

### Report on One Week Online Faculty Development Programme on Recent Advances & Trends in Mechanical Engineering & Material Science, from 27<sup>th</sup>- July-2020

**Title of activity:** One Week Online Faculty Development Programme on Recent Advances & Trends in Mechanical Engineering & Material Science.






**Type of activity:** Faculty Development Programme




**Date/duration of activity:** 27-07-2020 to 31-07-2020

**Venue:** Online, Google Meet Platform

**Number of participants:** 251

**Speaker(s):**

	Session 1 @ 10:00 am To 11:30 am	Session 1 @ 12:00 pm To 1:30 pm
Day1 27-07-2020 Monday		Dr. Amarnath M Assistant Professor Indian Institute of Information Technology & Manufacturing Keynote Address & Session on <b>Topic:</b> Enhancement in the performance of journal bearing using microwave irradiation method
Day2 28-07-2020 Tuesday		Mr. B V Venugopal Technical Expert Central Manufacturing Technology Institute (CMTI)-Bangalore <b>Topic:</b> Machine Tool Testing
Day3 29-07-2020 Wednesday		Mr. Ravi Payanur Sripathi Principal Engineer QUEST Global Engineering Services Private Limited <b>Topic:</b> Advances in Aero Engine Design
		 Dr. Ranganath.R Professor & Head Department of Mechanical Engineering, SJCIT <b>Topic:</b> Heat Treatment of High Strength Aluminum Alloys.
		 Dr. Bharath K N Post-Doctoral Fellowship, Washington State University <b>Topic:</b> Natural Fiber and Its Composites: Characteristics and opportunities

<p>Day4 30-07-2020 Thursday</p>		<p>Dr. C Ramesh Dean, Research &amp; Innovation, Presidency University, Bangalore <b>Topic:</b> Research opportunities in Materials</p>		<p>Dr. P S Shiva Kumar Professor, Department of Mechanical Engineering SDM College of Engineering &amp; Technology <b>Topic:</b> Natural Composites &amp; its Applications.</p>
<p>Day5 31-07-2020 Friday</p>		<p>Dr. K Rama Narasimha Principal &amp; Director K.S.School of Engineering &amp; Management <b>Topic:</b> Computational Fluid Dynamics &amp; its Applications</p>		

## 1. Objective

This programme was, aimed to cover a wide range of topics starting from fundamentals of different classes of materials, their synthesis and characterizations for usage in different applications. This program further emphasizes the development of relevant skills and understanding the capabilities, opportunities, global trends, gaps and challenges of the industry. The FDP will also be very helpful for all level of Research scholars, academicians, technologist and Industry personnel who are working in the area of Materials, their synthesis, characterization and applications. The programme will provide scope to the faculty to undertake multidisciplinary research in materials science using emerging trends of advance materials.

## 2. Target Group

Faculty, Academicians, Research Scholars & Industrialist from Various Institutions.

## 3. About Faculty Development Programme.

This One Week Online Faculty development programme (FDP-2020) was successfully conducted by Department of Mechanical Engineering, K.S.Institute of Technology in association with Indian Institute of Foundry Men (IIF), from 27th – 31st July 2020. The FDP programme received an overwhelming response with 250 participants from Faculty, Academicians, and Research Scholars, Industrialist from Various Institutions.

Opening remarks for the FDP were given by Dr. K V A Balaji, Principal / CEO KSIT, which was followed by an introduction to the programme by Prof. Umashankar M, HOD, MED. He also gave a glimpse of the activities going on in K.S.Institute of Technology.

The programme progressed with the inaugural lecture at 10:30 am by Dr. Amarnath M, in which he mainly focussed on the material research going on in Journal Bearing and he also gave few glimpses of the test facilities available at Indian Institute of Information Technology & Manufacturing, Jabalpur.

The speaker for session one of second Day was Mr. B V Venugopal from Central Manufacturing Technology Institute (CMTI)-Bangalore. He mainly talked about the research in the area of Machine tool testing and test facilities at CMTI. After the first session, Dr. Ranganath.R mainly talked about his research in the area of Heat Treatment of High Strength Aluminum Alloys and its applications.

The next lecture on session 1 of Day-3 was given by Mr. Ravi Payanur Sripathi, Principal Engineer from QUEST

Global Engineering Services Private Limited in which he gave highlights of the advances in Aero-Engine Design & Gas turbines. Discussions with the speakers also continued post session-1 with another speaker Dr. Bharath K N, Post-Doctoral Fellowship, Washington State University, where emphasized on the Research opportunities in the field on Natural Composites and its Applications. This marked the end on Day-3 programme.

The Fourth day started off with the lecture of Dr. C Ramesh, Dean, Research & Innovation from Presidency University, Bangalore. His talk was based on the funding opportunities in the area of Material Characterization. Participants discussed over various aspects with the speaker. The next lecture was given by Dr. P S Shiva Kumar from SDM College of Engineering & Technology, Darwad on Green Composites and its application.

The final day started off with a very informative lecture Dr. K Rama Narasimha, Principal & Director, K.S.School of Engineering & Management from Bangalore on Computational Fluid Dynamics & its Applications. This led to the end of the series of lectures in the Five days programme.









Most of them talked about their enriching experience at the FDP. Thereafter Prof. Umashankar M, gave his concluding remarks. In the end Dr. Girish T R gave the vote of thanks and concluded the three days faculty development programme.

#### 4. Analysis and evaluation of the FDP

This One Week Online FDP helped to stimulate thought process, arousing interest and motivating further inquiry and discussion among faculties. The FDP provided a platform for faculty members to enrich their teaching skill and research in the field of Engineering Materials. The One Week Online FDP provided a better insight into the recent trends in the field of Advanced Materials and its application in various fields. The program broadly focused on enhancing functional area expertise, improving one's classroom performance in latest subjects and enriching the abilities for conducting meaningful research. The FDP focused on the latest technologies and systems in the field of Material Science.

 <p><b>IN ASSOCIATION WITH</b></p>  <p><b>THE INSTITUTE OF INDIAN FOUNDRYMEN</b></p> <p><b>ONE WEEK ONLINE FDP ON "RECENT ADVANCES &amp; TRENDS IN MECHANICAL ENGINEERING &amp; MATERIAL SCIENCE" ON 27<sup>th</sup> TO 31<sup>st</sup> JULY 2020</b></p> <p>ORGANIZED BY <b>DEPARTMENT OF MECHANICAL ENGINEERING</b></p>  <p><b>K. S. INSTITUTE OF TECHNOLOGY</b> (Affiliated to VTU, Recognised by AICTE &amp; Accredited by NMAC) No. 14, Raghuvanahalli, Kanakapura Road Bengaluru - 560109</p> <p><b>REGISTER</b> <a href="https://forms.gle/QX5YLL5YTG2EAbGk9">https://forms.gle/QX5YLL5YTG2EAbGk9</a></p> <p><b>ONLINE PLATFORM: GOOGLE MEET</b></p> 	<p><b>ABOUT THE INSTITUTION</b></p> <p>The Kammavari Sangham, a multi-activity non-profit oriented voluntary service organization, was established in the year 1952 with the sole objective of providing charitable service to community and society. The Sangham has diversified its activities since its establishment over five decades ago. With a firm belief that quality and meaningful education only can lay the strong foundation for bringing about economic and social changes to the lives of thousand, the Sangham went about establishing educational institutions, starting with K.S. Polytechnic in 1992. Enthused with this success of its foray into technical education, the Sangham moved forward by starting the K.S Institute of Technology (KSIT). Its Engineering College in the year 1999. In the following years both these institutions have carved for themselves an enviable niche through academic excellence achieved in a very short span of time. By providing FREE hostel accommodation and scholarship to the deserving students in the community, it has furthered its Commitment to education.</p> <p><b>ABOUT THE DEPARTMENT</b></p> <p>The Department of Mechanical Engineering is one among the senior and old branches in the institution with many prides to its feather. A facility of repute, excellent faculty and a good student community has contributed to make the Department vibrant and striving hard to achieve excellence in the area of academics and research. In keeping with the continued efforts for upgradation and advancement of knowledge, the Department has successfully completed the establishment of various labs as per the University requirements and care has been taken to procure specialized equipment to inculcate an aptitude for research in faculty as well as students. The faculty and students are actively involved in the Research and Development and have many International journal publications to their credit. The Department is recognized as a Research centre from VTU and 13 research scholars are carrying out their research in the various fields of Mechanical Engineering. The Department is running a departmental library. The Department has taken the leading role in the IPR activities, IEDC activities, NSS, sports and cultural activities of the institution.</p> <p><b>ABOUT THE FDP</b></p> <p>Advancement in health care, energy, computing and numerous other fields depends on new findings in material science; hence the world is always looking for new discoveries and inventions around materials. Whether it is the lightest materials for space shuttles, superconductors to transmit electricity, foldable electronics or bio-sensors that are compatible with the human body; materials science touches every aspect of our day to day lives. One could apply materials science to any application in healthcare, renewable energy, aviation or mechanical engineering. Materials Scientists, Engineers, Academicians and Researchers look at different groups of materials like metals and alloys, polymers, ceramics and composites. The program provides in-depth knowledge of Advanced Materials, their fundamental characteristics, synthesis, characterization and applications in the advancement of Science and Technology in different domains. The program focuses to create a platform between Academia and Industry to fill the gap between research in laboratory and its industrial applications. The training program will contribute towards building up an immense knowledge on the state-of-the-art techniques used worldwide in the area of Functional Materials and Materials Science. It also provides a platform for the participants to interact with the leading researchers and technologists which will benefit from their vast experience in the area. This program is, therefore, aimed to cover a wide range of topics starting from fundamentals of different classes of materials, their synthesis and characterizations for usage in different applications. This program further emphasizes the development of relevant skills and understanding the capabilities, opportunities, global trends, gaps and challenges of the industry. The FDP will be very helpful for all level of Research scholars, academicians, technologist and Industry personnel who are working in the area of Materials, their synthesis, characterization and applications. The program will provide scope to the faculty to undertake multi disciplinary research in materials science using emerging trends of advance materials.</p> <p><b>WHO CAN ATTEND?</b></p> <p>The program is open for the Faculty members of science and engineering streams, Research Supervisors, Research scholars, PG Students and the persons from industry, R&amp;D organizations.</p> <p><b>CERTIFICATION:</b></p> <p>E-Certificate will be provided to all the registered participants attending the program on all the days after submission of feedback form.</p>
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Day1 27-07-2020 Monday	 Dr. Amarnath M Assistant Professor Indian Institute of Information Technology & Manufacturing Keynote Address & Session on Topic: Enhancement in the performance of journal bearing using microwave irradiation method		Sri. Y Ramachandra Naidu Hon. President K S Group of Institutions	
Day2 28-07-2020 Tuesday	 Mr. B V Venugopal Technical Expert Central Manufacturing Technology Institute (CMTI)-Bangalore Topic: Machine Tool Testing	 Dr. Ranganath.R Professor & Head Department of Mechanical Engineering, SJCIT Topic: Heat Treatment of High Strength Aluminum Alloys.	Sri. K Venkatesh Naidu, B.E Hon. Secretary K S Group of Institutions	
Day3 29-07-2020 Wednesday	 Mr. Ravi Payanur Sripathi Principal Engineer QUEST Global Engineering Services Private Limited Topic: Advances in Aero Engine Design	 Dr. Bharath K N Post-Doctoral Fellowship, Washington State University Topic: Natural Fiber and Its Composites: Characteristics and opportunities	Sri. D Rukmangada, B.E, M.B.A Hon. Treasurer K S Group of Institutions	
Day4 30-07-2020 Thursday	 Dr. C S Ramesh Dean, Research & Innovation, Presidency University, Bangalore Topic: Research opportunities in Materials	 Dr. I Sridhar Professor & Head, Department of Mechanical Engineering SDM College of Engineering & Technology Topic: Natural Composites & its Applications.	PATRON Dr. K V A Balaji Principal & Director, K. S. Institute of Technology	
Day5 31-07-2020 Friday	 Dr. K Rama Narasimha Principal & Director K.S.School of Engineering & Management Topic: Computational Fluid Dynamics & its Applications		ADVISORY COMMITTEE Prof. Umashankar M HOD, Department of Mechanical Engineering, KSIT	
			Dr. Girish T R Associate Professor, Department of Mechanical Engineering, KSIT	
			CHIEF CO-ORDINATOR Prof. Anilkumar A Email: <a href="mailto:anilkumara@ksit.edu.in">anilkumara@ksit.edu.in</a> Mob: 8197975168	
			CO-ORDINATORS Prof. Ranganath N Email: <a href="mailto:ranganathn@ksit.edu.in">ranganathn@ksit.edu.in</a> Mob: 9743336296 Prof. Bharathkumar K R Email: <a href="mailto:bharathkumarkr@ksit.edu.in">bharathkumarkr@ksit.edu.in</a> Mob: 8861961392	
			ORGANIZING COMMITTEE Prof. Nagabhushana M M Prof. K. Prasad Dr. Nagaprasad K S Dr. L Nirmala Prof. Manjunath B R Prof. Harish U Prof. Parashuram A K	
			Prof. N. Sreesudha Prof. Kaushik M M Prof. Gautham S Prof. Tejaswini M L Prof. Amruth K Prof. Saleem Khan Prof. Rajesh G L	

## Speakers Certificate of Appreciation:

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<h3 style="color: blue; text-decoration: underline;">Certificate of Appreciation</h3> <p style="text-align: center;">THIS CERTIFICATE IS PRESENTED TO</p> <p style="text-align: center;"><b>Dr. AMARTNATH M</b> Assistant Professor, Indian Institute of Information Technology &amp; Manufacturing</p> <p>For sharing his valuable knowledge as a Speaker for Faculty Development Program on  <b>"Recent Advances &amp; Trends in Mechanical Engineering &amp; Material Science"</b>  on 27-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.</p>		
 Dr. GIRISH T. R Assoc. Prof, ME	 Prof. UMASHANKAR. M HOD, ME	 Dr. K. V. A. Balaji Principal / CEO

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<h3 style="color: blue; text-decoration: underline;">Certificate of Appreciation</h3> <p style="text-align: center;">THIS CERTIFICATE IS PRESENTED TO</p> <p style="text-align: center;"><b>Mr. B. V. VENUGOPAL</b> Technical Expert, Central Manufacturing Technology Institute (CMTI) - Bangalore</p> <p>For sharing his valuable knowledge as a Speaker for Faculty Development Program on  <b>"Recent Advances &amp; Trends in Mechanical Engineering &amp; Material Science"</b>  on 28-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.</p>		
 Dr. GIRISH T. R Assoc. Prof, ME	 Prof. UMASHANKAR. M HOD, ME	 Dr. K. V. A. Balaji Principal / CEO



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Tel : 080-28435722 / 24 Fax : 080 - 2835723 Email : principal.ksit@gmail.com Web : www.ksit.edu.in



## Certificate of Appreciation

THIS CERTIFICATE IS PRESENTED TO

**Dr. RANGANATH. R**

Professor & Head Department of Mechanical Engineering, SJCT

For sharing his valuable knowledge as a Speaker for Faculty Development Program on  
"Recent Advances & Trends in Mechanical Engineering & Material Science"  
on 28-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.

Dr. GIRISH. T. R  
Assoc. Prof, ME

Prof. UMASHANKAR. M  
HOD, ME

Dr. K. V. A. Balaji  
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THIS CERTIFICATE IS PRESENTED TO

**Dr. P. S. Shivakumar Gouda**

Prof. Dept. of Mechanical Engg, SDM college of Engineering & Technology, Dharwad

For sharing his valuable knowledge as a Speaker for Faculty Development Program on  
"Recent Advances & Trends in Mechanical Engineering & Material Science"  
on 30-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.

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## Certificate of Appreciation

THIS CERTIFICATE IS PRESENTED TO

**Dr. Bharath. K. N**

Associate Professor, GMIT, Davangere

For sharing his valuable knowledge as a Speaker for Faculty Development Program on  
"Recent Advances & Trends in Mechanical Engineering & Material Science"  
on 29-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.

Dr. GIRISH. T. R  
Assoc. Prof, ME

Prof. UMASHANKAR. M  
HOD, ME

Dr. K. V. A. Balaji  
Principal / CEO



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## Certificate of Appreciation

THIS CERTIFICATE IS PRESENTED TO

**Dr. C. S. RAMESH**

Dean, Research & Innovation, Presidency University, Bangalore

For sharing his valuable knowledge as a Speaker for Faculty Development Program on  
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on 30-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.

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THIS CERTIFICATE IS PRESENTED TO

**Dr. K. Rama Narasimha**

Principal & Director, K. S. School of Engineering & Management

For sharing his valuable knowledge as a Speaker for Faculty Development Program on  
"Recent Advances & Trends in Mechanical Engineering & Material Science"  
on 31-07-2020 organized by Department of Mechanical Engineering, KSIT, Bangalore.

Dr. GIRISH. T. R  
Assoc. Prof, ME

Prof. UMASHANKAR. M  
HOD, ME

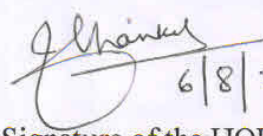
Dr. K. V. A. Balaji  
Principal / CEO



**Participants Certificates:**



  
6/08/2020  
(Atri L. Murugan . A)  
Signature of the Coordinator

  
6/8/2020  
Signature of the HOD  
Head of the Department  
Dept. of Mechanical Engg.  
K.S. Institute of Technology  
Bangaluru - 560 109.