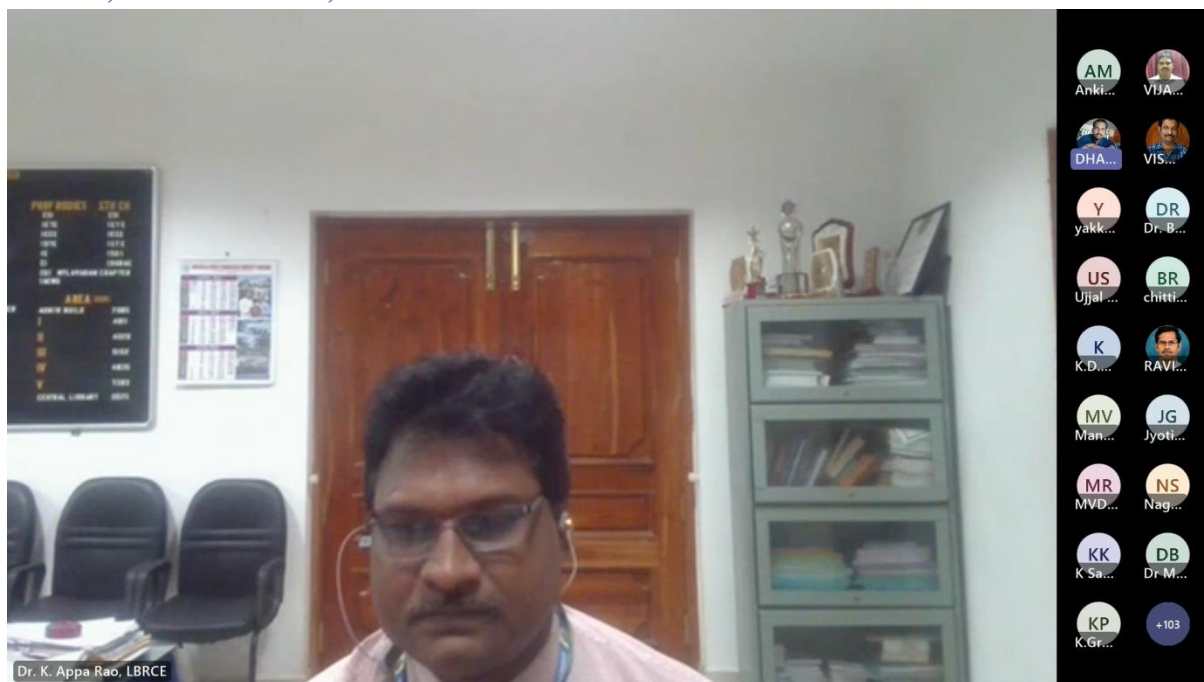
**COORDINATORS**

**1.Dr.P.Vijay Kumar**      **2.Dr.V.Dhanaraju**  
**Professor**                      **Assoc.Professor**

**CONVENER**

**Dr.S.Pichi Redd**  
**Professor and Head**

**Valedictory Function Images, Conversation of Dr.K.AppaRao, Principal and Dr.M.Vijaya Kumar, Asst. Professor, NITIE Mumbai.**





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**June 19<sup>th</sup> – June 24<sup>th</sup>, 2023**

**Programme Schedule**

S. No	Day	Date & Time	Resource Person Details	Topic
<b>DAY-1</b>				
1	MONDAY	19/06/2023 9.30AM	Dr. S.K.Tyagi, Associate Professor of Mechanical Engineering, Indian Institute of Technology, Delhi	Agro-wastes to carbon neutral clean and green energy for rural India
2		19/06/2023 11.15AM	Dr. M.Krishna Kishore, Assistant Professor, Department of Mechanical Engineering, SVNIT Surat	Large scale metal additive manufacturing of inconel and steels
<b>DAY-2</b>				
3	TUESDAY	20/06/2023 9.30AM	Dr.D.Chakradhar, Associate Professor, Department of Mechanical Engineering, Indian Institute of Technology Palakkad	Sustainable Machining
4		20/06/2023 11.15AM	Dr.D.Jayakrishna, Professor, Department of Mechanical Engineering, National Institute of Technology Warangal	Battery thermal management system for e-vehicles
<b>DAY-3</b>				
5	WEDNESDAY	21/06/2023 9.30AM	Dr.T.Srinivas, Associate Professor, Department of Mechanical Engineering, NIT Jalandhar	Solar thermal and photovoltaic collector with water driven tracking mechanism
6		21/06/2023 11.15AM	Dr. M.Ravi Sankar, Associate Professor & Head, Department of Mechanical Engineering, Indian Institute of Technology, Tirupati	Under liquid laser micro-machining
<b>DAY-4</b>				
7	THURSDAY	<b>22/06/2023 3.00PM (Special</b>	<b>Dr.P.Karthik, Research Engineer, Florida Solar Energy Centre, Central University of Florida, USA.</b>	Application of data mining in buildings

**Lakireddy Bali Reddy College of Engineering-MED Online FDP: 19-06-2023 to 24-06-2023**

Session)				
<b>DAY-5</b>				
8	FRIDAY	23/06/2023 9.30AM	Dr. R.Parameashwaran, Associate Professor, Department of Mechanical Engineering, BITS- Pilani, Hyderabad Campus	Thermal energy storage using advanced materials
<b>DAY-6</b>				
9	SATURDAY	24/06/2023 9.30AM	Dr.Vijaya Kumar Manupati, Assistant Professor, Operations and Supply chain Division, NITIE, Mumbai	Technological Challenges in Indian Industries

<p><b>Resource Persons</b></p> <p>Dr. P. Karthik, Central University of Florida, USA                  Dr. S.K. Tyagi, IIT Delhi                  Dr. M.Ravi Sankar, IIT Tirupati                  Dr. D.Chakradhar, IIT, Palakkad                  Dr. D.Jaya Krishna, NIT, Warangal                  Dr. T.Srinivas, NIT, Jalandhar                  Dr. R.Parameashwaran, BITS-Pilani, Hyderabad Campus                  Dr. M.Krishna Kishore, SVNIT, Surat                  Dr. V.K.Manupati, NITIE, Mumbai</p> <p><b>Registration Fee:</b></p> <ul style="list-style-type: none"> <li>No Registration Fee.</li> </ul> <p><b>Target Audience:</b> Faculty and research scholars from the state, spread across India and Abroad</p> <p><b>Important Date:</b> Last Date for Registration: 10/06/2023</p> <p><b>Registration Link:</b> Fill the Registration form with the following link:  <a href="https://forms.gle/GTa8xZHmGDnwYV3w5">https://forms.gle/GTa8xZHmGDnwYV3w5</a>                  Join the WhatsApp group to get the updates:  <a href="https://chat.whatsapp.com/EaUbw7uUgIMFVNZUhgPWZN">https://chat.whatsapp.com/EaUbw7uUgIMFVNZUhgPWZN</a>                  Online FDP will be organized in Microsoft Teams Platform</p> <p><b>Certificate Criteria:</b></p> <ul style="list-style-type: none"> <li>All eligible candidates will be given e-certificates.</li> <li>Attendance is mandatory.</li> </ul> <p><b>For more details contact:</b>                  Dr.P.Vijaya Kumar: +91-9490817851                  Dr. V.Dhana Raju: +91-9848363670</p>	<p><b>Committee Members</b></p> <p><b>Chief Patrons</b></p> <p>Sri. L.Jaya Prakash Reddy, Honorary Chairman                  Sri. L.R.N.K.Prasad Reddy, Chairman                  Sri. L.Vijaya Kumar Reddy, Vice Chairman</p> <p><b>Patrons</b></p> <p>Sri G. Srinivasa Reddy, President                  Dr. K. Appa Rao, Principal                  Dr. K. Harinadha Reddy, Vice-Principal                  Dr. M. Srinivasa Rao, Dean Academics                  Dr.E.V.Krishna Rao, Professor, Dean R&amp;D</p> <p><b>Convener</b></p> <p>Dr.S.Pichi Reddy, Professor &amp; HOD, ME</p> <p><b>Coordinators</b></p> <p>Dr.P.Vijaya Kumar, Professor                  Dr.M.B.S.Sreekara Reddy, Assoc. Professor                  Dr.K.Murahari, Assoc. Professor                  Dr.V.Dhana Raju, Assoc.Professor</p> <p><b>Co-ordinators</b></p> <p>Mr. K.V.Viswanadh, Sr.Assistant Professor                  Mrs.B.Kamala Priya, Assistant Professor</p> <p><b>Advisory committee</b></p> <p>Dr.P.V.Chandrasekhara.Rao, CoE &amp; Professor                  Dr.P.Ravindra Kumar, Professor                  Dr.K.Dilip Kumar, Professor</p> <p><b>Organizing committee</b></p> <p>Mr.S.Srinivasa Reddy, Associate Professor                  Dr. Ch.Siva Sankara Babu, Sr. Asst Professor                  Mr.B.Sudheer Kumar, Sr.Assistant Professor                  Mr.S.Srinivasa Reddy, Sr.Assistant Professor                  Mr.S.Ramireddy, Sr.Asst Professor                  Mr.A.Nageswara Rao, Sr.Assistant Professor                  Mr.K.Lakshmi Prasad, Sr.Asst Professor                  Mr.V.Sankar Rao, Sr.Asst Professor</p>	<p style="text-align: center;">Online one week Faculty Development Program on</p> <p style="text-align: center;"><b>ADVANCEMENTS IN MECHANICAL ENGINEERING</b> (19<sup>th</sup> June - 24<sup>th</sup> June 2023)</p>  <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;"><b>Organized by</b> Department of Mechanical Engineering (Accredited by NBA under Tier - I)</p> <p style="text-align: center;"><b>LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING</b> (Autonomous)</p>  <p style="text-align: center;">Accredited by NAAC &amp; NBA (CSE, IT, ECE, EEE, MECH) ISO 9001:2015 Certified Institution Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.- 521 230</p>
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**About the Institute:**

LBRCE was founded through Lakireddy Bali Reddy charitable trust in 1998 which stands for quality technical education that is exemplified by the continuous strides taken towards excellence in the last two decades. LBRCE started with an intake of 180 and has reached the current intake of 1164. UGC has accorded Autonomous Status in the year 2010, subsequently renewed in 2016, valid up to 2022. LBRCE has been accredited by NAAC with Grade 'A' and NBA (ECE, IT, CSE, EEE & MECH) under Tier-I. The College has also been awarded 2(f) and 12(B) status, apart from the recognition as a 'College with Potential for Excellence (CPE)' status from the UGC. Our institute has pride to have large pool of well-qualified and experienced faculty.

**About the Department:**

The Department of Mechanical Engineering was started in the year 1998. It has well qualified faculty and well-equipped laboratories.

The Department is accredited by NBA under Tier-I. About 25% of faculty members having doctoral degree. JNTUK Kakinada has accorded Research Centre to the Department and several research scholars are pursuing their P.b.D. The Department received sponsored research projects worth Rs.1.5 Crore from various GOI funding agencies.

**About the FDP:**

The one-week online FDP is aimed at enriching the knowledge and research capabilities of faculty and research scholars of academia and R&D centers working in different areas of Mechanical Engineering domain. This FDP also covers simulation, modeling, and optimization techniques.

This program is useful for participants who are actively involved in research work in various fields of Mechanical Engineering.

Eminent professors from India and Abroad are drawn from the highly reputed institutes (IIT, NIT, R&D centers) have been invited for FDP.to deliver latest topics of research.

**Objectives of the FDP:**

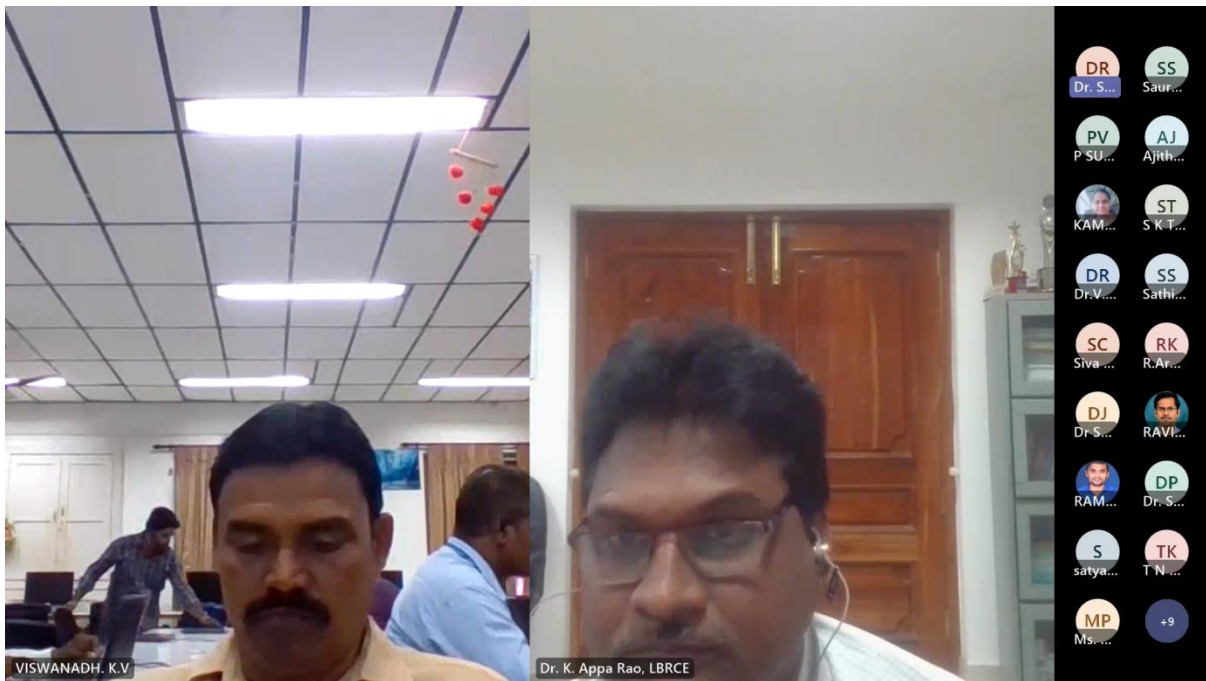
- To know the latest research work in Mechanical Engineering domain.
- To get exposed to the latest simulation, modeling and optimization techniques.
- To get acquainted with the advancements in research of Mechanical systems.

**Topics to be covered:**

- Thermal battery management system for e-vehicles
- Under liquid laser micro-machining
- Technological challenges in Indian industries
- Solar thermal and photovoltaic collector with water driven tracking mechanism
- Argo-wastes to carbon neutral clean & green energy for rural India
- Application of Data mining in buildings
- Sustainable machining
- Application of machine learning technique for large scale manufacturing of inconel and steels
- Thermal energy storage using advanced materials

**Learning Outcomes:**

- Acquire the latest technological advancements in Mechanical Engineering.
- Optimize the performance parameters of thermal and mechanical systems.
- To predict the solutions for problems in Mechanical Engineering.



Addressing the participants by Principal Dr.K.Appa Rao during the inaugural function of FDP on 19-06-2023



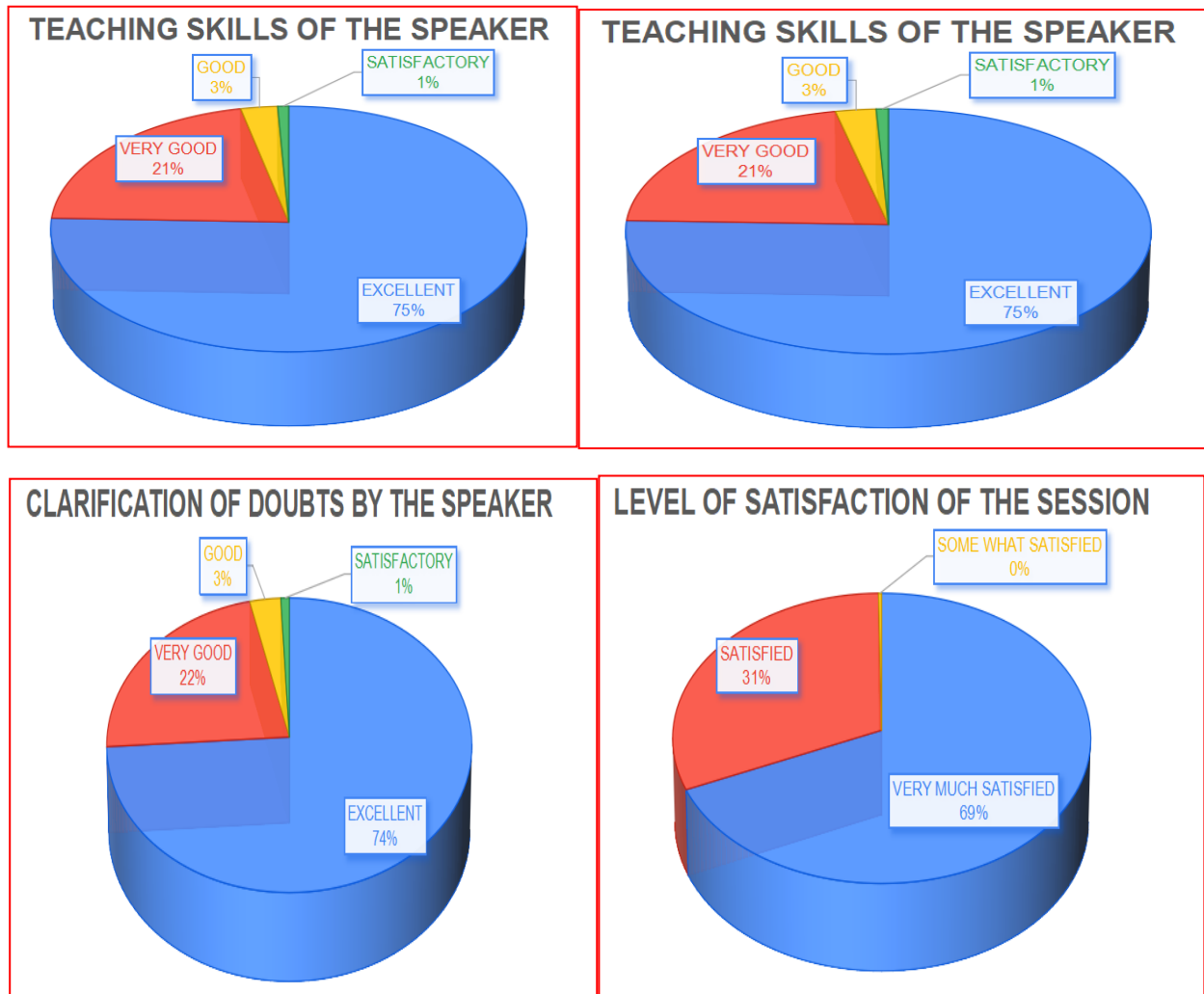
Chief Guest and Inaugural session Speaker Dr.S.K.Tyagi, IIT Delhi and  
Principal Dr.K.Appa Rao conversation during the FDP inaugural function on Monday.19-6-2023

# “Advancements in Mechanical Engineering”

## AME-2023

### PARTICIPANTS FEEDBACK

(Total 380 Participants)



*[Signature]*  
Dept of Mechanical Engineering  
LAKIREDDY BALI REDDY COLLEGE OF ENGG  
MYLAVARAM - 521 230, Krishna Dt., A.P.

HoD