

SERB-Sponsored High-end workshop (KARYASHALA)

On

Exposure on Preparation and Characterization of Nanofluids and Nanomaterials

[25-29 Oct, 2021]

Coordinator

Dr. M A Hassan



Organized by:

Department of Mechanical Engineering
National Institute of Technology
Jamshedpur, Jamshedpur



Organizing Committee

Patron: Prof. Karunesh Kumar Shukla
Director NIT, Jamshedpur
Chairperson: Prof. Shalendra Kumar
Head, MED, NIT Jamshedpur
Coordinator: Dr. M A Hassan

Advisory Committee

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Prof. Prabha Chand, MED, NIT Jamshedpur
Prof. M K Sinha, MED, NIT Jamshedpur
Dr. V R Kar, MED, NIT Jamshedpur

Resource Persons

The speakers will be mainly from IITs, and NITs.

For

Research scholars (PG/Ph.D.), faculty members of Science/Engineering, Industry personnel and Scientists

Important dates

Registration Closes on: **20 October 2021**

Notes:

- No registration fees.
- No TA/DA will be provided for attending the course.
- Kit & certificate will be provided to all successful participants.
- Refreshment would be served
- Recorded videos and training materials will be provided.

Registration Form

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Name:

Designation:

Department:

Institute:

Address:

Email:

Phone No:

Mobile No:

Qualification:

Area of specialization:

Signature of applicant

Recommendation

(Signature of Head of the Institution/Head of the Department/Supervisor with seal)

About Institute and Jamshedpur:

National Institute of Technology Jamshedpur was originally founded as the Regional Institute of Technology in 1960. Later upgraded to National Institute of Technology on 27th December 2002, with the status of Deemed University. It is now totally under the control of the Ministry of Human Resources Development (MHRD), Government of India, New Delhi, Since April 2003. The institute offers B. Tech, M. Tech., Ph. D., M.C.A., and M.Sc. degrees in various disciplines of Engineering, Sciences, and Humanities.

About the Department:

The Department of Mechanical Engineering offers an undergraduate program in Mechanical Engineering and postgraduate programs in Computer Integrated Design and Manufacturing, Thermal Engineering and Energy System Engineering, and a Ph.D. program in various research areas. The department also runs three-year certificate course in Mechanical Engineering for the employees of Tata Steel under Continuing Education Program. The Department has experienced faculty and well-established laboratories to meet the requirement of UG, PG, and Ph.D. students

**Objective:**

Nanofluids are engineered fluids having desired thermophysical properties, which is a colloidal mixture of nanoparticles and base fluid. The researchers related to thermal science are interested in Nanofluids because of elevated thermal conductivity. This course will primarily expose the participants with the method of preparation of Nanofluids, its flow and thermal characterization through hands on practice. Focus is on learning by doing. Live/onsite demonstration will be carried out for the benefit of the participants. It will enable engineers and research specialists with knowledge of nanomaterials/ fluid mechanics/heat transfer to learn the following topics:

1. Preparing Nanofluids
2. Stability Measurements
3. Rheological Measurements
4. Thermal conductivity Measurements
5. Experimental Heat Transfer of Nanofluids

Short term course topics:

- ❖ Use of mechanical stirrer, magnetic homogenizer, Ultrasonicator, pH meter etc. for nanofluid preparation
- ❖ Use of UV-VIS spectrophotometer, measurement of stability
- ❖ Stability management using surfactants and other methods
- ❖ Flow behavior of Nanofluids using rheometer
- ❖ Rotational rheometry and oscillatory rheometry
- ❖ Thermal conductivity measurement using Modified Bridgeman equation
- ❖ Use of Nanofluids in automotive car radiator: An experimental demonstration

Number of seats:

limited to 25 participants only on first come first serve basis

Accommodation:

No provision for accommodation however tea snacks will be served during workshop hours.

Registration:

- Registration can be done online through a google form. The link is given below:

<https://forms.gle/VY1MUXW2tMuZJdDN7>

- A scanned copy of the offline registration form duly filled and signed can be sent on the email id given below:

hassan.me@nitjsr.ac.in

Address for correspondence:

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