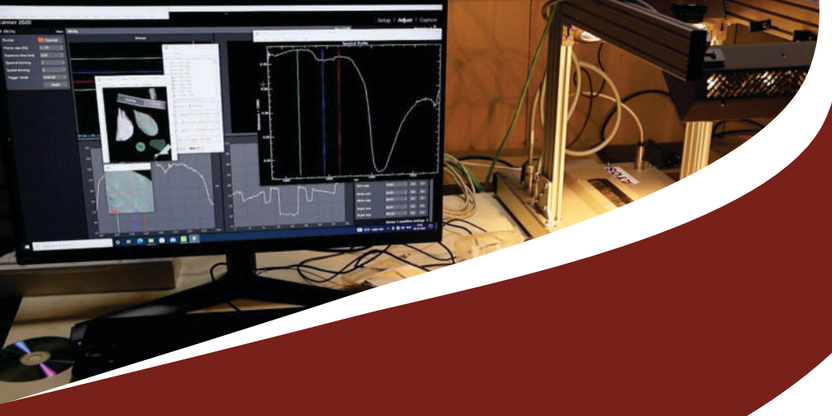
CNDE

Center For Non-Destructive Evaluation

Globally Recognised Research Center In Non-Destructive Evaluation

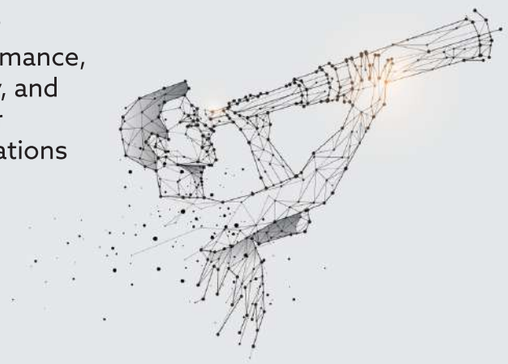


About CNDE

The Center for Nondestructive Evaluation (CNDE) was established at the Indian Institute of Technology, Madras, in April 2001. It is Asia's leading academic center for research and technology translation in Nondestructive Evaluation (NDE).

MISSION

Deep-research based non-destructive technologies for improved performance, enhanced safety, and increased life for industrial applications



VISION

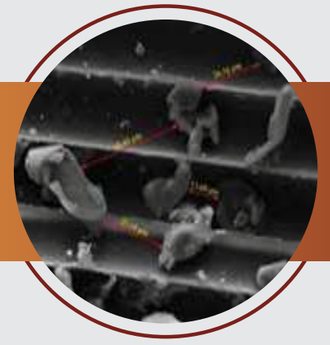
To become the world's largest Deep-research and technology translational center in the field of NDE

Focus Area

Nondestructive Imaging & Evaluation

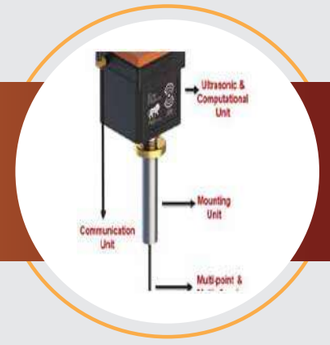
Faster, Economical, and Reliable inspection for improved performance and safety

Structural Health Monitoring



Continuous Monitoring for Life Extension and safety assurance

Measurements



Temperature and process parameter measurement at hostile & harsh environments

Applying the entire spectrum of Ultrasound and Electromagnetic for Industrial Inspection

Impact

100+ IPs
13+ Startups
1200+ Professionals

500+ Journal Papers
700+ Conference Papers

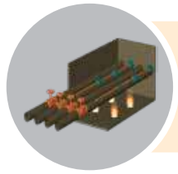
40+ Patents
50+ Products

60+ PhD
85+ MS
5 Postdocs
200+ BTech/MTech/DD

Research Themes

Ubiquitous Sensing
Fiber Optic/Ultrasonic waveguides,
Nano-functional Sensors

Structured Materials for Imaging
Meta-materials based imaging & sensors. Patterned surfaces for improved inspection. Nano-structured coatings



Edge Intelligence & Soft-Sensing
AI enabled rapid computations. Simulated Assisted Decision Process. Distributed computational Algorithms. Reduced Order Computations

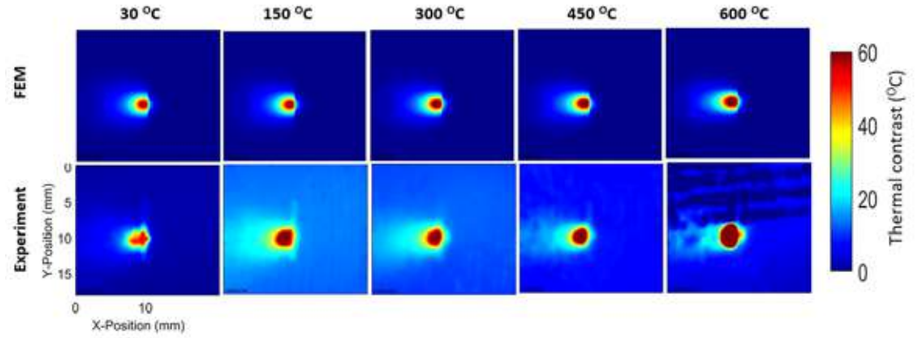
Wide Inspection Technologies
Wide Multi-spectral Imaging (THz, IR, X-ray).
Multi-modality Fusion Algorithms

Remote and Pervasive Inspection
Autonomous Robots. Swarm Inspection Robots

Fiber optic sensing for SHM

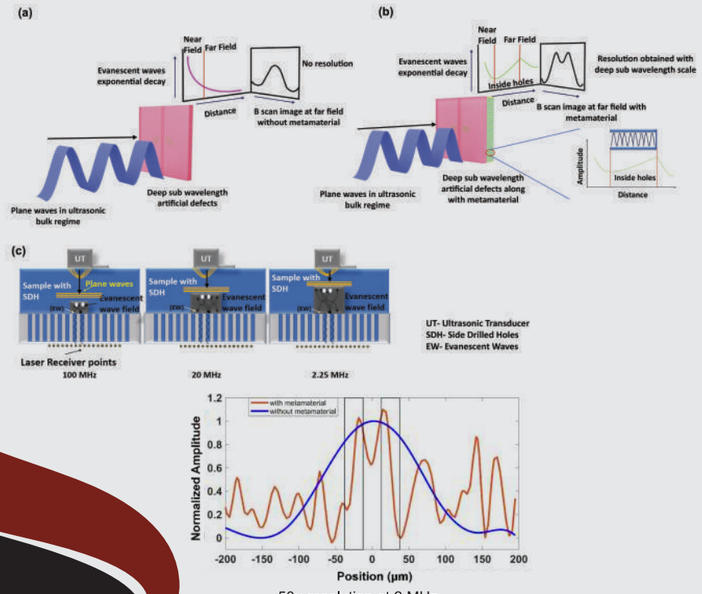
Distributed acoustic, Temperature and strain sensing

Laser Spot Thermography-defect detection in mild steel at 600 deg C



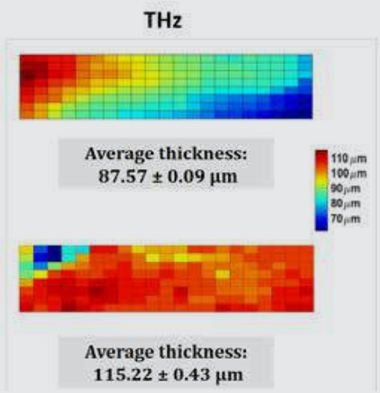
Laser spot thermography for defect detection on mild steel at higher temperatures (30–600°C)

Super resolution UT Imaging using Meta-materials



50u resolution at 2 MHz

THz Imaging- Thermal barrier coating



Phased array UT @ 950 Deg C Monitoring of solid liquid interface in castings of steel

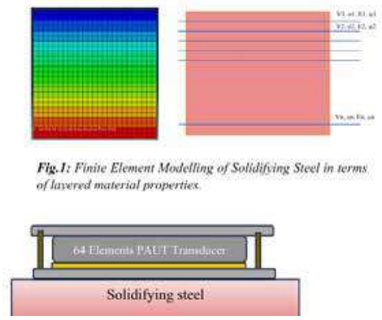
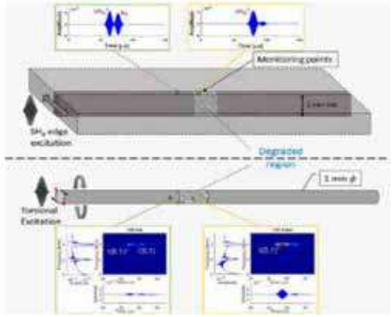
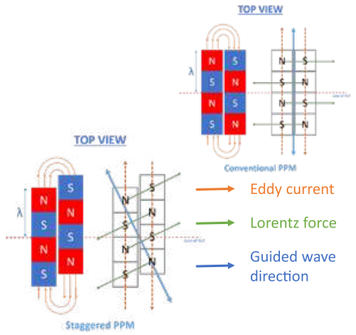


Fig.1: Finite Element Modelling of Solidifying Steel in terms of layered material properties.

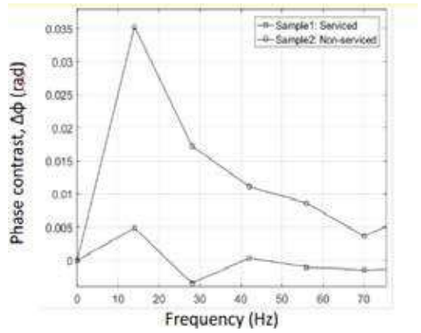
Second harmonic guided wave Generation and its sensitivity to early material damage

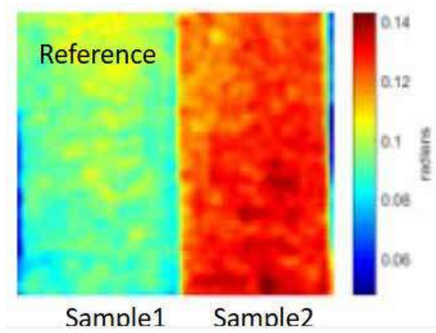


Staggered EMATs for Pipe line inspection using guided waves



Phase contrast Thermography- Thermal barrier coating

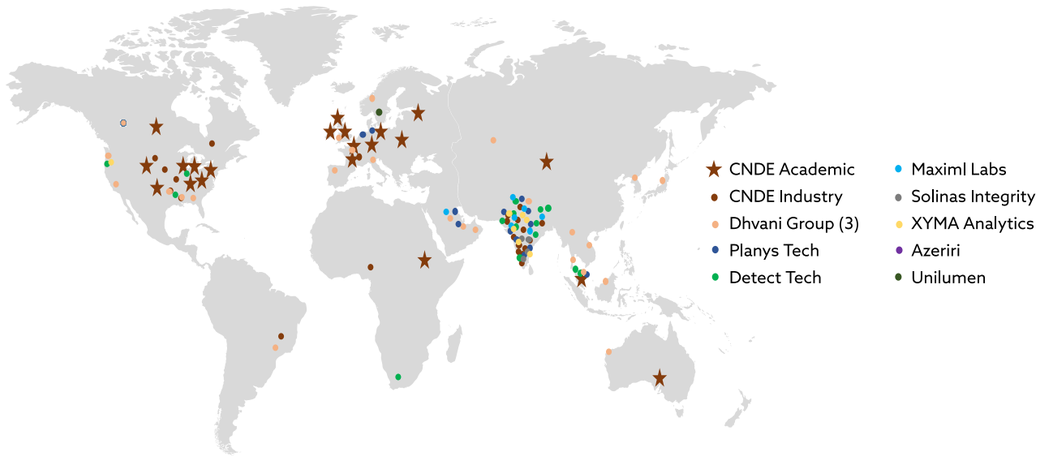


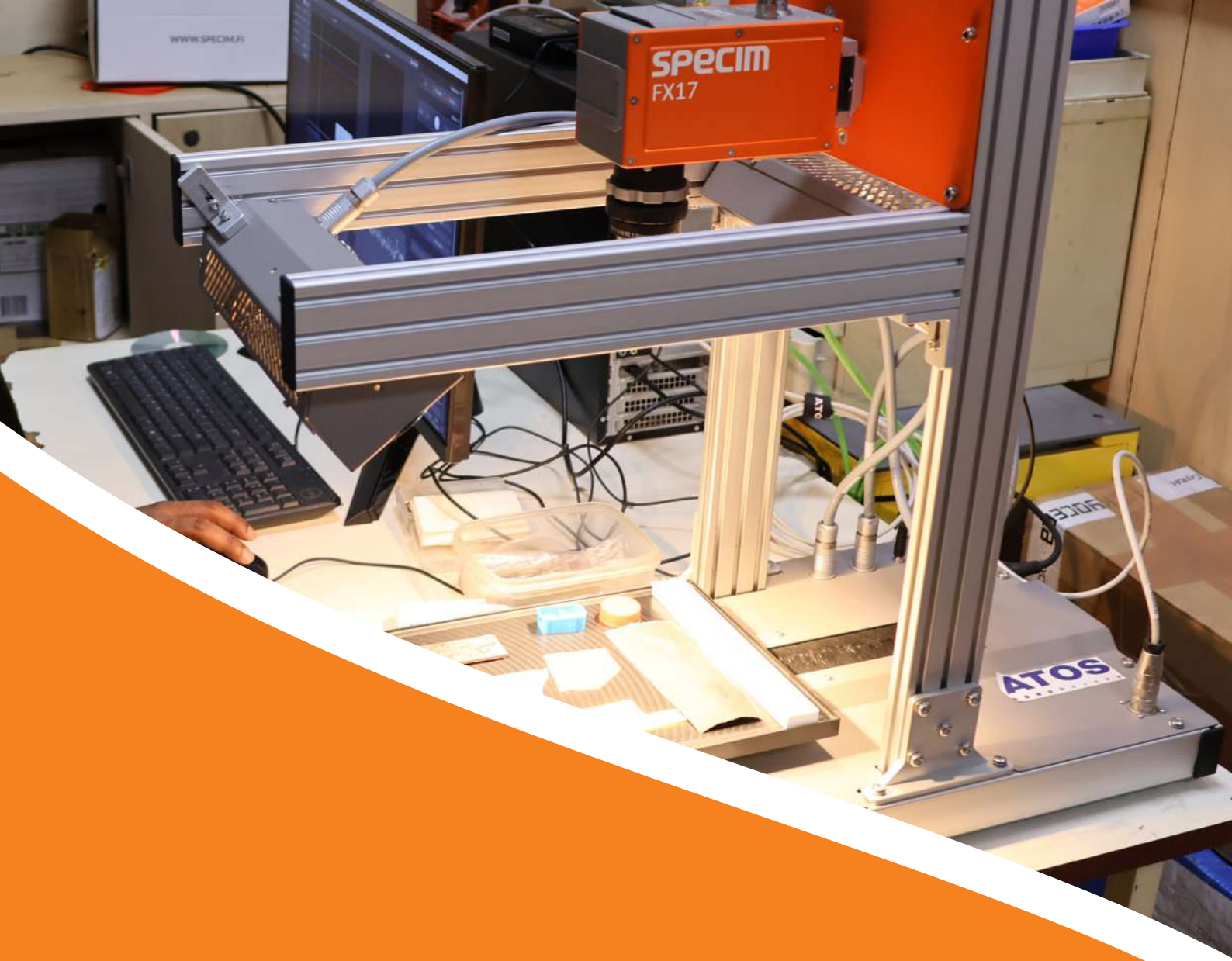


National Consortium for NDE (NCNDE)

The NCNDE aims to tackle the real-world challenges that stakeholders face in non-destructive evaluation (NDE) and structural health monitoring (SHM) through collaborative research and creating top-tier resources for NDE.

Our Partners





Contact Us

Prof. Krishnan Balasubramanian
Head & Professor
Email: balas@iitm.ac.in
Phone: +91 44 2257 4662

Prof. Prabhu Rajagopal
Deputy Head & Professor
Email: prajagopal@iitm.ac.in
Phone: +91 44 2257 4741

V.Manoharan
CEO, CNDE
Phone : + 91-9740643152
Email: ceo@cnde.in

Room 312, Machine Design Section, IIT Madras , Chennai - 600036
www.cnde.in | cnde.in@gmail.com