

## MODES OF REGISTRATION

### On-line Registration (Individual)

- Please sign-in to your NDE 2019 account. Click here to create one, if you do not have an account with NDE 2019.
- Click on 'Registration' and fill in the required details.
- Select the payment type as online and follow the payment process.
- Once the payment is made through the payment gateway, you will receive the 'Confirmation Email' containing your details and 'Delegate Registration ID'. Kindly bring this Confirmation Email to the conference.
- If the payment is processed and 'Confirmation Email' is not generated, please write an email to info@nde2019.in.

### Off-line Registration (Individual)

- Please sign-in to your NDE 2019 account. Click here to create one, if you do not have an account with NDE 2019.
- Click on 'Registration' and fill in the required details.
- Select the payment type as offline.
- Kindly upload scanned copy of Demand Draft/Cheque or NEFT receipt and submit the form. You will receive the confirmation email regarding submission of registration form.
- Once the payment is received in the conference account, you will receive the 'Confirmation Email' containing your details and 'Delegate Registration ID'. Kindly bring this Confirmation Email to the conference.
- Cheque / Demand Draft to drawn in favour of "Indian Society for Non - Destructive Testing"



### Conference Secretariat

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Bangalore 560058, INDIA

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### Conference Manager

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## eNDEavours from detection to prediction conference & exhibition on NON DESTRUCTIVE EVALUATION



## PRECONFERENCE TUTORIALS

December 3-4  
Venue: Fortune Park  
JP Celestial, Bengaluru

### Organizing team

Mr. Vijayaraghavan, Retired HAL,  
Bangalore  
Dr. Ravibabu Mulaveesala IIT, Ropar  
Mr. Siva.Y, BHGE, Bangalore



Mr. V. Manoharan, GE Research,  
Bangalore  
Mrs. Vijayalashmi, GTRE, Bangalore  
Mr. Prasad Thapa, GE Research. Bangalore

## PCT 1: THERMAL IMAGING - INDUSTRIAL AND MEDICAL APPLICATIONS



Course Director

**M. Menaka**, a postgraduate in physics, working as Scientific officer at Indira Gandhi Centre for Centre Research, Kalpakam. She has specialized in material characterization using Thermal Imaging, Digital radiography & image processing. She has more than 50 Journals & 45 conference publications. She has contributed to the development of First Indian Standard in Infrared Thermal Testing.



Course coordinator

**Ms. Kaveri** Founder and CEO of ATOS instruments Marketing Services is Physicist from IIT Bombay. An Expert on Infrared Detectors worked over 450 installations with 100 scientific organizations for diverse applications like NDE, MEMS& Characterizations in Last 20 years.

This pre-conference tutorial aims to provide the participants with an in-depth understanding of the principles of Infrared Thermal Testing and its various applications in Industry and Medical.

The tutorial will include, but is not limited to the following:

- Thermal Infrared Physics and Modes of Heat Transfer
- Thermal imaging: Equipment's and Instrumentation
- Testing Techniques
- System performance and Calibration of equipment's

### Case studies

- Evaluation of composite materials
- Imaging of Structural materials used in aerospace and other related industries
- Evaluation of civil structures
- Monitoring of electric power distribution and transmission systems.
- Applications in O&G Industries-Furnace monitoring
- Evaluation of bonded materials and structure
- Research work in the area of Medical Imaging.

This tutorial is ideal for the novice NDE professionals, practicing Engineers, Energy audit professionals, maintenance, and condition monitoring professional, researchers, students, and QA personnel who intend to foray into the field of thermal imaging. It is also ideal for the personnel already involved in thermography as it would enhance their understanding and sharpen their skills. The tutorial is also suitable for medical students to carry out research in the area of thermal imaging.

## PCT 2: 3D X-RAY IMAGING-APPLICATIONS IN ADDITIVE MANUFACTURING, PROCESS QUALITY CONTROL AND METROLOGY



Course Director

**Mr. Arumugam** is Metallurgist works as Scientist-G, HOD QC & NDE group in LPSC, ISRO. Contributed in generation of specification for Metallic materials for Gaganyaan program & NDT procedures for pressure vessels and investment castings & raw materials for satellite launch vehicle program. He has more than 30 years of experience in Quality control and NDT of Aerospace Materials and Manufacturing area. Served as an Expert member in "BrahMos" missile Attestation committee for Indigenisation of Materials.



Course coordinator

**Mr. Samaresh Changdar**, Senior Manager in Baker Hughes- a GE Company He is post graduated in Metallurgical Engineering from Indian Institute of Science.

He works with commercial team & X-ray users in different Industries Transportation Aerospace Oil& Gas & Automotive. He is a known personality in many forums on digital transformation in India in the field of x-ray & industrial computed tomography.

3D X-Ray imaging commonly known as Computed Tomography (CT) is the latest state of art technology suitable for both Metrology and Radiography inspection. Industrial CT scanning can, Non destructively visualize, measure, and analyze the internal features of precision parts and assemblies. CT scanning creates digital 3D models of products by combining over a thousand 2D computer-processed X-ray images. Industrial CT scanning is the only form of 3D scanning which can measure complex internal and external features with the scanned item intact and unchanged.

The Voluminous information contained in the 3D data permits a quantitative analysis of a defect as well as its internal dimensional features. As a result, even interior measurement and the virtual cut sectional information can easily be obtained without destruction/cutting, as well it has the added benefit of localizing structural material imperfections and identifying assembly errors not usually possible through traditional methods of Metrology and X-ray Radiography.

The broad topics covered in this Pre conference Tutorial are:

- Introduction to 3DX-Ray Imaging (CT).
- Radiation Sources, detectors and reconstruction algorithms
- CT performance parameters, image artifacts and Image analysis.
- Automated defect recognition tools for CT.
- CT applications in Metrology and 3D printing.
- CT advantageous and Applications Aerospace
- CT applications in Automotive sector.
- CT Applications in Composite products.

**Who can attend - This Tutorial is ideal for;**

NDE professionals, Practicing Engineers, Researchers, Students Academicians, Material and Design engineers, Manufacturing and QC/QA personnel who intend to have knowledge on CT and its potential applications.

The faculties are highly qualified and experienced Professionals from

- Premier educational Institutions like IIT's.
- Aerospace, Defence, Nuclear sectors; Major manufacturing and R&D organisations

## PCT 3: NDE DURING AIRCRAFT MANUFACTURING AND IN-SERVICE



Course Director

**Mr. P. Vijayaraghavan**, a post graduate in Science and Certified Level III Aerospace NDT professional retired from HAL. He has more than 40 years of experience in aerospace NDE. He is currently educating NDE science through Invited Lectures to various Educational Institutes and Research Organizations. Recipient of National NDT award - 2007 for Industrial Applications in NDE, during National Conference NDE-2007 held at Vadodara.



Course Coordinator

**Dr. C. Siddaraju** is a Mechanical Engineer and PhD in Material characterization. He has published and presented more than 30 research papers. He is a recognized research guide for VTU, Belgaum. Vice chairman, The Indian Institute of Foundrymen ( IIF) Bangalore chapter. Executive council member of Indian Institute of Metals.

This pre-conference tutorial aims to provide the participants with an in-depth understanding of NDE Techniques/processes/methodologies used during manufacturing of aircraft components and during inservice inspection.

The tutorial will cover topics such as:

- Role of NDE in Aircraft Product cycle
- MRO of the Aircrafts and Insitu Inspection
- NDE of Composites
- Calibration & Process Control checks of RT PT UT MT & ET in Aero NDT
- NAS 410 NDT Personnel certification-Aerospace
- AS 9100 ( Aerospace Quality Management )& NADCAP ( National Defense Contractors Accreditation Programme)
- DGAQA ( Director General of Aircraft Quality Assurance ) and DGCA (Director General of

- Civil Aviation) NDT Approvals
- Advanced NDE methods & Automation in Aero NDT.

**This Tutorial is ideal for:**

NDE professionals, Practicing Engineers, Researchers, Students Academicians, Material and Design engineers, Manufacturing and QC/QA personnel who are working in aerospace manufacturing and service industries. This will help NDE professionals to start NDE labs catering to aerospace industries.

Speakers are experts in the field from various reputed aerospace organizations and Government agencies.

## PCT 4: NDE OF CIVIL STRUCTURES



Course Director

**Dr. Ernst Niederleithinger** serves as HOD "NDT methods for civil engineering" and as coordinator of the competence center "Data Analytics" at BAM, the German Institute for Materials Research and Testing. He is a geophysicist with a diploma & doctorate from U Potsdam and a habilitation degree from RWTH Aachen University, where he also lectures



Course coordinator

**Dr. Anish Kumar** is heading Ultrasonic Measurements Section of NDE Division in Metallurgy and Materials Group at Indira Gandhi Centre for Atomic Research, Kalpakkam. He obtained B.E. in Metallurgical Engineering & Ph.D from IIT, Kharagpur. He has been involved in development of innovative methodologies for ultrasonic inspection of nuclear components & structures and microstructural characterization.. He has over 150 publications to his credit.

Integrity, reliability and durability of civil structures can be ensured through judicious applications of Non-Destructive Evaluation (NDE) techniques. This workshop will discuss the field applications of the matured NDE techniques such as ultrasonic pulse velocity, rebound hammer, half-cell potential measurement, impact echo and ground penetrating radar through several case studies and their advancements. It will also address the state of the art and futuristic technologies in the field including phased array ultrasonic, non-linear ultrasonic, thermography and advanced imaging techniques. The recent advancements in mechatronics, communication, data handling and machine learning in the field of NDE of civil structures will also be discussed that has enabled detailed inspection of inaccessible civil structures e.g. with the aid of under water remotely operated vehicles (ROV) or through drones.

The broad topics covered in this Pre-conference workshop are

- Fundamentals of the techniques employed for NDE for Civil structures (NDE-CS)

- Quality and damage mechanism in concrete
- Case studies for NDE-CS in industries including large structures such as bridges & plants
- Innovations in Ultrasonic imaging and GPR technology
- Visual NDE using Underwater ROVs and Drones
- NDE of underground structures
- Structural health monitoring including embedded sensing - Bridges, Power plants
- Qualification/Certification in NDT-CE
- Upcoming techniques as Nonlinear Ultrasound, Machine Learning and Data Fusion

Who can attend - This Tutorial is ideal for;

NDE professionals, civil engineers, researchers, academicians, Professionals working in civil construction quality assurance of civil structures. Managers and officials from organizations dealing with large civil structures. Faculties and students from Engineering Institutes and R & D Organizations.

#### About the faculty:

The faculties are highly qualified and experienced Professionals from International institutes such as BAM, Germany; Polytechnic University, Hong Kong, IITs, Premier national laboratories including Structural Engineering Research Centre (SERC), Chennai; Central Building Research Institute, Roorkee; Indira Gandhi Centre for Atomic Research, Kalpakkam, Private companies involved in NDE of civil structures and International NDT equipment manufacturers

## SPONSORSHIP AND ADVERTISEMENT OPPORTUNITY

NDE 2019 provides ideal opportunity to the company's to get exclusive sponsorship and advertisement in the Pre-conference Tutorials.

	Demo/Presentation by sponsor- 1hr slot	1 Page advertisement in Course material booklet	Standees and Banners during inauguration and tutorials
PCT-1	₹ 50000	₹ 15000	₹ 15000
PCT-2	₹ 50000	₹ 15000	₹ 15000
PCT-3	₹ 50000	₹ 15000	₹ 15000
PCT-4	₹ 50000	₹ 15000	₹ 15000

GST Extra

Size & Format of Advertisements:

The advert ARTWORK should be a printable PDF / JPEG (300DPI)

Advertisement Size :- Full Page 8.2in(w)X11.6in(h)

For assistance & booking please contact below

Name - Praveen Kumar Kokne

Email - [secretariat@nde2019.in](mailto:secretariat@nde2019.in)

## REGISTRATION DETAILS

Category	Registration Fees*
ISNT Member	₹ 6000
ISNT Non Member	₹ 7000
Students	₹ 4000

#### Notes:

\*GST extra

Certificate of participation will be provided.

For any queries, please email [technical@nde2019.in](mailto:technical@nde2019.in)

#### Bulk Registration

For Bulk registration please contact below

Name : Karan Chaudhary

Email : [secretariat@nde2019.in](mailto:secretariat@nde2019.in)

Mobile : 09717975700

#### Bank Details

Remittance from India	
Beneficiary Name :	ISNT - NDE
Bank :	State Bank of India
Branch :	Guindy Branch, No- 66, G.S.T. Road, Industrial Estate, Guindy, Chennai - 600032, INDIA
Account No :	38499539214
IFSC Code (for India) :	SBIN0000956
MICR Code :	600002072
SWIFT Code (for Abroad) :	SBININBB227