

TITLE OF THE SESSION

Computational Mechanics and Materials Engineering

SESSION ORGANIZERS:

- Dr. Anil Kumar B.S, HoD & Professor, Department of M.E, BNMIT.
- Dr. D.Shivalingappa, Professor, Department of M.E, BNMIT.
- Dr. Raghavendra N, Professor, Department of M.E, BNMIT.
- Dr. Kumarswamy, HS, Associate Professor, Department of M.E, BNMIT.
- Dr. Hemanth Kumar C, Associate Professor, Department of M.E, BNMIT.
- Babu Gowda C M, Assistant Professor, Department of M.E, BNMIT.

OBJECTIVES OF THE SPECIAL SESSION:

Material Science is becoming increasingly data intensive as experiments and simulations generate terabytes of data. Materials engineering has increasingly emphasized the importance of computational methods for materials discovery and for acceleration of new materials development. Thus, a currently developing thrust is to apply novel capabilities of computational tools, artificial intelligence and machine learning techniques to materials science for predicting structure-property relationships for new materials in conjunction with data informatics.

The aim of this special session is to present the advances in the field of computational materials science through the application of modern computational methods alone or in conjunction with experimental techniques to discover new or enhanced insights into material behavior, properties and phenomena.

TOPICS OF THE SPECIAL SESSION:

Topics to be discussed in this special session include (but are not limited to) the following:

- Predicting structure-property relationships for new materials in conjunction with data informatics,
- Novel capabilities of computational tools, technical software and shareware, or cyber infrastructures.
- Material property evaluation using finite element analysis
- Dynamic simulations of material behaviour
- Data visualization applied to experimental results
- Tribological studies on advanced materials using AI & Machine learning
- Handling large data generated out of experimental studies
- ANN applied for material characterization
- Computational fluid dynamics