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A Report on Webinar
"Nanofluid Assisted Thermal Performance Optimization in Non-Circular Ducts Across Multiple Engineering Applications"
Organized by Department of Mechanical Engineering in Association with IEEE Student Chapter, MITS on 10.11.2025

Report Submitted by: Dr. A. Pruthvi Deep, Assistant Professor, Department of Mechanical Engineering; Mr. P. Mohammed Rizwan Ali, Assistant Professor, Department of Mechanical Engineering.
Resource Person Details: Dr. Shambhu Kumar Mahato, Assistant Professor, Department of Mechanical Engineering, NIT Nagaland.
Venue: Seminar Hall A
Attendance: 58
Mode of Conduct: Online
Report Received on 19.11.2025.

The Department of Mechanical Engineering, in association with the IEEE Student Chapter, organized a technical webinar on "Nanofluid Assisted Thermal Performance Optimization in Non-Circular Ducts Across Multiple Engineering Applications" on 10th November 2025. The webinar aimed to expose students to advanced heat-transfer enhancement techniques and the role of nanofluids and non-circular duct geometries in modern thermal systems. The event witnessed active participation from students and faculty members who gained valuable technical insights into emerging research areas in thermal engineering.

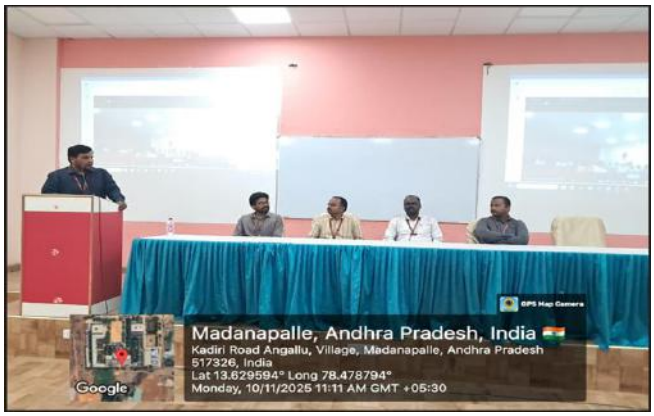
Sequence of Events

The session commenced with Mr. P. Mohammed Rizwan Ali, Faculty Member, Department of Mechanical Engineering, extending a warm welcome to Dr. S. Baskaran, Head of the Department, Dr. C. Kumar, IEEE Student Chapter Coordinator, Dr. Shambhu Kumar Mahato, resource person, and Dr. G. Veeresalingam, Faculty Member, Department of Mechanical Engineering. Following the welcome, Dr. S. Baskaran, HoD, addressed the gathering with an introductory speech, warmly welcoming the resource person and briefly highlighting the importance of the webinar topic. Subsequently, Dr. C. Kumar spoke about the objectives and activities of the IEEE student chapter.

As one of the coordinators, Dr. A. Pruthvi Deep gave a brief overview of the significance of nanofluid-assisted heat transfer and its practical applications, serving as an introduction to the topic before the technical talk. Thereafter, Mr. P. Mohammed Rizwan Ali formally handed over the session to the resource person, Dr. Shambhu Kumar Mahato, Assistant Professor, NIT Nagaland, to deliver the expert lecture.

Summary of the Session

Dr. Shambhu Kumar Mahato delivered an engaging talk on nanofluid-assisted heat transfer in twisted ducts, highlighting key outcomes from his research work. He also discussed his ongoing studies on nanofluid-based cooling of electric vehicle (EV) batteries, providing valuable insights into practical applications of advanced heat transfer techniques. The session was highly informative and gave students meaningful exposure to potential areas for future research. The webinar concluded with a vote of thanks proposed by Mr. P. Mohammed Rizwan Ali.



Outcomes and Benefits

1. Provided exposure to recent developments in nanofluid-assisted heat transfer.
2. Helped students understand the link between theory and real-world thermal applications.
3. Inspired participants to explore research opportunities in advanced thermal systems.

Acknowledgements

We sincerely thank our management, Vice-Chancellor, Registrar, Principal, Vice-Principal (Administration), Dean (School of Engineering), and the Head of the Department of Mechanical Engineering for providing us the opportunity to organize this webinar session. We are grateful to Dr. C. Kumar, IEEE Student Chapter Coordinator, for his continuous support in ensuring the smooth conduct of the event. We also extend our heartfelt thanks to the resource person, Dr. Shambhu Kumar Mahato, as well as all faculty members and students for their active involvement, which greatly contributed to the successful organization of this webinar.