

# Multiscale Modeling and AI/ML for Advanced Materials and Manufacturing Applications

Dates: 24th and 25th July 2024

Mode: Hybrid

Venue: LH-3, MSME Department

## About:

Advancement in materials is essential for technological innovation. Computational modeling of materials at multiple length and time scales provides deeper insights into the physical mechanisms of materials' behavior and yields pathways to tune materials processing, structure properties for advanced applications. Data generated using physics-based computational models offer a unique opportunity to develop machine learning models that can learn materials' intrinsic behavior and, in return, accelerate materials discovery efforts for advanced applications. The objective of this workshop is to give participants a flavor of current state-of-the-art multiscale modeling and data science techniques that can enable accelerated development of materials for advanced applications. Workshop will involve theory and demonstrations on physics-based models, and materials informatics, AI/ML techniques.

## Speakers:



Prof. Surya R. Kalidindi  
(Georgia Tech, USA)



Prof. Abhik N Choudhury  
(IISc Bangalore)



Prof. Rajdip Mukherjee  
(IIT Kanpur)



Prof. Saswata Bhattacharya  
(IIT Hyderabad)



Prof. A. Rajagopal  
(IIT Hyderabad)



Prof. Manish K Niranjana  
(IIT Hyderabad)



Prof. Anuj Goyal  
(IIT Hyderabad)

Scan to Register :

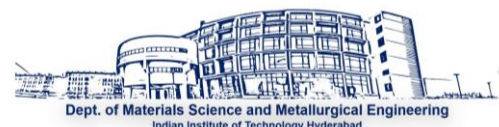


## Registration Link:

[https://docs.google.com/forms/d/e/1FAIpQLScb7Y2tjHrApFMc7qU51uEFD\\_3LsQjOaakpvkiXJdkZUziFag/viewform?usp=pp\\_url](https://docs.google.com/forms/d/e/1FAIpQLScb7Y2tjHrApFMc7qU51uEFD_3LsQjOaakpvkiXJdkZUziFag/viewform?usp=pp_url)



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్  
भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad



Dept. of Materials Science and Metallurgical Engineering  
Indian Institute of Technology Hyderabad

# Schedule

Day 1 (24 <sup>th</sup> July)	
10:30 – 11:15	<b>Introduction to Materials Informatics</b> Prof. Surya Kalidindi, Georgia Institute of Tech., USA
11:15 – 11:45	Break
11:45 – 12:30	<b>Advanced Topics in Materials Informatics</b> Prof. Surya Kalidindi, Georgia Institute of Tech., USA
13:00 – 14:00	Lunch
14:00 – 15:30	<b>Session by Multiscale Technologies</b>
Day 2 (25 <sup>th</sup> July)	
09:00 – 10:30	<b>First principles Modelling of Materials</b> Prof. Anuj Goyal, IIT Hyderabad Prof. Manish Niranjana, IIT Hyderabad
10:30 – 11:00	Break
11:00 – 12:30	<b>Phase Field Modelling of Microstructure Evolution in Materials</b> Prof. A. Rajagopal, IIT Hyderabad Prof. Saswata Bhattacharya, IIT Hyderabad
13:00 – 14:00	Lunch
14:00 – 15:30	<b>Phase Field Modelling of Microstructure Evolution in Materials</b> Prof. Rajdip Mukherjee, IIT Kanpur Prof. Abhik N Choudhury, IISc Bangalore

