

FACULTY OF ENGINEERING
Mechanical Engineering

Advances in Mechanical Engineering

EVENT REPORT

DEPARTMENT : Mechanical Engineering

DATE OF EVENT : 22nd and 23rd of November, 2019

VENUE : Seminar Hall (UE – 308)

KARPAGAM ACADEMY OF HIGHER EDUCATION

(Deemed to be University)

(Established Under Section 3 of UGC Act 1956)

Pollachi Main Road, Eachanari Post,
Coimbatore, Tamil Nadu 641021

Email : info@karpagam.com Web : www.kahedu.edu.in

Title of the Event : Advances in Mechanical Engineering

No of Participants: 26

About the Program:

The Faculty Development Program is an event based on creating a hub which is aimed to enhance training to the teaching faculty members of an institution. The event of two days Faculty Development Programme is organized by the Department of Mechanical Engineering is intended to share the new advancements and recent trends in Mechanical Engineering.

The training delivers a series of lectures by senior professors of the Department of Mechanical Engineering. The programme has been planned to bring up to date featuring trends in various field of Mechanical Engineering. It is aimed to focus on teaching faculties of various Institutions and the Department itself.

Programme Objectives:

- To impart knowledge to participants in the latest technological topics on production and Industrial Engineering.
- To provide opportunities in taking up advanced topics in the field of research.
- To create a congenial environment that promotes learning, growth and imparts ability to work with multi-disciplinary groups in professional, Industry and Research organizations.
- To broaden and deepen capabilities in analytical and experimental research methods.

Date / Venue : 22.11.2019 & 23.11.2019/ UE – 308 (Seminar Hall)

Participants : External & Internal Faculty members (Mechanical, Aerospace, Automobile & Civil)

Program Schedule:

Session	Speakers / Topics covered
Session – I 10.45am to 12.30pm	Dr.S.Manivannan Phase Transformation of Metals and Alloys
Session – II 01.45 pm to 03.45pm	Dr.S.Marimuthu Heuristic Search Algorithm
Session –III 09.30 am to 11.00 am	Dr.P.M.Gopal Advancements in Additive Manufacturing
Session – IV 11.15 am to 12.30 pm	Dr.C.Ramesh Kannan Advances in Cryogenic Processes
Session – V 01.30 pm to 03.00 pm	Dr.Debabrata Barik Laser Ignition of Internal Combustion Engines

Programme Description:

The Programme started with prayer song in an inaugural session and was inaugurated by Dr.G.K.D.Prasanna Venkatesan, Dean – Faculty of Engineering of Karpagam Academy of Higher Education. Dr.T.Shanmugavel, Internal Quality Assurance Cell Coordinator, graced the occasion. The programme was attended by Mr.M.Jeganathan, Assistant Professor, Department of Mathematics, Mr.A.Sivanantham, Head of the Department of Automobile Engineering, Associate Professors and other faculty members of Department of Mechanical Engineering, Karpagam Academy of Higher Education and External Participants from various Institutions.



Dr.S.Marimuthu, Professor & Head, Department of Mechanical Engineering delivered the welcome address and welcomed all the Faculty members and Participants. It was followed by the lamp; felicitation of the management; inaugural speech by the Dean, Faculty of Engineering, KAHE; FDP concept note of the programme by Dr.T.Shanmugavel, IQAC coordinator, KAHE and vote of thanks by Dr.C.Ramesh Kannan, Associate Professor, KAHE.

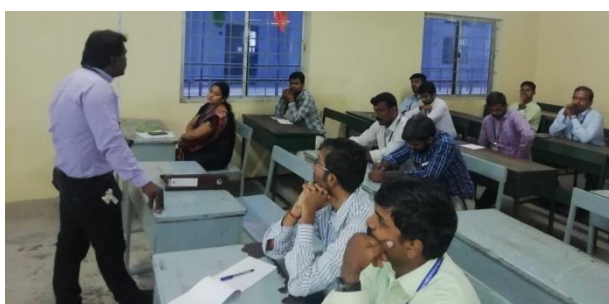


The Dean, Faculty of Engineering, KAHE inaugurated the programme with a speech focusing on Mechanical Engineering. He also focused on the current need of innovation, creativity, etc., He motivated all the faculty members to grab this kind of opportunities. The IQAC Coordinator, Dr.T.Shanmugavel delivered the concept note of the Faculty Development Programme highlighting the nature, aim and objective of the programme.



There were fifteen numbers of participants from different academic institutions and all internal faculty members of the department of Mechanical Engineering. The programme contained special lectures was conducted from 10.45 am to 04.00 pm.

Session 1 (22/11/2019)



The first technical session started on the topic “Phase Transformation of Metals and Alloys” by Dr.S.Manivannan. In this session the speaker interacted with participant in such a way that he introduced the topic so as to understand the concept briefly.

Dr.S.Manivannan delivered his speech on basic principles relating to transformations and its kinetics, states of equilibrium, Nucleation and its growth, etc., He explained the transition of metals from ductile to brittle with interesting historical events. He focused on Nucleation and Energy effects, nucleating agents and micro-structure development.

Session 2 (22/11/2019)

The second session on “Heuristic Search Algorithm” is delivered by Dr.S.Marimuthu. He explained about optimization algorithm using generation of random numbers to provide



Probabilistic technique for a better approximate solution. His speech was followed by a solution for a mechanical job and highlighted the need of scheduling algorithms and computation of time. The speaker delivered a talk about various interesting algorithms like “Ant Algorithm”, “Genetic Algorithm”, “Hybrid Evolutionary Algorithm” and “TABU search Algorithm”.

Session 3 (23/11/2019)



On the second day of Session-1 titled on “Advancements of Cryogenic Processes” was delivered by Dr.C.Ramesh Kannan. His speech on cryogenic processes make the participant to understand the concept of cryogenics and its applications. He explained the various methods of producing cryogenic temperature.

He created an exposure among the participants about storage problems of cryogenic fluids. He also talked about the methods to increase the physical and mechanical properties of engineering materials through cryogenic processing and he focused on dimensional stability and surface finish.

Session 4 (23/11/2019)

The fourth session of two days FDP is delivered by Dr.P.M.Gopal, Assistant Professor. He spoke about “Advancements in Additive Manufacturing”. He clearly instructed about the difference between Rapid prototyping and Additive manufacturing.



The speaker of this session Dr.P.M.Gopal focused on manufacturing methods with minimal wastage of resource material. He talked about Stereolithography (SLA), Laminated Object Manufacturing (LOM), Fused Deposition Modeling (FDM), 3D Printing (3DP), Selective Laser Sintering (SLS), Electron Beam Melting (EBM) and Multijet Modeling (MJM). He utmost covered all the advanced effective manufacturing methods with detailed pros and cons.

He made the session highly interactive and informative to the fresh researchers. He also explained the design freedom of 3D printing and challenges.

Session 5 (23/11/2019)



The last session of this training programme was handed by Dr. Debabrata Barik, Associate Professor. He delivered his endowed lecture on "Laser Ignition in Internal Combustion Engines". He shared his perspective from the conventional to modern era which will result a greater impact on environmental pollution. He compared and posted the Nox emission charts and its potentials. He shared his wide knowledge on energy production with eco friendly.

Last session was feedback and valedictory. The valedictory session was graced by Dr. C. Ramesh Kannan, Associate Professor, Mr. C. Nithiyapathi, Assistant Professor, Department of Mechanical Engineering, KAHE.

The session was followed by participants' feedback and distributions of certificates by Head of the Department and Event Coordinators. The programme was ended





***** END OF THE PROGRAMME*****