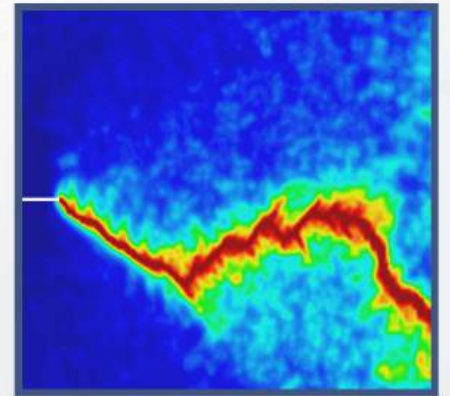
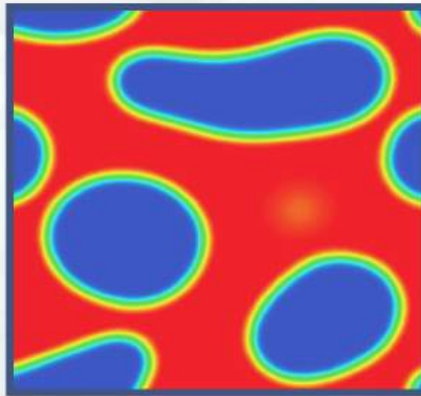
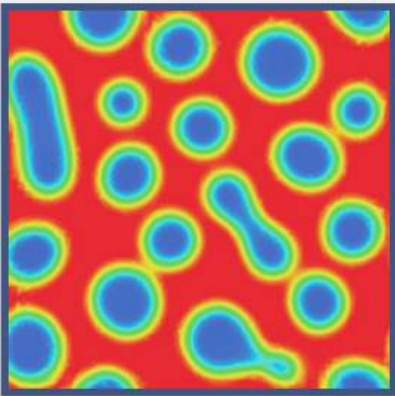


INTERNATIONAL WORKSHOP
ON
NONLOCAL MECHANICS APPROACHES
FOR MODELLING LOCALIZED DEFORMATIONS

APPLICATIONS TO FATIGUE, FRACTURE AND DAMAGE IN ENGINEERING MATERIALS AND STRUCTURES

NMAMLD 2026

14 - 16 DECEMBER 2026



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

INDIAN INSTITUTE OF TECHNOLOGY, HYDERABAD, INDIA

Overview

Nonlocal mechanics provides a robust theoretical and computational framework for modelling localized response in engineering materials and structures. Unlike classical (local) continuum models, nonlocal approaches incorporate spatial interactions through intrinsic material length scales, enabling objective and mesh-independent simulation of strain localization, damage evolution, crack initiation, and crack propagation.

In fatigue and fracture applications, nonlocal formulations effectively capture the transition from distributed micro-damage to macro-crack formation under quasistatic, dynamic, and cyclic loading conditions. By regularizing strain softening and damage localization, these models overcome current numerical pathologies and ensure physically meaningful predictions of structural response.

Nonlocal approaches—including integral-type models, gradient-enhanced formulations, and phase-field methods—are particularly suited for analysing complex failure mechanisms in metals, composites, concrete, and advanced engineering materials. Their ability to couple cyclic plasticity, damage mechanics, and fracture evolution makes them powerful tools for fatigue life prediction, crack growth modelling, and structural integrity assessment.

The application of nonlocal mechanics significantly enhances predictive accuracy, computational stability, and reliability in the analysis and design of aerospace, automotive, civil, and mechanical engineering systems.

The Nonlocal Approaches for Modelling Localized Deformations (NMAMLD) – International Workshop provides a comprehensive overview of advanced modelling approaches in the mechanics of elastic and inelastic materials and structures. The workshop places special emphasis on the objective description of highly localized deformation phenomena such as damage, fracture, fatigue, and shear bands under quasistatic, dynamic, and cyclic loading conditions.

The earlier editions of the workshop, held in 2020 and 2022 at IIT Hyderabad, addressed the fundamental and computational aspects of nonlocal and gradient-enhanced theories. These editions attracted participants from more than 16 countries, with over 150 delegates attending from around the world.

Objectives of the International Workshop

The 2026 edition of the workshop will focus on applications of nonlocal approaches to fatigue, fracture, and damage in engineering materials and structures.

Benefits of attending the Workshop

This international workshop will feature eminent researchers sharing their latest findings in the field of nonlocal and nonlinear mechanics. It is designed to provide graduate students, engineers, and researchers from aerospace, automotive, civil, and mechanical engineering, as well as materials and manufacturing industries, with a comprehensive understanding of the theory and applications of nonlocal and nonlinear mechanics approaches for modelling localized elastic and inelastic deformations.

Publication

The invited talks presented at the symposium will be brought out as a Special Issue in an International Journal. The delegates will be shared with a book of abstracts of the talks presented at the Workshop.

Important Dates

Last date for receipt of applications: 30th May 2026.

Notification to participants: 30th June 2026.

Dates of the Workshop: 14-16th December 2026.

Registration Fees

For India participants from academic institutes in India: **Rs 15,000/-**

For India participants from industry: **Rs 20,000/-**

For Foreign Delegates from academia and Industry: **\$400**

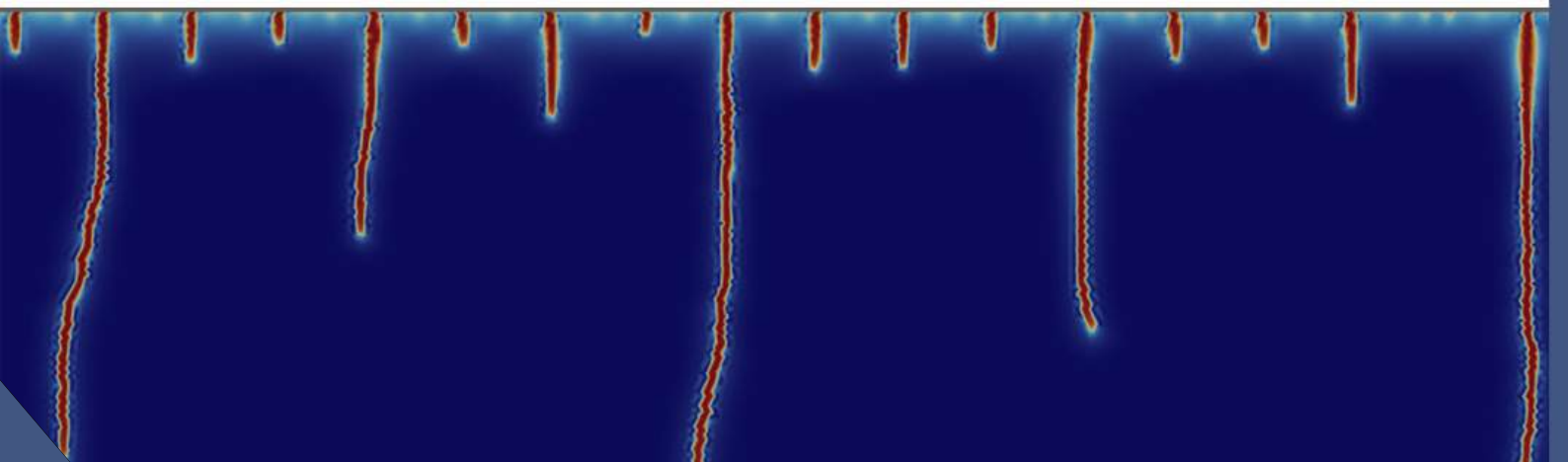
All the registration fee can be paid through the following payment gateway link [CLICK HERE](#)

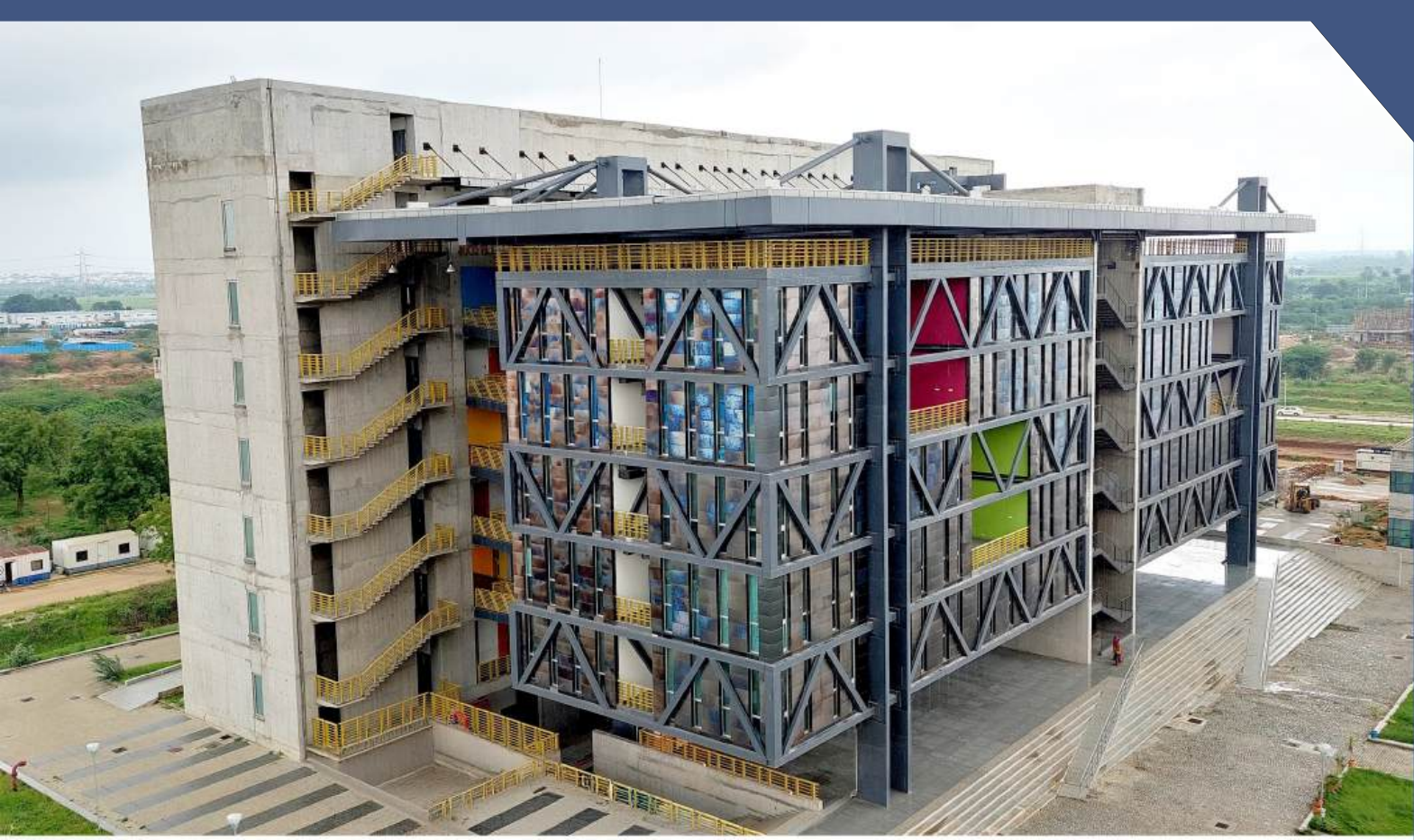
The Registration Fee includes access to all lectures, course material, reference book (if any), lunch/coffee/tea on all three days and the Workshop Dinner.

Accommodation

Accommodation will be provided at IIT Hyderabad Guest house on Chargeable basis. Students will be provided accommodation in hostels

For more details visit the following workshop webpage - [CLICK HERE](#)





About IIT Hyderabad

IIT Hyderabad is one among the 2nd generation of IITs started by the Govt. of India. Today IITH offers 11 B.Tech programs, 1 B.Des Program, 3 M.Sc programs, 18 M. Tech programs, 1 M.Des program, 1 MA Program and 15 Ph.D. programs in all branches of engineering, science, liberal arts and design. IIT Hyderabad offers 2 years M. Tech Program to the foreign Nationals in 9 different departments. The very foundation of IIT Hyderabad is based on research and innovation. The vibrant research culture is evident from the number of patents and publications that IITH has. At IITH students are given with a plethora of choices, which they diligently choose with the help of a faculty advisor. Courses that last for a semester are almost a foregone story at IITH. From 2014-2015 academic year onwards all B. Tech programs started offering courses that are of smaller credits; called the fractal academics; very carefully designed to keep the enthusiasm of the students and to keep them in pace with the state of the art from 1st semester till 8th semester.

IITH in the past couple of years has been highly successful in building tie-ups with leading academic institutions around the globe. IITH enjoys a very special relationship with Japanese Universities and Industries that goes beyond academic and research collaborations. In fact, some of the iconic buildings in IITH campus will carry the signature of Japanese architecture. IITH is creating a unique holistic educational ecosystem that offers interactive learning, a highly, flexible academic structure, cutting-edge research, strong industry collaboration, and entrepreneurship. It is providing an environment wherein students and faculty are not afraid to translate their dreams into realities.



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

Contact:
Prof.Amirtham Rajagopal
Convenor NMAMLD
Department of Civil Engineering
rajagopal@ce.iith.ac.in
Ph : +91 40 2301-6303
Website : nmamld2026.com