

# **CONFERENCE INAUGURATION**

**HALL: BHABHA**

**THURSDAY, 24<sup>TH</sup> NOVEMBER 2022 - 9:30 - 11:00 HRS**

## **INAUGURATION OF EXHIBITION & TEA BREAK**

**24<sup>TH</sup> NOVEMBER 2022 - 11:00 - 12:00 HRS**

## **MEMORIAL TALKS**

**24<sup>TH</sup> NOVEMBER 2022 - 12:00 -13:30 hrs**

Hall	Hall A: BHABHA			
Session Chairperson:	Dr. Krishnan Balasubramaniam, Professor, IIT-Madras			
Time	Name of Memorial Talk	Title of the talk	Name of the Speaker	Organization
12:00-12:45	Dr.Baldev Raj Memorial Talk	How can India change the NDE game?	Dr. Ripi Singh, Chief of Innovation & Strategy	Inspiring Next, USA
12:45-13:30	Mr Ramesh Bhai Parikh Memorial Talk	Recent Developments in NDE of Nuclear Fuel and Structural Components	Dr. Komal Kapoor	Nuclear Fuel Complex, DAE, India

***13:30-14:30 LUNCH***

## **PANEL DISCUSSION ON NDE 4.0**

**24<sup>TH</sup> NOVEMBER 2022 - 14:30 -15:30 hrs**

Session Number	Special Session on NDE 4.0
Hall	Hall A: BHABHA
Moderators	Dr. Ripi Singh and Dr. M.T. Shyamsunder
Time	14:30-15:30 h

## Open Session (Visit to Exhibition)

**24<sup>TH</sup> NOVEMBER 2022 - 14:30 -15:30 hrs**

### PLENARY SESSION: I

**24<sup>TH</sup> NOVEMBER 2022 - 16:00 -17:00 hrs**

Session Number	Plenary Session : 1		
Hall	Hall A: BHABHA		
Session Chairperson:	Dr. Shyamsundar Mandayam		
Time	Title of the talk	Name of the Speaker	Organization
16:00-16:30	Importance of NDT Personnel Certification & Implementation of ISO 9712:2021 by Certification Body	Dr.Sajeesh Kumar Babu, Chairman	ICNDT
16:30-17:00	Digital Inspection for Radiography and CT	Dr. Debashish Mishra	GE Research, India

*17:00-17:30 Tea Break (Exhibition Area)*

## SENSORS & DEVICES FOR SHM

**24<sup>TH</sup> NOVEMBER 2022 - 17:30 -19:00 hrs**

Session Number	1A			
Hall	Hall A: BHABHA			
Session Chairperson:	Prof. Balaji Srinivasan			
Keynote Speaker(s):	Dr.Sarmishtha Palit Sagar			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
17:30-18:00	IT1	Sensors & Devices for Industrial Applications @CSIR-NML	Dr.Sarmishtha Palit Sagar	National Metallurgical Laboratory, CSIR
18:00-18:15	CP34	Nanoengineered Smart Composite Sensor for Electromechanical Impedance based Damage Monitoring in Concrete Structures	Rajani Kant Rao	CSIR-Structural Engineering Research Centre

18:15-18:30	CP57	Challenges and Opportunities offered by FBG sensors for Guided waves based Structural Health Monitoring	Soman Rohan	ETH Zurich, IMP PAN
18:30-18:40	CP72	PEC GMR Sensor for Crack detection in Multi layered Airframe Structures	Dutta Chandan	CSIR - NML, CSIR-NML
18:40-18:50	CP73	Eddy Current Inspection of In Service Component Using LTCCEC Sensor at High Temperature	Dutta Chandan	CSIR - NML, NIT-Jamshedpur
18:50-19:00	CP99	Railway Track Surface Crack Detection using Passive Wireless RFID Sensor A Preliminary Study	Suresh Setti	National Institute Of Technology, Tiruchirappalli
19:00-19:10	CP60	Characteristic Study of Capacitance Based Sensor for pH Monitoring of Viscous Fluids	Chaudhary Rajan Hareshbhai	Indian Institute Of Technology, Madras

\*10 Minutes Presentation

## THERMOGRAPHY-I

**24<sup>TH</sup> NOVEMBER 2022 - 17:30 -19:00 hrs**

Session Number	1B			
Hall	Hall B: KALAM			
Session Chairperson:	Dr. Geetika Dua			
Keynote Speaker(s):	Dr. Lalat Indu Giri			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
17:30-18:00	IT2	Thermal Imaging for Biomedical Instrumentation & Agriculture Electronics	Dr. Lalat Indu Giri	NIT-Goa
18:00-18:15	CP107	Detection of Inclusions in Mild Steel using Digitized Frequency Modulated Thermal Wave Imaging	Sharma Anshul	IIIT Una and IIT-Delhi
18:15-18:30	CP109	Complementary Golay Coded Excitation Schemes for Thermal Non-destructive Testing and Evaluation of Sandwich Structures	Arora Arora	Indian Institute of Technology Delhi, SS Automation
18:30-18:40	CP155	High Resolution Induction Thermography for MicroCrack Detection on Ti6Al4V Alloys	Nithin Puthiyaveettil	DMRL- HYDERABAD AND IIT MADRAS
18:40-18:50	CP139	Image Classification in Non Destructive Evaluation Applications using Quantum Algorithm	Anurag Dubey Anurag	Indian Institute of Technology Madras
18:50-19:00	CP146	Data driven Multi fidelity Deep Neural Networks for the Evaluation of Thermal Barrier Coatings using Infrared Thermography	K P Sruthi Krishna	Indian Institute of Technology Madras
19:00-19:10	CP110	Unsupervised Deep Learning in Infrared Thermography for Automatic Defect Detection	Mrs Y. Naga Prasanthi	Amritha Sai Institute of Science and Technology, Koneru Lakshmaiah Educational Foundation

\*10 Minutes Presentation

## PHASED ARRAY UT/TFM

**24TH NOVEMBER 2022 - 17:30 -19:00 hrs**

Session Number	1C			
Hall	Hall C: RAMAN			
Session Chairperson:	Dr. Krishnan Balasubramaniam			
Keynote Speaker(s):	Dr.Anish Kumar			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
17:30-18:00	IT3	Phased array ultrasonic testing of austenitic weld joints	Dr.Anish Kumar	Indira Gandhi Center for Atomic Research
18:00-18:15	CP180	Advanced PAUT and FMCTFM on High Performance and Small Size Open Electronics	T Cyril	The Phased Array Company
18:15-18:30	CP40	Selection of Imaging Modes in Multi-Mode Plane Wave Phased Array Ultrasonic Imaging for Characterisation of Misoriented Planar Defects	C Sashank	NIT-Warangal & Indira Gandhi Center for Atomic Research
18:30-18:45	CP179	Introduction to Phase Coherence Imaging	Mohammad Arshad Uddin	Evident Scientific Private Limited
18:45-19:00	CP163	Advanced Ultrasonic Inspection of Unique Weld Joining Contrast Material Weld Being Third Composition Weld Inspection of Inconel welds joining Carbon Steel with Stainless Steel	Dharmveer Singh	STORK

\*10 Minutes Presentation

## ELECTROMAGNETIC NDE

**24TH NOVEMBER 2022 - 17:30 -19:00 hrs**

Session Number	1D			
Hall	Hall D: FARADAY			
Session Chairperson:	Dr. Thirunavukkarasu			
Keynote Speaker(s):	Dr. Kavitha Arunachalam			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
17:30-18:00	IT4	UHF sensors for structural health monitoring of high power equipment	Dr. Kavitha Arunachalam	Indian Institute of Technology Madras
18:00-18:05	Sponsorer	Techno Four Slot	Techno Four Slot	Techno Four
18:05-18:20	CP54	Eddy Current Array Technique For LHB Wheel Coaches	Behera Abinash	Abinash Engineering Services
18:20-18:35	CP29	Preliminary numerical investigation on the use of chip inductor for eddy current testing	Arunachalam Kavitha, S. Ezhil	Indian Institute of Technology Madras
18:35-18:45	CP174	Numerical Analysis of SH Waves using Permanent Periodic Magnets EMATs	Garewal Pranaydeep	Indian Institute of Technology Madras
18:45-18:55	CP157	Defect detection inside the pipeline using EMAT over an EndoBot crawler	KUMAR Aishwarya	CNDE IITM, Indian Institute of Technology Madras

\*10 Minutes Presentation

## **NDE 4.0, AI, MACHINE VISION, IMAGE PROCESSING-I**

## 25TH NOVEMBER 2022 - 09:00 -11:00 hrs

Session Number	2A			
Hall	Hall A: BHABHA			
Session Chairperson:	Dr. Daniel Kanzler			
Keynote Speaker(s):	Dr. Iikka Virkunen, Dr. Ajay Pasupuleti			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT5	AI for NDE	Dr. Iikka Virkunen	Trueflaw Ltd.,
09:30-10:00	IT6	Busting the dam for inspection data lakes with an NDE collaboration platform	Dr. Ajay Pasupuleti	Ooga Technologies, USA
10:00-10:15	CP114	Defect Sizing from Magnetic Flux Leakage Images using Machine Learning Technique	W. SHARATCHANDRA SINGH	Indira Gandhi Centre for Atomic Research
10:15-10:30	CP58	Deep Learning Based Automatic Change Detection for Very High Resolution Remote Sensing Images	DEVESH KUMAR	ADRIN
10:30-10:40	CP113	Simulation assisted Deep Learning for automated defect detection and characterization for Casting components using TFM imaging	P L Sudharsan	Indian Institute of Technology Madras
10:40-10:50	CP145	Data Driven Approach for Identification of Damage in Composites	SUBHADEEP BASU	TCS Research
10:50-11:00	CP144	Testing and Evaluation of Glass Fibre Reinforced Polymer sample using Principal Component Analysis	DAS Priyanka	INDIAN INSTITUTE OF TECHNOLOGY DELHI

\*10 Minutes Presentation

## - END OF DAY 1 OF CONFERENCE

*19:30- ONWARDS- Musical Night and Networking Dinner  
(Conference Venue)*

## THERMOGRAPHY-II

25<sup>TH</sup> NOVEMBER 2022 - 09:00 -11:00 hrs

Session Number	2B			
Hall	Hall B: KALAM			
Session Chairperson:	Dr. Ravibabu Moolaveesala			
Keynote Speaker(s):	Dr. Geetika Dua			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT7	Machine Vision Applications for Detection and Characterization of Defects in Industrial Materials	Dr. Geetika Dua	Thapar Institute of Engineering and Technology
09:30-09:45	CP84	Infrared Thermography for Semi transparent Media Application in Optical Fiber Glass Drawing Process	Ghosh Sayantan	STERLITE TECHNOLOGIES LTD. (STL)
09:45-10:00	CP105	Digitized Frequency Modulated Thermal Wave Imaging for the Titanium Implants	Sharma Anshul	Indian Institute of Information Technology Una, Indian Institute of Technology Delhi
10:00-10:15	CP20	Pulse Thermography for Corrosion Detection in a Multilayer Structure	C Chandraprakash	IIT Kanpur

10:15-10:25	CP124	Thermography Based Defect Detection with Neural Networks	Dua Geetika	Thapar Institute of Engineering and Technology
10:25-10:35	CP186	Overview on Advanced Thermal Nondestructive Testing and Evaluation Methods	Singh Ishant	Indian Institute of Technology, Delhi
10:35-10:45	CP158	Convolutional Neural Network Algorithm for IR Thermal Image Interpretation in Electrical Inspection and its Validation	Nicholas Arthur	University of Technology and Applied Sciences, Ibri, Oman
10:30-10:40	CP112	Application Of Pixel Level Data Fusion in Pulsed Thermography	MB Sobhanan	VSSC
10:40-10:50	CP156	Micro Crack Detection Using Laser Thermography Experimental and Numerical Investigation	NITHIN PUTHIYAVEETIL	DMRL HYDERABAD, IIT MADRAS
10:50-11:00	CP56	Data Driven Simulation Assisted Physics Learned AI DPAI For Simulating Heat Diffusion In Voronoi Based Polycrystalline Material	NISHI RAJESH BHEMANI Nishi Rajesh	Indian Institute of Technology Madras

\*10 Minutes Presentation

## OPTICAL, TERAHERTZ, MICROWAVE

**25<sup>TH</sup> NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	2C			
Hall	Hall C: RAMAN			
Session Chairperson:	Prof. Prabhu Rajagopal			
Keynote Speaker(s):	Dr. Bala Pesala, Dr. Deepak Ghodgaonkar			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT8	Terahertz Technologies Transition from Lab to the Market: Opportunities and Challenges	Dr. Bala Pesala	Adjunct Professor, IIT Jodhpur & SRM University, India
09:30-10:00	IT9	Microwave Non-destructive Testing (MNDT) of Composite Materials and Structures using Free-Space and Other Techniques	Dr. Deepak Ghodgaonkar	Dhirubhai Ambani Institute of Information and Communication Technology, India
10:00-10:15	CP92	Pulsed Terahertz Spectroscopy for Non-Destructive Microstructure Evaluation of Coatings	KULKARNI ADITYA	GE RESEARCH, GE INDIA INDUSTRIAL PVT LTD
10:15-10:30	CP175	Development of Compact Cost effective Terahertz Imaging System for NDE applications	Shyamsunder Mandayam	TeraLumen Solutions Pvt. Ltd.
10:30-10:45	CP23	Quantitative NDE QNDE of a Weld Mismatch Zone using Digital Image Correlation DIC	SWAIN DIGENDRANATH	VSSC, ISRO
10:45-11:00	CP159	Non-destructive Evaluation of Aircraft Stealth Coatings Using Terahertz Time Domain Spectroscopy	SACHINLAL AROLIVEETIL	IIT MADRAS

\*10 Minutes Presentation

## MODELLING & AUTOMATION IN NDE

**25<sup>TH</sup> NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	2D			
Hall	Hall D: FARADAY			
Session Chairperson:	Dr. Anish Kumar			
Keynote Speaker(s):	Dr. C.V. Krishnamurthy			

Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT10	Computational Imaging	Dr. C.V. Krishnamurthy	IIT-MADRAS
09:30-09:45	CP74	UT Automation of Critical Nuclear Forgings	Vishal Gupta	Larsen & Toubro
09:45-10:00	CP189	Optimization of the design of Digital Radiography (DR) and Computed Tomography (CT) systems using simulation tools	Venugopalan Manoharan	VisiConsult -X-ray System & Solutions, Pune, India
10:00-10:10	CP61	Numerical Simulation to Predict Critical Hotspot Temperature in Blast Furnace Blowpipe to Avoid Industrial Hazard	Usha Y	CSIR-National Metallurgical Laboratory, Jamshedpur, India
10:10-10:20	CP177	High Speed Automated Ultrasonic Testing of Stainless Steel Small Diameter Tube for Critical Application	Singh Ashutosh	Slickers Technology GmbH & Co. KG, WELSPUN SPECIALTY SOLUTIONS
10:20-10:30	CP51	Finite Element approach to predict Response Time and Sensitivity of Detection in the Helium Leak Testing of a Vacuum Chamber using Tracer probe method	Ramani Venkat N	Plasma and Vacuum Technologies
10:30-10:40	CP151	Design and Analysis of an Overwater Electric Hydrofoil Board for Measurements of Water Depth and Seabed Topography	Arora Neha	CNDE, IIT-Madras
10:40-10:50	CP168	Spectral Element Method Based Model for 2D SH Wave Propagation in Heterogeneous Medium	Agarwal Saurabh	IIT Jammu
10:50-11:00	CP172	Soft tools comparison for UCT automation	Kumar Ankur	IIT Roorkee

\*10 Minutes Presentation

*11:00- 11:30 Tea Break (Exhibition Area)*

## **PLENARY SESSION: II**

**25<sup>TH</sup> NOVEMBER 2022 - 11:30 -12:30 hrs**

Session Number	Plenary Session : II		
Hall	Hall A: BHABHA		
Session Chairperson:	Prof. Christian Boller, Universität des Saarlandes Campus Dudweiler, Germany		
Time	Title of the talk	Name of the Speaker	Organization
11:30-12:00	Post Pandemic NDE New Normal... A Moonshot Mindset	Dr. Surendra Singh, Technical Fellow	Honeywell, USA
12:00-12:30	Metamaterials and the coming future of sensing	Dr. Prabhu Rajagopal	IIT-Madras

## **NDE-RELIABILITY**

**25<sup>TH</sup> NOVEMBER 2022 - 12:30 -14:00 hrs**

Session Number	3A
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Hall	Hall A: BHABHA			
Session Chairperson:	Dr. M. Phani Surya Kiran			
Keynote Speaker(s):	Dr. Daniel Kanzler, Dr. Aparna C. Sheila Vadde			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:30-13:00	IT11	The Why, What and How of NDE/T Reliability	Dr. Daniel Kanzler	Applied Validation of NDT, Germany
13:00-13:30	IT12	Probability of Detection Studies with Eddy Current Array Probes	Dr. Aparna C. Sheila Vadde	GE Research
13:30-13:45	CP62	Effect of Scanning Surface in Reliability Analysis of Complex Geometry Time of Flight Diffraction Inspection	NATH SAMIR KUMAR	CENTRAL POWER RESEARCH INSTITUTE
13:45-14:00	CP169	HTHA High Temperature Hydrogen Attack Inspection	DHARMVEER SINGH	STORK

## **NDE FOR NUCLEAR INDUSTRY-I**

**25TH NOVEMBER 2022 - 12:30 -14:00 hrs**

Session Number	3B			
Hall	Hall B: KALAM			
Session Chairperson:	Dr. Debasish Mishra			
Keynote Speaker(s):	Smt M. Menaka			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:30-13:00	IT13	Ionising Radiation Metrology -Calibration and Measurement Capability	Smt M. Menaka	Indira Gandhi Centre for Atomic Research
13:00-13:15	CP86	Development of Online Data Acquisition System for Heavy Water Leak Detection in Dhruva Research Reactor	SHREYA NISHTHA	BHABHA ATOMIC RESEARCH CENTRE
13:15-13:30	CP33	Industrial Computed Tomography using Indigenous Linear Detector Array	ACHARYA Rajesh	BARC
13:30-13:45	CP35	Industrial Xray Tomographic Imaging Application Of Simultaneous Reconstruction Technique Using Gpu	YENUMULA LAKSHMINARAYANA	BHABHA ATOMIC RESEARCH CENTRE
13:45-14:00	CP79	Development of an Indigenous Remotely Operated Tungsten Shielded Radiography Exposure Device ROTEX I using Ir192 Radioisotope	SHARMA MUKHAR	Board of Radiation and Isotope Technology, India

## **NDE IN AEROSPACE-I**

**25TH NOVEMBER 2022 - 12:30 -14:00 hrs**

Session Number	3C			
Hall	Hall C: RAMAN			
Session Chairperson:	Sri Kumaran Kannan			
Keynote Speaker(s):	Dr. M. Arumugam			



Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:30-13:00	IT14	Role of NDE in precise Failure analysis of parts used in liquid and cryo-propulsion systems	Dr. M. Arumugam	LPSC, ISRO
13:00-13:15	CP119	Detection of Thin Inclusions in Honeycomb composite Sandwich Skin Sheets using an In house Shearographic NDT System	Swain Digendranath	VSSC, ISRO
13:15-13:30	CP111	Non Destructive Testing of Space Composite Sandwich Structures Using Laser Shearography	Hari Krishna Sogunuru	IIST
13:30-13:45	CP201	NDE using Drone	Suvendu Lenka	NDT Training Consultancy & Insp. Serv. Pvt. Ltd
13:46-13:56	CP16	Ultrasonic Evaluation of Diffusion bonded Bimetallic adaptors for cryogenic applications	Austin C	ISRO/VSSC
13:57-14:07	CP69	Quantitative Estimation of Loose flap Bulge from radiographic images of Solid Rocket Motor and its correlation with slurry level fall during propellant casting and curing	Polamarasetty Sai Krishna Koushik	Satish Dhawan Space Centre, Indian Space Research Organisation

\*10 Minutes Presentation

## **MATERIAL CHARACTERIZATION & NDE**

**25<sup>TH</sup> NOVEMBER 2022 - 12:30 -14:00 hrs**

Session Number	3D			
Hall	Hall D: FARADAY			
Session Chairperson:	Sri S. Balamurugan			
Keynote Speaker(s):	Dr Benjamin Ducharne			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:30-13:00	IT15	NDT of steel components based upon their magnetic answer	Dr Benjamin Ducharne	INSA- Lyon, France
13:00-13:15	CP187	Characterization of Strain Induced Martensite in 304LN Stainless Steel during Cyclic Loading by Nonlinear Rayleigh Wave	PALIT SAGAR Sarmishtha	BARC, CSIR- NML
13:15-13:30	CP188	Estimation of Surface Hardness by Destructive Non Destructive Methods	STEPHEN JOEL	Engineering Quality Inspection Services
13:30-13:45	CP50	Determination of Elastic Modulus of Ti6Al4V Alloy Biomaterial Nanoindentation Hardness Test vs Ultrasonic Technique	SAHOO RAJAKISHORE	CSIR-IMMT, Bhubaneswar
13:45-14:00	CP182	INSPECTION OF PIPING UNDER TRUNION SUPPORT BY HOMC	CHIRAG R DARJI CHIRAG R	Reliance Industries limited
14:00-14:10	CP37	Assessment of Flexural Bond Slip Behavior of GFRP Bars and Concrete via Acoustic Emission Monitoring (6 mins)	RATHER AMER ILIYAS	Indian Institute of Technology Bombay

\*10 Minutes Presentation

*14:00- 15:00- Lunch Break (Exhibition Area)*

**Special Session- Careers in NDE**

**25<sup>TH</sup> NOVEMBER 2022 - 15:00 -16:30 hrs**

Session Number	Special Session-I
Hall	Hall A: BHABHA
Session Chairperson/Co-ordinator	Sri Manoharan Venugopal
Time	Title
15:00-16:30	Special Session- Careers in NDE

## **Special Session- NDE in Power**

**25<sup>TH</sup> NOVEMBER 2022 - 15:00 -16:30 hrs**

Session Number	Special Session-II
Hall	Hall C: RAMAN
Session Chairperson/Co-ordinator	Shri A.K. Das, GM, NTPC- NETRA
Time	Title
15:00-16:30	Special Session- NDE in Power

## **Special Session- NDE in O&G**

**25<sup>TH</sup> NOVEMBER 2022 - 15:00 -16:30 hrs**

Session Number	Special Session-III
Hall	Hall D: FARADAY
Session Chairperson/ Co-ordinator	Shri Umakanthan Anand, Reliance Industries Limited
Time	Title
15:00-16:30	Special Session- NDE in O&G

## **Open Session (Visit to Exhibition)**

**25<sup>TH</sup> NOVEMBER 2022 - 15:00 -16:30 hrs**

## **NDE FOR PIPELINES & WELDS**

**25<sup>TH</sup> NOVEMBER 2022 - 16:30 -18:30 hrs**

Session Number	4A
Hall	BHABHA
Session Chairperson:	Dr. Aparna Sheila Vadde
Keynote Speaker(s):	Dr.R.J.Pardikar

Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
16:30-17:00	IT16	AUT for enhancing the quality and productivity of pipeline girth welds	Dr.R.J.Pardikar	TWI India Pvt Ltd.
17:00 - 17:15	CP176	Cracker Furnace Radiant coil health assessment -A Case Study	PATEL NILESH	Reliance Industries limited
17:15-17:30	CP100	Development of Magnetostriction based Ultrasonic Guided Wave Transducers for Inspection of Ferromagnetic Pipes and Tubes	M.M. Narayanan	Indira Gandhi Center for Atomic Research
17:30-17:45	CP165	Development of Ultrasonic Technique Wall Thickness Measurements and Measurement Methodology procedure of Steam Pipelines in Nuclear Power Plants	RAMESH E	Indira Gandhi Centre for Atomic Research
17:45-18:00	CP70	Non-destructive approach for Integrity Assessment of Welded Joints	SAHU MINATI KUMARI	NIT JAMSHEDPUR
18:00-18:10	CP83	Testing Of HDPE pipeline with ToFD	Rentapalli Sekhar Babu	Paradeep Phosphates Limited
18:10-18:20	CP138	A Comparative Study On Residual Stress in SS 304L Welds Welded Using Different Welding Techniques of Nuclear Facility By X-Ray Diffraction XRD Technique	KUPPUSAMY M V	HBNI, IGCAR
18:20-18:30	CP98	Temperature Monitoring of Pipe using Ultrasonic Strip Waveguide sensor	VALABHOJU ARUN	NIT WARANGAL
18:30-18:40	CP131	QA Challenges During Helium Leak Detection of SS 316L Pipe Weld Joints Of Sodium Technology Complex	MOHAN JAYARAMAN	IGCAR

\*10 Minutes Presentation

## NDE OF CIVIL STRUCTURES

**25<sup>TH</sup> NOVEMBER 2022 - 16:30 -18:30 hrs**

Session Number	4B			
Hall	Hall B: KALAM			
Session Chairperson:	Prof. C.V. Krishnamurthy			
Keynote Speaker(s):	Dr.Christian Boller			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
16:30-17:00	IT17	Compilation of Structural Integrity Information for a Steel Component with a Special View on NDE 4.0 and Digital Twins	Dr.Christian Boller	Saarland University
17:00-17:15	CP164	Analysis of Failure Modes of Masonry through Structural Testing and Infrared Thermography	GHOSH DEBDUTTA	CSIR-Central Building Research Institute, Roorkee
17:15-17:30	CP166	DIC based Monitoring of Dry Stack Masonry Arches Subjected to Support Displacement	GHOSH DEBDUTTA	CSIR-Central Building Research Institute, Roorkee
17:30-17:45	CP162	3D Imaging of targets in reinforced concrete using Ultrasonic Shear wave Tomography	DEBDUTTA GHOSH	CSIR-Central Building Research Institute, Roorkee
17:45-18:00	CP203	Condition Assessment and Performance Evaluation of an In-service Prestressed Concrete Railway Bridge	Dr. B.Arun Sundaram	CSIR- SERC
18:00-18:15	CP103	IoT based Power Loss Estimation of Power Distribution Facility in UTAS Main Building Using InfraRed Thermal Imaging Technique	NICHOLAS Arthur	University of Technology and Applied Sciences, ITRI
18:15-18:25	CP75	Application of Principal Component Analysis and k-means Clustering of Acoustic Emissions Generated during Mode I Fracture Process in Steel Fibre Reinforced Concrete	DIBYA JYOTI BASU	JADAVPUR UNIVERSITY
18:25-18:35	CP125	Data analysis of GPR Images in Spectral Domain	BHATTACHARYYA ARKA	AAVRTTI Technologies Pvt. Ltd.

\*10 Minutes Presentation

# **INDUSTRIAL RADIOGRAPHY**

**25<sup>TH</sup> NOVEMBER 2022 - 16:30 -18:30 hrs**

Session Number	4C			
Hall	Hall C: RAMAN			
Session Chairperson:	Smt M. Menaka			
Keynote Speaker(s):	Mr. Hajo Schulenburg			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
16:30-17:00	IT18	Advances in X-ray Inspection Technologies for Pipe Manufacturing Industries	Mr. Hajo Schulenburg	VC X-RAY, GERMANY
17:00-17:15	CP90	Contrast Agents for Enhancement of Volumetric Computed Tomography Inspection for Industrial Applications	SEN GUPTA Esha	GE Research
17:15-17:30	CP87	Image quality enhancement in 2D and 3D Xray inspection for new component development process for industrial Application	THAPA Prasad	GE Research
17:30-17:45	CP80	Indigenous Development and NDE of Casting Nuclear Application	SHRINIVAS MOTE SHRINIVAS MADHAV	M/S KSB LTD, SUBORDINATE
17:45-18:00	CP38	Effect Of SFD And Exposure Time On SNR Sensitivity In Computed Radiography CR Using Ir192	Mayur Kavathiya	L&T MHI POWER BOILERS PVT.LTD
18:00-18:15	CP22	Recognition and Estimation of Corrosion Under Insulation Using X Ray Radiography	GEORGE SHERI	BAKER HUGHES
18:15-18:30	CP32	Integration and Evaluation of Indigenous Linear Detector Array for Industrial Computed Tomography	MITRA ANANT	BHABHA ATOMIC RESEARCH CENTRE
18:30-18:45	CP205	Study of PBX based Booster Pellet using Micro-Focus Projection Radiography and 3D Computed Tomography	Vijay Pratap Mall	High Energy Materials Research Laboratory and DIAT- Pune

\*10 Minutes Presentation

# **NDE IN AEROSPACE-II**

**25<sup>TH</sup> NOVEMBER 2022 - 16:30 -18:30 hrs**

Session Number	4D			
Hall	Hall D: FARADAY			
Session Chairperson:	Sri Kumaran Kannan			
Keynote Speaker(s):	Sri C.P.Madhusudhan, Dr. K. Srinivas			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization

16:30-17:00	IT19	Quality Trends in Aerospace Industry	Sri C.P. Madhusudhan	Lucid Software
17:00-17:30	IT20	Low frequency NMR: An effective NDE tool for inspection of de-bonds in multilayered bonded structures	Dr. K. Srinivas	ASL, DRDO
17:30-17:45	CP15	Methodology for non destructive inspection of cryo stage insulation	AUSTIN C	VSSC, ISRO
17:45-18:00	CP21	Ultrasonic TOFD for Corrosion Detection in a Multilayer Structure	C Chandraprakash	IIT Kanpur
18:00-18:15	CP14	Challenges and Possibilities for Radiography Testing of Glass to Metal Sealed Pyro Initiator Housings used in Space Applications	JEGADEESAN RAJEEV	VSSC,ISRO
18:15-18:25	CP81	APPLICATION OF RADIOGRAPHY AN INSPECTION TOOL FOR THRUST CHAMBER OF LAUNCH VEHICLE ENGINE	SINGH SAURABH	ISRO
18:25-18:35	CP17	Rocket motor case composite insulation thickness measurement and bond integrity evaluation	AUSTIN C	ISRO

\*10 Minutes Presentation

## - END OF DAY 2 OF CONFERENCE

18:30- 19:30- ISNT AGM (Only for ISNT Members)  
Hall: BHABHA

*19:30- ONWARDS- Gala Dinner at Hotel The Leela*

## NDE 4.0, AI, MACHINE VISION, IMAGE PROCESSING-II

**26TH NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	5A			
Hall	Hall A: BHABHA			
Session Chairperson:	Dr. Ajay Pasupuleti			
Keynote Speaker(s):	Mr. S. Balamurugan			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT21	NDT and Industry 4.0 In the Context of Steel Industry	Mr. S. Balamurugan	Tata Steel R&D, India
09:30-09:45	CP97	Weld Defect Detection and Classification using an In-House Developed Image Processing Tool Based on Python Platform	KRISHNAN ARUNMUTHU	Indira Gandhi Centre for Atomic Research

09:45-10:00	CP55	Monitoring of Early Stage Corrosion in Reinforced Concrete Structures Machine Learning Supported Acoustic Emission Technique	A Thirumalaiselvi	CSIR-Structural Engineering Research Centre
10:00-10:15	CP120	Modeling NDE Ultrasonic Wave Dynamics using Data driven simulation assisted Physics learned AI Network	GANTALA THULSIRAM	INDIAN INSTITUTE OF TECHNOLOGY MADRAS
10:15-10:30	CP71	Challenges in Non Contact and Realtime inspection of 3D Printed components using Vision System-A Review	KIRAN M.B.	Pandit Deendayal Energy University
10:30-10:45	CP28	Distinguishing Two Dalbergia Species of Commercial Importance Using Non-Destructive and Rapid Near Infrared Spectroscopy Technique	DEEPA M S	Institute of Wood Science and Technology
10:45-11:00	CP63	Wind Turbine Gearbox Vibration Condition Monitoring using Gear Mesh Frequencies and Machine Learning Algorithm	SURESH SETTI	CSIR-NAL & NIT-Trichy
11:00-11:10	CP91	Freespace Microwave Tomography for NDT Applications to Identify Different Dielectric Materials	CHAUDHARY SUDHIR KUMAR	Indian Institute of Technology Kanpur

\*10 Minutes Presentation

# ROLE OF NDE IN AEROSPACE INDUSTRY

**26TH NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	5B			
Hall	Hall B: KALAM			
Session Chairperson:	Dr. Deepak Ghodgaonkar			
Keynote Speaker(s):	Sri M.Venkata Reddy			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT22	Efforts towards Self Reliance in NDE for Defence R&D and Production	Sri M.Venkata Reddy	DRDL,DRDO
09:30-09:45	CP116	A comparative Study of Defect Detection Techniques for Wind Turbine Blades	ABILASHA	PSG Institute of Technology
09:45-10:00	CP68	Comparative Evaluation of GFRP Composites using Air Coupled Ultrasonic and Microwave NDT	Dr. Nishal Ramadas	Azeriri Pvt Ltd.,
10:00-10:15	CP18	Non-Destructive Testing Methods for the Assessment of Additively Manufactured Alloys	SASIDHARAN PILLAI REMAKANTHAN	VSSC/ISRO
10:15-10:25	CP64	Scope of Non Destructive Testing in Additively Manufactured Lattice Structures	PATEL Falak Piyush	Pandit Deendayal Energy University
10:25-10:35	CP136	A Novel standalone Device to Focus Ultrasonic Guided Waves	S R SANDEEP KUMAR	INDIAN INSTITUTE OF TECHNOLOGY MADRAS
10:35-10:45	CP96	Friction Stir Welded Lap Joint Inspection Using Low Frequency Plate Waves Experimental Analysis	MEHTA MANISH KUMAR	Indian Institute of Technology Roorkee, Roorkee ,India
10:45-10:55	CP147	An Investigation on potential Impacts of Wave Scattering on Super Resolution and Subwavelength Imaging of Defects in Acoustic and Material Mediums Using Holey structured metamaterials	CHANDRAN LOHESHWARAN	Indian Institute of Technology Madras
10:55-11:05	CP200	Health Monitoring of Composite Structures using Ultrasonic Waveguide Sensors	Bindesh Kumar Lakra	NIT-TRICHY, XYMA ANALYTICS

\*10 Minutes Presentation

# **STRUCTURAL HEALTH MONITORING/INTEGRITY/** **RLA**

**26TH NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	5C			
Hall	Hall C: RAMAN			
Session Chairperson:	Shri Manoharan Venugopal			
Keynote Speaker(s):	Prof. Balaji Srinivasan			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT23	Towards Structural Health Monitoring Using Nerves of Glass	Prof. Balaji Srinivasan	IIT-Madras
09:30-09:45	CP195	Process Plant Integrity Assurance Through Indigenous Development	Pareesh Haribhakti	TCR Advanced Engineering Pvt. Ltd
09:45-10:00	CP130	Advances in In-situ Inspection of Boiler Headers in Thermal Power Plants	DAS ANIL KUMAR	NTPC -NETRA
10:00-10:15	CP142	RLA Of Power Cycle Piping In NTPC Units And Prevention Of Catastrophic Failures By NDT Techniques	ASTHANA MANOHAR KRISHNA	NTPC Limited
10:15-10:30	CP193	Thickness Monitoring Underneath Coating Systems Using Wireless Battery Free Permanently Installed Ultrasonic Sensor	Tim Coope	Inductosense and Arora NDT
10:30-10:45	CP49	Automated Condition Monitoring of Steel Wire Ropes by Magnetic Rope Testing	SHALASHILIN ALEXANDER	INTRON PLUS
10:45-10:55	CP173	Quadratic frequency modulated thermal wave imaging for NDT of CFRP Material	B Raja sekhar	Koneru Lakshmaiah Education Foundation
10:55-11:05	CP115	Quantitative Evaluation of Drilling Damage in Composites Using Active Thermography	D Sharath	Indira Gandhi Centre for Atomic Research, M S Ramaiah Institute of Technology

\*10 Minutes Presentation

# **APPLICATIONS OF ULTRASONICS-I**

**26TH NOVEMBER 2022 - 09:00 -11:00 hrs**

Session Number	5D			
Hall	Hall D: FARADAY			
Session Chairperson:	Dr. R. J. Pardikar			
Keynote Speaker(s):	Dr. Nishal Ramadas			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
09:00-09:30	IT24	Non-contact ultrasonic measurement techniques and their application in the growing field of composite and battery inspection	Dr. Nishal Ramadas	AZERIRI
09:30-09:45	CP137	Multipoint Temperature Sensing of U-shape Pipe Using Wave Guide and Training Deep Learning Model for Prediction of Temperature	SHIRKULE suraj balkrishna	IIT Madras



09:45-10:00	CP204	Challenges of A-Scan Ultrasonic Examination for Nuclear Pressurizer Head Forgings	Anand Veerayan	L&T Special Steels & Heavy Forgings Pvt Ltd.,
10:00-10:15	CP167	Performance Comparison of Plane Wave Imaging and Half skip Total Focusing Method for imaging crack planes in concrete	GHOSH Debdutta	CSIR-Central Building Research Institute
10:15-10:30	CP82	Nozzle Weld Inservice Inspection For Detection And Sizing Of ID Connected Cracks Using Time Of Flight Diffraction As Supplementary NDE Technique	SIDHARTHAN SIJI	ARIES MARINE
10:30-10:45	CP190	Damage Assessment in Composite Materials Using Low Cost Air-coupled Transducers	Tomasz Wandowski	Polish Academy of Sciences
10:45-10:55	CP178	PWI TFM For Attenuative Material	M Sandeep	The Phased Array Company
10:55-11:05	CP129	Comparison studies of ultrasonic testing sensitivity of ASME flat reflectors with simulated special curvature reflectors using for Vertical Cylindrical Tanks	HARIBABU Rajendran	Indira Gandhi Centre For Atomic Research

\*10 Minutes Presentation

*11:00-12:00- Tea Break & Networking (Exhibition Area)*

## APPLICATIONS OF ULTRASONICS-II

**26TH NOVEMBER 2022 - 12:00 -14:00 hrs**

Session Number	6A			
Hall	Hall A: BHABHA			
Session Chairperson:	Dr. K.Srinivas			
Keynote Speaker(s):				
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:00-12:15	CP181	Effective FMCTFM Inspection Good Practices Limitations	GEDDAM Prasanth	Evident Scientific, Singapore
12:15-12:30	CP53	Baseline free Nonlinear Ultrasonic Approach for Stress Evaluation in Concrete Structures	Sukanya Basu	CSIR-Structural Engineering Research Centre
12:30-12:45	CP191	Development of Distributed and Coupled Ultrasonic Waveguide Sensors for Hot Chamber's Temperature Measurements	Suresh Periyannan	NIT-Warangal and IIT-Madras
12:45-13:00	CP194	Application of PAUT to Judge the Integrity of Coke Drum	Naresh Kadia	TCR Advanced Engineering Pvt. Ltd.
13:00-13:10	CP126	Fabrication and Inspection of Complex Composite Reference Standard Using 10 Axes C-scan Squirter Ultrasonic Equipment	P M JASINRAJ	NIT-Trichy
13:11-13:21	CP134	Manufacturing Of Porosity Coupons and Simulation of Void Attenuation Curves	K Maneesh Shetty	NIT-Trichy
13:22-13:32	CP198	Experimental Study to Monitor the Rising and Falling of Fluid Level using Ultrasonic Waveguide Techniques	Abhishek Kumar	NIT-Warangal
13:33-13:43	CP197	Multi-point Temperature measurement of furnace refractory brick wall using guided wave technology	Sourav Bhowmik	NIT-Trichy



13:44-13:50	CP196	Simultaneous Temperature and Level Measurement of a Fluid using Single Waveguide with Varying Cross Section Ultrasonic Waveguide Sensor	Suraj Kumar	NIT- Trichy
13:50-14:00	CP39	Ultrasonic Investigation for the Quality Assurance of Sealing Structures in Radioactive Waste Repositories	PRABHAKARA Prathik	Bundesanstalt für Materialforschung und –Prüfung (BAM)
14:00-14:10	CP106	Lamb wave based Non Destructive Evaluation in thin section lap joint of Friction Stir Welding	Govinda Gautam	Indian Institute of Technology, Roorkee

\*10 Minutes Presentation

## THERMOGRAPHY-III

**26TH NOVEMBER 2022 - 12:00 -14:00 hrs**

Session Number	6B			
Hall	Hall B: KALAM			
Session Chairperson:	Dr. Lalat Indu Giri			
Keynote Speaker(s):	Dr. Anshul Sharma, Dr. Vanita Arora			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:00-12:30	IT25	Novel Analytical and Numerical Studies for Characterization of Biomaterials using Active Thermographic Techniques	Dr. Anshul Sharma	Post Doctoral Fellow, SeNSE, IIT-Delhi, India
12:30-13:00	IT26	Recent trends in infrared imaging for testing and evaluation of industrial materials	Dr. Vanita Arora	IIIT Una
13:00-13:15	CP127	Estimation and Validation of Power Losses in a Three Phase Loading Circuit Using Infrared Thermal Imaging	Nicholas Arthur	University of Technology and Applied Sciences, Ibri, Oman
13:15-13:25	CP88	Compressive Projection Principal Component Thermography	Md M Pasha	PACE Institute of Technology and Sciences, KSRM COLLEGE OF ENGINEERING
13:25-13:35	CP154	Unsupervised Image Processing Approach for Subsurface Defect Detection of Glass Fibre Reinforced Polymer sample	Das Priyanka	INDIAN INSTITUTE OF TECHNOLOGY DELHI
13:35-13:45	CP123	Machine Learning Based Automatic Defect Detection In Aperiodic Thermal Wave Imaging	Dua Geetika	IIIT, Una
13:45-13:55	CP160	Novel Post Processing Approaches for Frequency Modulated Thermal Wave Imaging for Testing and Evaluation of Fibre Reinforced Polymer	Das Priyanka	INDIAN INSTITUTE OF TECHNOLOGY DELHI
13:55-14:05	CP108	An Unsupervised Machine Learning Approach to Active Infrared Imaging for Non-destructive Testing and Evaluation Applications	Arora Arora	Indian Institute of Technology Delhi, SS Automation

\*10 Minutes Presentation

## ROLE OF NDE IN NUCLEAR INDUSTRY

**26TH NOVEMBER 2022 - 12:00 -14:00 hrs**

Session Number	6C			
Hall	Hall C: RAMAN			
Session Chairperson:	Dr Benjamin Ducharne			
Keynote Speaker(s):	Dr. Thirunavukkarasu			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:00-12:30	IT27	Development of remote field eddy current technique for small diameter ferromagnetic steam generator tubes	Dr. Thirunavukkarasu	IGCAR
12:30-12:45	CP101	Assessment of Damage in Supplemented Concretes under Corrosive Environment using Xray Radiography and Acoustic Emission Techniques	SARAVANAN Thangavelu	IGCAR
12:45-13:00	CP133	Development of Ultrasonic Phased Array Inspection Procedure for Critical Weld Joint in Inner Vessel of FBR	K MURUGAN	Indira Gandhi Centre for Atomic Research (IGCAR)
13:00-13:15	CP104	Dimensional Measurement in Gamma Ray Computed tomography imaging	RAMAR R	IGCAR
13:15-13:30	CP191	Development of the Distributed and Reconfigured Ultrasonic Sensors for Hot Chamber Temperature Profile Measurements	SURESH PERIYANNAN	NIT-WARANGAL AND IIT-MADRAS
13:30-13:40	CP102	Experience during the fabrication of CRDM Lower part for Fast Breeder Reactor	KALIAMOORTHY G	IGCAR
13:40-13:50	CP52	Helium Leak Rate Detection in Low volume Sealed off Devices	RAMANI Venkat N	Plasma and Vacuum Technologies
13:5-14:00	CP132	Challenges of Digitization in NDE	ANANTHANARAYANAN Rajan	Idea Brigade Technology Solutions LLP

\*10 Minutes Presentation

# NDE REGULATION CODES AND STANDARDS

**26<sup>TH</sup> NOVEMBER 2022 - 12:00 -14:00 hrs**

Session Number	6D			
Hall	Hall D:FARADAY			
Session Chairperson:	Sri M. Venkata Reddy			
Keynote Speaker(s):	Sri. Kumaran Kannan			
Time	Abstract No.	Title of the talk	Name of the Speaker	Organization
12:00-12:30	IT28	Glimpses of ISO 9712: 2021 - Qualification & certification of NDT Personnel	KUMARAN KANNAN	ANSA Training and Quality Assurance Private Limited
12:30-12:45	CP12	ISO 9712 2021 Changes And Challenges	DIWAKAR DAMODAR JOSHI	Insight Quality Services
12:45-13:00	CP171	A Synopsis of NDE Certification	DHARMVEER SINGH	STORK
13:00-13:15	CP13	Experience in Manufacturing and Quality Assurance of Austenitic Stainless Steel AISI 304L Grade Forging for Pressurized Heavy Water Reactor	Saikat HALDER, UMRANI Kalpana Jagdish	Nuclear Power Corporation of India Limited
13:15-13:30	CP121	Development of IGSCC Calibration Standard for BWR Reactor Recirculation Sytem piping welds inspection	NABIN KRISHNA ROY NABIN KRISHNA	NPCIL
13:30-13:45	CP202	NDE requirements in Fabrication of Cryogenic Storage Tanks	Kamal Dhandha	TUV India Pvt. Ltd., Inox India Ltd.,
13:45-14:00	CP85	UT TOFD requirements Chinese Standard Vs ASME Code	ANUPAM Ajit	Larsen & Toubro

\*10 Minutes Presentation

*14:00- 15:00- Lunch (Exhibition Area)*

## VALEDICTORY FUNCTION