

INTERNATIONAL CONFERENCE ON NONLOCAL MECHANICS APPROACHES FOR MODELLING LOCALIZED DEFORMATIONS

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

NMAMLD 2026

Celebrating the 80th Birthday of
Prof. J. N. Reddy

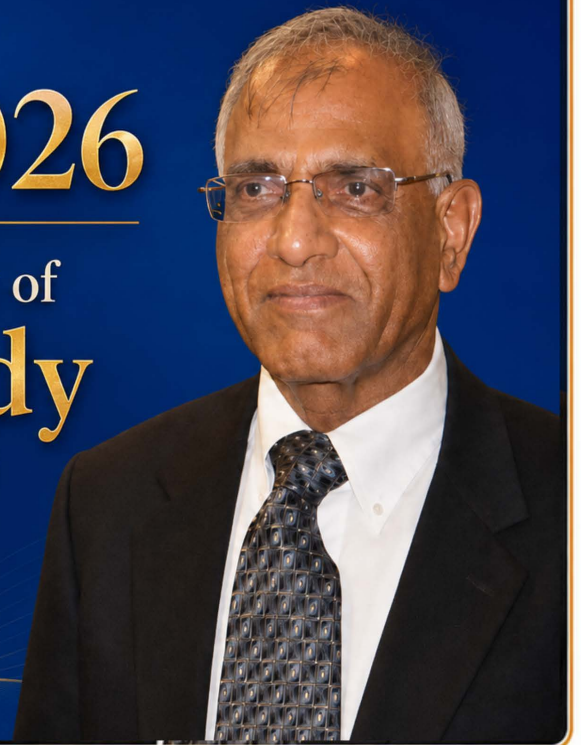
*In honour of his immense contributions to
Mechanics and Computations*



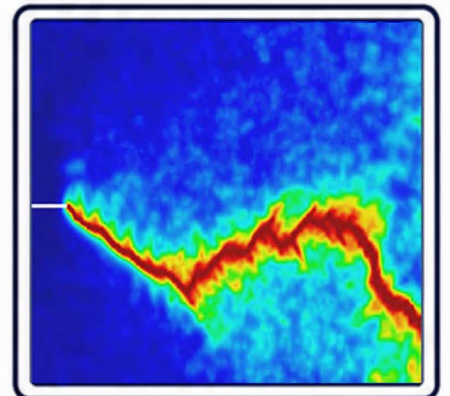
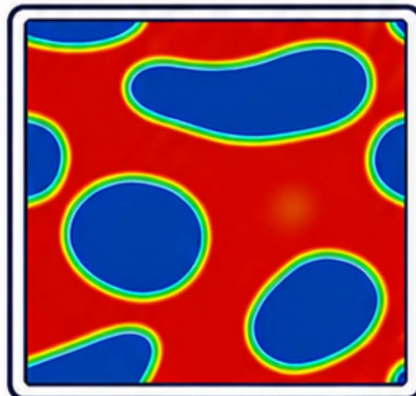
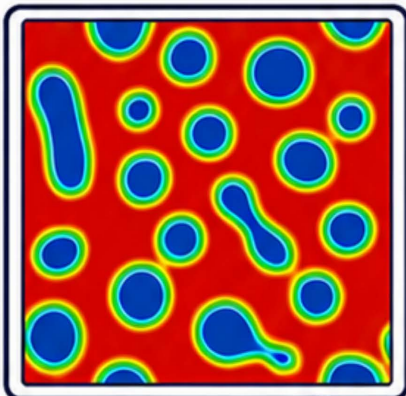
Professor, Mechanical Engineering, Texas A&M University



Member, National Academy of Engineering



• 14 - 16 DECEMBER 2026 •



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

Overview

Nonlocal mechanics provides a robust theoretical and computational framework for modeling 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 quasi-static, 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 modeling, 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 system

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

The earlier editions of the Conference, 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 Conference

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

Benefits of attending the Conference

This international Conference 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 modeling 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 Conference.

Important Dates

Deadline for abstract submission: August 30, 2026

Notification of acceptance: September 30, 2026

Deadline for submission of a 10-page full-length paper (for accepted abstracts): October 30, 2026

Last date for registration: October 15, 2026

Dates of Conference: 14 - 16 December, 2026

Abstract submission: [Click here](#)

<https://nmamld2026.com/call-for-papers>

Registration Fees

For India participants from academic institutes (Students): **Rs 10,000/-**

For India participants from academic institutes (Faculty): **Rs 15,000/-**

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

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

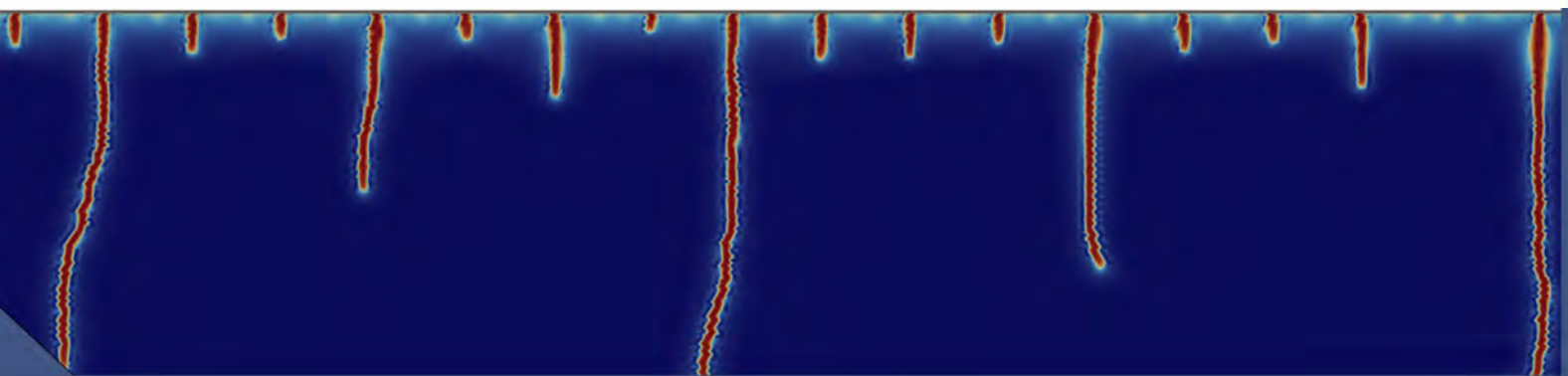
For registration and fee payment, please visit: <https://nmamld2026.com/registration>

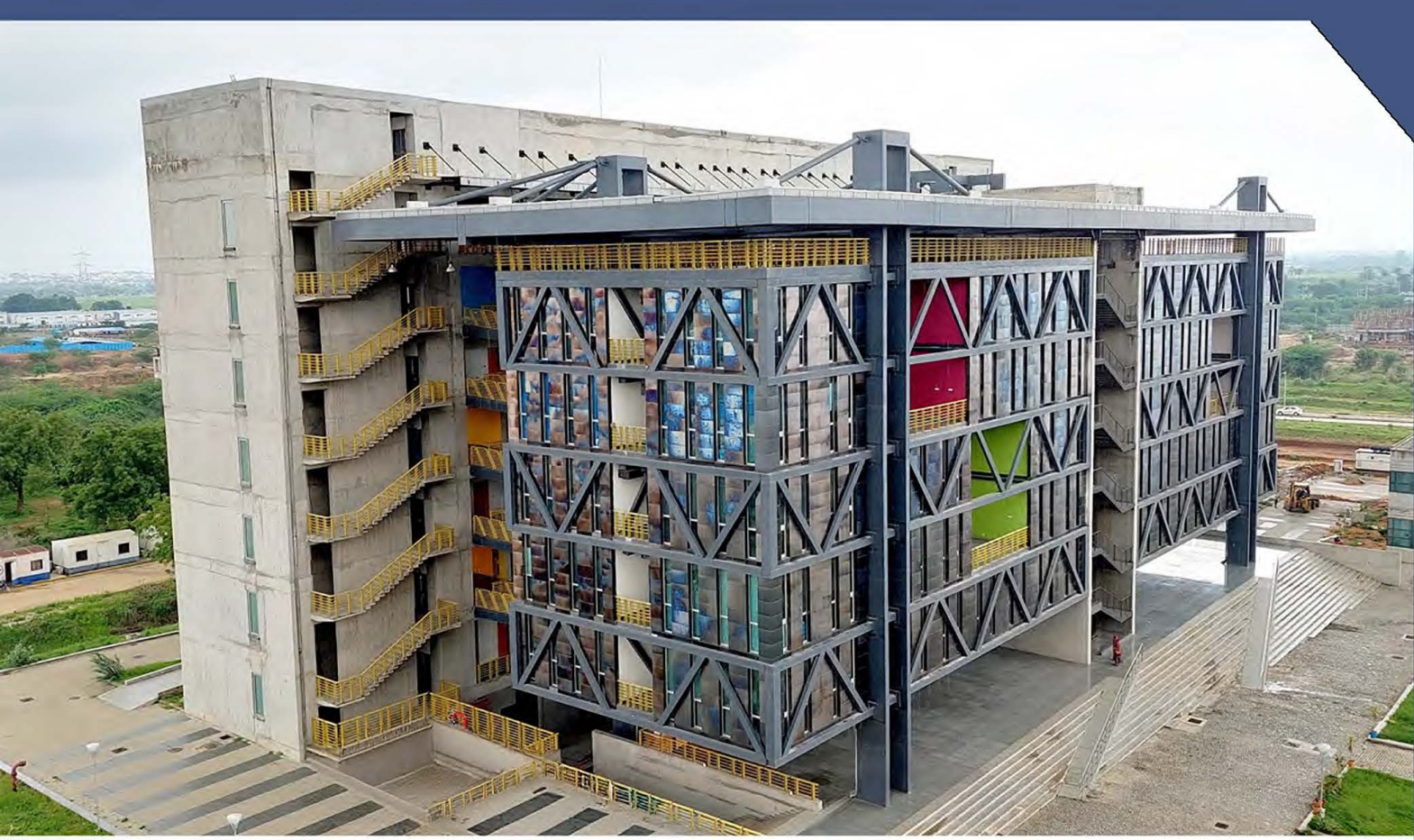
The Registration Fee includes access to all lectures, course material, reference book (if any), lunch/coffee/tea on all three days and the Conference Dinner.

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 conference 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.



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