SPECIAL SESSION SS1

ID233, *Application of Ultrasonic Phased Arrays for Detecting Discrepancies in Continuous Laser Welding*, Giuseppe Citro, Eric Colace, Dario Panaccione

ID275, *Multimodal Non-Destructive Testing and Fusion: Case Study on Lightweight Aerospace Structures*, Nan Yue, Ana Menéndez Orellana, Ludovica Tromba, Raffaella Sesana, Christian U. Grosse

ID409, *Eddy Current Testing for Subsurface Defects in Dissimilar Aluminum Alloy Joints Produced by Friction Stir Welding Method*, Izabela Kalemba-Rec, Sarken Kapayeva, John Hansen, Marek Bergander

ID440, *How As-Built Surface Waviness Affects the Fatigue Performance of Steel Components Remanufactured by Wire Arc Additive Manufacturing*, Robin Motte, Matthieu Vander Linden, Dana Ghesquiere, Luka Steenssens, Anil Sudhakar, Kris Hectors, Wim De Waele

ID474, *A Multimodal Non-Destructive Method for Local and Non-Local Characterization of Residual Stresses in Rolled Steel Plates*, Alain Lhémery, Flavien Agon, Sarah Vincent, Julien Moine, Quang Anh Vu, Kerian Wegerhoff, Fan Zhang, Laurent Daniel, Abdellahi Abderahmane, Mathieu Domenjoud, David Quidort, Guillaume Cousin, Antoine Proust

ID497, *Ultrasonic Imaging of Flaws in Thick-Walled Impeller Test Block Using FMC-TFM and PWI*, Prashanth Kumar Chinta, Robert Peip, Stephan Falter, Martin Spies, Giovanni Zappavigna, Lorenzo Parrotta

ID658, *Applications of Pulsed Eddy Current Testing (PECT) in Thickness Measurements on Components with Coatings or Insulation,* Alessandro Magni, Marco Casaril

ID660, *Re-Machine – Multimodal Inspection of Wind-Turbine Bolts for* Reusability, Kevin Schmitz, Thomas Schwender

ID663, *Comparing Infrared Thermography and Digital Image Correlation for Fatigue Crack Initiation Detection in Cold-Spray Repaired Aluminium Specimens.*, Somsubhro Chaudhuri, Sruthi Krishna Kunji Purayil, Mauro Madia, Sören Nielsen

ID711, *Eddy Current and Ultrasonic Near-Surface Flaw Detection in Additively Manufactured Ti-5Al-5V-5Mo-3Cr*, Brendan Halliday, Kate van Herpt, Mohammad E. Bajgholi, Allyson Eastmure, Fan Liu, P. Ross Underhill, Catalin Mandache, Thomas Krause

ID822, *Multi-Modal Non-Destructive Evaluation of Lightning Strike Damage in CFRP Composites Using Thermography and X-ray Computed Tomography*, Sreedhar Unnikrishnakurup, Vinod Kumar, Jonathan Zheng, Santhakumar Sampath, Zi Wen Tham, Zhang Lei, Siok Wei, Warintorn Thitsartarn, Andrew Ngo

ID852, *Sim-MDL: Multimodal Deep Learning for TBC Evaluation using Infrared and Terahertz Imaging NDE*, Sruthi Krishna Kunji Purayil, Krishnan Balasubramaniam

ID874, *AI-driven Prediction of Structural Steel Mechanical Properties using Ultrasound and Eddy Current Testing*, Zaki Bin Muhammad Sham, Shagea Alqawzai, Haris Sufyan Bin Mohamad, Thi Qui Nguyen, Mingshan Zhao, Zhang Linyun

ID876, *AI-Driven Prediction of Structural Steel Mechanical Properties using Chemical Compositions and Hardness*, Zaki Bin Muhammad Sham, Shagea Alqawzai, Haris Sufyan Bin Mohamad, Thi Qui Nguyen, Mingshan Zhao, Zhang Linyun

SPECIAL SESSION SS2

ID323, *Augmented Reality in Aircraft Maintenance*, Judith Hartfill, Rahel Louise Schmied-Kowarzik, Andreas Wilken, Lina Kaschub, Rebecca Rodeck, Gerko Wende

ID332, *A Human-Centric Framework for Incremental and Active Learning in AI-Based Non-Destructive Testing*, Julen Mendikute, Jose Luis Lanzagorta, Irati Sanchez, Iratxe Aizpurua, Irantzu Ermina

ID459, *Personnel Qualification and Ethical Challenges in AI-Driven Automated Decision-Making*, David Gilbert

ID567, *Human Factors and AI for NDE*, Thiago Seuaciuc Osorio

ID599, *Augmenting NDT: How XR Supports Data Acquisition, Interpretation, and Reporting*, Daniel Conniffe, Ruoxuan Zhu, Adam Fletcher, Anthony Peyton, Jim Skelton

ID709, *Recommendations for the Human-Centred Implementation and Acceptance of Advanced Technologies in Non-Destructive Testing*, Marija Bertovic, Sophie Berretta, Christiane Trela

ID779, *Remotely Operated Inspection of Complex Surfaces without Programming using Flexible Wedges*, Jean-Philippe Merle, Jérôme Poguet

ID780, *Traceability of Manual NDT Scanning not using Encoded Scanners*, Jean-Philippe Merle, Jérôme Poguet

SPECIAL SESSION SS3

ID119, *Prediction of Structural Integrity Assessment Parameters from Ultrasound Images via Machine Learning*, Junlei An, Qiang Liu, Nicolas Larrosa, Jie Zhang

ID135, *Physics-Driven Neural Network Solver for Electromagnetic Non-Destructive Evaluation*, Yutong Du, Zicheng Liu

ID151, *Simulation-Based Neural Networks for Ultrasonic Testing*, Channa Nageswaran

ID179, *Manipulating Ultrasonic Data from Test Pieces to Create Blind Datasets*, Christopher Curtis

ID229, *Quantifying Corrosion Progression Through Text–Image Embeddings with CLIP*, Ramon Helwing, Frank Walther

ID235, *Probabilistic Deep Learning for Reliable Diagnostics using Guided Wave*, Jaebeom Lee, Clément Fisher, Seungjun Lee, Choon-Su Park, Pierre Calmon

ID266, *Defect Detection AI for Casting in Radiographic Testing based on Image Simulation*, Haruka Ikeda, Seiya Inagi, Kazuchika Iwami, Sadato Hiratsuka

ID416, *Correlation-Based Memory Updating for Continual Learning under Limited Data Conditions*, Chanwon Park, Jaebeom Lee, Young-Joo Lee

ID452, *Crack Characterization Using Multi-Scale Scattering Matrix Denoising Extrapolation and Optimal Scale Selection*, Yiliang Hu, Long Bai

ID580, *Defect Classification in Wire Arc Additive Manufacturing via a Semi Supervised Teacher–Student Model*, Maedeh Gourakani, Carmelo Mineo, Donatella Cerniglia, Andrea Bertazzo, Federica Tiso, Giovanni Avallone

ID615, *Embedded Deep Learning System for Reliable Operator Support in TFM-based Weld Inspection*, Robin Guyon, Matthew Newson, David Roué, Auguste Gervais, Roberto Miorelli, Clément Fisher

ID642, *Generating Synthetic Ultrasonic Testing Data with Deep Learning: Comparing Simulated and Deep Learning-Based Flaw Responses*, Caleb Watson

ID725, *Training 3D AI models for PAUT: Performance, Data Needs, and Deployment Considerations*, Richard Rhéaume

ID731, *Efficient Transformers for X-Ray NDT in Limited Data Scenarios*, Ihssane Ghalas, Jennifer Vandoni

ID736, *Physics Based Synthetic Data Generation for Non-Destructive Testing Applications*, Christophe Reboud, Roberto Miorelli, Anthony Touron, Nicolas Leymarie

ID803, *Physics-Informed Filters for Reconstructing Missing Data in Ultrasonic Guided Wavefields*, Michael MacIssac, Amanda Beck, Woohyun Eum, Charlie Tran, Joel Harley, Ghatu Subhash

ID815, *The Applicability of Virtual Flaw Data Augmentation across NDE Modalities*, Topias Tyystjärvi, Oskar Siljama, Tuomas Koskinen, Oskari Jessen-Juhler, Iikka Virkkunen

ID894, *1D-CNN for Automated Characterisation of Thermal Fatigue Cracks*, Thomas Beckingham, Jason F. Ralph, Stewart G. Haslinger, James Gaffney, Daniel Colquitt, Peter Huthwaite, Mike Lowe

SPECIAL SESSION SS4

ID197, *Vision–Language Model Assisted Interpretation in Radiographic Welding Defect Evaluation*, Haoyu Wen, Baoxin Zhang, Xuefeng Zhao, Juntao Wu, Jiajia Liu, Wangwang Liu, Ruotong Zhang, Hao Qiu, Xinghua Yu

ID342, *X-Ray Defect Recognition – Reliable and Efficient with AI Support*, Christopher Zepp

ID489, *Applications of AI in Non-Destructive Examinations*, Teodor Tranca, Mircea Tranca, Raimund Zeman, Cezar Petru Ardeleanu Blaga

ID553, *Lightweight Super-Resolution Enhanced YOLOv8 for Improving Consistency in Radiographic Defect Detection of Titanium Alloy Weld Seams*, Zhiwei Zhang, Jingzhao Wang, Chao Zhang, Xinyan Wang, Xuwu Chai, Jingyuan Gao, Xiaotong Liu, Bingyang Wang

ID585, *Fully Autonomous Defect Detection in 3D-CT Data using the Example of 3D Metal Printing*, Sven Gondrom-Linke, Tiago Ramos

ID689, *Projection-Domain Defect Segmentation for Accelerated Quality Assessment in Industrial Computed Tomography*, Tim Schanz, Robin Tenscher-Philipp, Martin Simon

ID721, *X-Ray Digital Radiography and Computed Tomography: Investigation of Defect Detection Capabilities with Conventional and Artificial Intelligence Solutions - A Case Study in the Aerospace Industry*, Valentina Aloisi, Stephan Tschechne, Edson Costa-Santos, Christian Wojek

ID859, *CT Based Deep Learning and Physics-Informed Surrogate Models for Structural Integrity Evaluation*, Martin Simon, Tim Schanz, Robin Tenscher-Philipp

ID915, *Automated Defect Recognition in Solid Rocket Motor Manufacturing: Reconciling AI Performance Metrics with ECSS POD Requirements for Digital Radiographic Inspection of Solid Rocket Motors*, Domenico Telesca, Liberata Furente, Alessio Franchina

SPECIAL SESSION SS5

ID427, *Integration of UPV Data In H-BIM Environment for Strength Estimation and Monitoring of Building Stones in Architectural Heritage*, Emilia Vasanelli, Matteo Sticchi, Gianni Blasi, Daniele Perrone

ID473, *NDT, Building Models, Numerical Simulations, Image Fusion, and Virtual Reality – Case Study Investigating an Old Cultural Heritage Structure*, Christian U. Grosse, Mohamed Elkarmoty, Thomas Schumacher, Benoit Marini, Mehdi Tayoubi, Hany Helal

ID482, *Data-Driven Integration of Non-Destructive Envelope Diagnostics into HBIM for Energy-Aware Digital Models of Historic Buildings*, Domenico Palladino, Silvia Di Turi, Nicolandrea Calabrese, Angelo Massafra, Ugo Maria Coraglia

ID643, *Assessing Cultural Heritage with NDT: Julio Escámez's 'Principio y Fin' Mural*, Rodrigo Vargas, Mario Barrera, Gonzalo Bastias, Jaime Lisboa, M. Angela Benavente, Rodrigo Reyes

ID757, *BIM Oriented Non-Destructive Testing of a Reinforced Concrete Building*, Gian Marco Revel, Rifat Seferi, Angelo Tatì, Elena Candigliota, Gloria Cosoli, Giuseppe Marghella, Anna Marzo, Saverio Mazzarelli, Concetta Tripepi, Vincenza A.M. Luprano

ID758, *Integrating NDT Results into BIM for Social Housing Renovation: The ReHouse Project methodology*, Patrizia Aversa, Monica Misceo, Antonio Di Micco, Salvatore Tamburrino, Carla Di Biccari, Mattia Mangia, Emanuela Brai, Paola M. Albanese, Valeria Cascione, Vincenza A. M. Luprano, Angelo Corallo

ID898, *Mutual Validation of UPV, Schmidt Hammer, and Windsor Probe Tests for Estimating Compressive Strength of Earthquake-Damaged Concrete*, Mehmet Esen Eren, Cenk Fenerli

ID902, *Monitoring of a Prestressed Concrete Bridge During Phases of Induced Damage through Cutting of Prestressing Cable Strands*, Luca Ranedda, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Daniele Insana, Antonio Mucciarone

ID904, *A Model-Based Digital Twin for Structural Health Monitoring*, Soroosh Kamali, Antonio Palermo, Rosario Ceravolo, Alessandro Marzani

SPECIAL SESSION SS6

ID134, *Potential of Muon Tomography in Bridge Investigations*, Ernst Niederleithinger

ID208, *Enhanced SAFT Imaging of Concrete by Correlation-Based Reflector Classification*, Andrey Bulavinov, Dmitriy Dolmatov, Viktor Shevaldykin, Roman Pinchuk, Andrey Samokrutov, Sergey Nazhestkin, Arezoo Imani

ID220, *Research on Tension Pulsed Eddy Current Estimation Method for Steel Strand Using Analytical Model*, WenLong Zhang, XinJun Wu, LingSong He

ID270, *Evaluation of Post-Tensioned Bridges with NDT Techniques*, Guy Rapaport

ID650, *Static and Dynamic Characterization of the Historic Truss Bridge over the Po River at Becca: A Comparative Analysis with the Results of the 1980s Investigation Campaign*, Calogero Pio Di Vita, Giorgia Campori, Diego Esposito, Daniele Insana, Antonio Mucciarone, Luca Ranedda

ID656, *Analysis of Degradation Mechanisms in the Deck Slab of the Lussari Viaduct Using Non-Destructive Testing: a Ground Penetrating Radar Approach*, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Daniele Insana, Antonio Mucciarone, Anna Marta Pozzi, Luca Ranedda, Davide Testa

ID676, *Residual Prestress in Post-Tensioned Concrete Structures: Review, Laboratory and In-Situ Experiments*, Antonio Mucciarone, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Egidio Lofrano, Daniele Insana, Luca Ranedda

ID677, *Diagnostic Approaches for Evaluating Structural Improvement Interventions on Arch Bridges - Case study "Pasquarella" Bridge*, Diego Esposito, Giorgia Campori, Calogero Pio Di Vita, Daniele Insana, Antonio Mucciarone, Luca Ranedda

ID754, *Investigation of the Changes in the Mechanical Properties of Chloroprene Rubber (CR) under Thermal Oxidation Aging by Ultrasonic Techniques*, Pincheng Su, Violaine Tinard, Pierre François, Christophe Fond

ID773, *Assessment of Void Volume in Post-Tensiong Ducts Via the Vacuometric Technique*, Roberto Felicetti

ID814, *Reconstruction of Prestressing and Shear Reinforcement Using the Non-Destructive GPR Technique – Application to a Gerber Beam Structure*, Daniele Insana, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Antonio Mucciarone, Luca Ranedda

ID858, *Fault Detection Algorithm Implementation for Distributed Sensor Networks*, Wilgo Moreira Nunes, Pedro M. Ferreira, João dos Reis

ID863, *Model-Assisted Ultrasound Computed Tomography for PT Duct Inspections in Concrete Bridges*, David Sollberger, Fabian Lindner, Lion Krischer, Chris Udell, Christian Boehm

ID897, *Inspection Data Based Rapid Assessment of Corrosion in Reinforced Concrete Bridges*, Ali Siddique, Alejandro Pérez Caldentey, Antonio Bilotta

ID916, *Deep Learning Based Multiclass Surface Damage Detection for RC Bridge Inspection using UAV Imagery*, Ali Siddique, Vittorio Prodromo, Antonio Bilotta

ID932, *An Integrated Investigation Framework for Knowledge Enhancement in the Safety Assessment of a Historical RC Gerber Half-Joint Bridge*, Andrea Gennaro, Nicola Molon, Simone Ravasini, Marco Carlo Rampini, Nzeeh Roumia, Elisa Saler, Beatrice Belletti, Marco Di Prisco, Claudio Mazzotti, Gilberto Artioli, Antonio Bilotta, Francesca da Porto

SPECIAL SESSION SS7

ID117, *Evaluation of Alternative Broken Rail Detection Systems*, Anish Poudel, Survesh Shrestha

ID148, *Automated Maintenance for Rolling Stock - Safety and Reliability of Rail Wheels Due to Innovative NDT Technology and Robotics*, Daniel Werner, Frank Kahmann, Thomas Wuerschig, Andreas Franzen, Frank Henrix

ID242, *Advanced Ultrasonic Testing of Hollow Railway Axles by the Phased Array Technique*, Michele Carboni, Massimo Carminati, Pierluigi Donzelli, Riccardo Galvani, Lucio Rota

ID252, *Digital Eyes on the Axles and Wheels: Remote and Intelligent Magnetic Particle Inspection*, Simona Vettese, Michele Burei, Domenico Paladino

ID277, *Air-Coupled Impact-Echo for Non-Destructive Testing of Prestressed Concrete Sleepers*, Christoph Strangfeld, David Ringeloth, Moritz Sieber

ID295, *A Diffusion-Based Unsupervised Framework for Wheelset Ultrasonic Defect Detection*, Qian Zhang, Fuben Zhang, Haoyu Ding, Ai Wang, Jianping Peng, Xiaorong Gao, Kai Yang

ID314, *Self-Supervised Anomaly Detection in Extremely Imbalanced Ultrasonic Railway Data: An Adaptive Triplet-Center Approach*, Huiying Li, Timo Hartmann

ID354, *NDT Methods for Crack Detection In Prestressed Concrete Railroad Sleepers*, Susanne Hillmann, Martin Friese, Jan Gräfing, Gisbert Berger, Christoph Strangfeld, David Ringeloth, Aurimas Pukenas, Peter Krüger, Dirk Hofmann, Selina Vaculik, Mario Aguilar, Christian Linden

ID365, *Research on Steel Rail Surface Rolling Defect Detection Using the Fusion of Inductive Thermography and Optical Imaging Technologies*, Kang Tian, Liaoyu Kou, Bo Zhao, Xiaorong Gao, Jianping Peng

ID419, *Efficient Evaluation of Ultrasonic Phased Array Performance with Applications to Limited-Firing Scenarios*, Nachman Malkiel, Anthony J. Croxford, Paul D. Wilcox

ID442, *Pasawis – The innovative Wheel Set Inspection System*, Stefan Caspary, Christian Conrad, Angélique Raude

ID507, *Experimental Evaluation of Magnetic Flux Leakage for Railway Non-Destructive Testing*, Alessandro Paolo Daga, Luigi Garibaldi, Aldo Canova

ID533, *Non-Destructive Residual Stress Measurement in Railway Wheels by Using Ultrasound*, Matteo Rosafio, Damiano Sallemi, Mauro Del Giorgio, Tiziano Buzzella, Marco Sarti

ID578, *Evaluation of Eddy Current Testing Capabilities for Detecting Surface Flaws in Axles at the Manufacturing Stage*, Giovanni Corti, Claudio Rocchi, Fabio Turla, Francois Vicat

ID609, *From Magnetic Particles to Eddy Current Inspection: How to Transform Surface Inspection*, Ondřej Doubek

ID611, *Fully Automated Ultrasonic Testing of Bearing Rings for Railway Applications*, Petr Žbánek

ID640, *Split-D Differential Eddy Current Probes for Evaluating Rolling Contact Fatigue Defects in Railway Rails*, Leandro Serraiocco, Javier Fava, Ramiro Gonzalez, Benicio Dominguez, Joaquin Rolla Napal, Marta Ruch

ID687, *New Concepts for Automated Railway Track Inspection*, Sven Lutter, Gerald Schneibel

ID690, *A Comprehensive Technical Review of the Non-Destructive Methods for Rail Inspection*, Nasim Fallahi, Luigi Garibaldi

ID713, *UT Testing of Hollow Railway Axles - Presentation of the Boreaxle Machine BAT4*, Damiano Sallemi, Matteo Rosafio, Mauro Del Giorgio, Tiziano Buzzella, Marco Sarti

ID745, *Proactive Technical Monitoring in Local Public Transport Companies: Practices and Future Outlooks @ Azienda Trasporti Milanesi*, Giuseppe Cassinelli, Andrea Simino, Jihad Karaki

ID895, *Integrated NDT Approaches for Characterizing Stud-Type Rail Defects: a Comparative Case Study*, Meirbek Mussatayev, Ruby Kempka, Roger Lewis, Ian Sinclair, Fernando Alvarez Borges, Mohammad Ali Fakih

SPECIAL SESSION SS8: Non-destructive testing and evaluation of composite materials

ID192, *Comparison of Terahertz and Infrared Thermography Methods for Detecting Defects in Aramid Fiber Reinforced Composites*, Waldemar Swiderski, Tomasz Krzeminski

ID218, *Measuring Cracks and Corrosion in Aluminium Backup Structure through Composite and Low Observable Coating*, H. Patrick Jansen, Arnoud F. Bosch, D. Jacco Platenkamp

ID226, *Automated NDT Solutions for Complex Aerospace Components: Advancing Flight Safety and Inspection Efficiency*, René Sicard, Ahmad Chahbaz

ID234, *Characterization of Porosity and Pore Geometry Using Acoustic Resonance Analysis*, Linus Littner, Igor Solodov, Marc Kreutzbruck

ID279, *Adaptive Fusion Imaging for Delamination Defects in GFRP Composites Based on Terahertz Time-Domain Spectroscopy*, Zenghua Liu, Rui Li, Yanping Zhu, Xiaoran Wang, Xin Zhao

ID280, *Guided Wavefield Damage Imaging Method via Two-Dimensional Multi-Frequency Sparse Wavenumber Spectrum Reconstruction*, Zenghua Liu, Xiaoyu Liu, Yanping Zhu

ID316, *Simultaneous Thickness Measurement of Multiple Bondlines using Transmission Measurements*, Arno Volker, Patrick Jansen

ID390, *Experimental and Numerical Investigation of Orientation Dependent Eddy Current behavior in CFRP Laminates*, Atul Sharma, Robert Hughes

ID399, *Advancements in Direct Velocity Mapping Applied to Composite Panels*, Jan-Willem Vrolijk, Emiel Hassefras, Marco Mout, Maurits van der Heiden, Egon Merks-Swolfs, Quincy Martina

ID422, *Acoustic Emission and Distributed Backface Strain Monitoring of Crack Growth in Composite Adhesively Bonded Joints Under Mode II Fatigue Loading*, Alessandra Panerai, Benedetta Oneda, Luca Michele Martulli, Andrea Bernasconi, Michele Carboni

ID463, *Defect Reconstruction via Total Focusing Method and Phase Coherence Imaging for Materials Exhibiting Elliptical Anisotropy*, Martin Spies, Prashanth Chinta, Stephan Falter

ID535, *Development of Lamb Wave and CNN–Integrated Damage Identifier for GFRP Composites*, Yonghee Lee, Yong Suk Oh, Juyeop Park, Donghoon Kang

ID586, *Feasibility of a Scalable All-Optical Network Architecture for Non-Destructive Testing of Composites*, Benoit Quesson, Alvaro Gonzalez Jimenez, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer

ID588, *Applicability of Air-Coupled Rayleigh Waves for Inspection of As-Printed BAAM Components*, Ander Dominguez-Macaya, Nekane Galarza, Jon Olaizola, Jose Manuel Abete

ID629, *Improved Sensitivity Fiber Optic Readout System Based on Pi-Shifted Fibre Bragg Gratings and Mode Locked Lasers for Composite Structures Inspection*, Alvaro Gonzalez Jimenez, Benoit Quesson, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer

ID685, *Automated Damage Detection in Carbon-Fiber Reinforced Polymers using Air-Coupled Ultrasound and Neural Networks,* Olga Popovych, Kher Wei Lai, Ana Menendez Orellana, Christian U. Grosse

ID739, *Non-Destructive Tests on DLP-Based 3D-Printed h-BN/Graphite Polymer Composites*, Marco Fortunato, Angelo Tatì, Daniele Mirabile Gattia

ID783, *Ultrasonic Probe Mimicking Technique and its Application to Porosity Measurement in Composite Materials*, Julien Walter, Alexandre Beausoleil, Olivier Arès

SPECIAL SESSION 9: Non-destructive testing of batteries and energy storage systems

ID330, *Multi-stage Image Processing Approach for 3D-CT Based in- or at-line Inspection of Battery Cells*, Sven Gondrom-Linke, Tiago Ramos, Simon Schmid

ID506, *Resonant Eddy Current Sensing for Contactless Monitoring of Lithium-Polymer Cells*, Alessandro Sardellitti, Federico Carere, Ahmed Hishman Br, Silvia Sangiovanni, Marco Laracca

ID523, *An Innovative Non-Invasive Method for State of Charge Estimation in Lead-Acid Cells via Eddy Current Sensing*, Federico Carere, Alessandro Sardellitti, Ahmed Hisham Br, Silvia Sangiovanni, Marco Laracca

ID589, *From Reactor to Lab: Scaling Neutron Radiography for Industrial NDT Applications*, Serge Duarte Pinto, Arthur Bongrand, Olivier Bonnet, Julie Dalleau, Anthony David, Sean Gardell, Johann Kadionik, Olivier Merlin, David Pasquale, Juan Reyes, Steve Ritzau, Axel Rizzo, Florian Robert, Dmitriy Tipikin, Alexis Toussaint, Vincent van Steenbergen

ID619, *An Improved EIS for Battery State Estimation: a Non-invasive Measurement Approach*, Alessio Miele, Filippo Milano, Mario Molinara, Luigi Ferrigno

ID623, *Observation of Electrolyte Dynamics in Li-ion Batteries via In-situ Computed Tomography*, Jakub Šalplachta, Zuzana Stravová, Gergő Ballai, Dániel Sebok, Ákos Kukovecz

ID777, *Time-to-Insight as a Metric for Battery CT Inspection Full*, Christopher Zepp

ID884, *Linear and Nonlinear Ultrasonic Features for the Estimation of the State-of-Charge in Lithium-ion Battery Cells*, Gregorio Cappuccino, Domenico Luca Carnì, Stefano Laureti, Vincenzo Maccaronio, Rocco Zito, Marco Ricci

SESSIONE SS10: Nonlinear Ultrasonics

ID139, *Nonlinear Wave Mixing Techniques to Characterize Materials*, Laurence J. Jacobs

ID163, *Assessment of the Industrial Applicability of the Fundamental Wave Amplitude Difference Method for the Inspection of Welds*, Arthur Perrin, Ewen Carcreff, Sylvain Deutsch, Jonathan Peixoto

ID228, *Theoretical Basis of the Non-Destructive Testing using Quaternion Algebra*, Sadataka Furui

ID238, *Vibro-Ultrasonic Phased Array utilizing Local Defect Heating due to Nonlinear Phenomena for Crack Imaging*, Yoshikazu Ohara, Taketo Iijima, Toshiki Yoshikawa, Ryo Taniuchi, Akira Nagakubo, Łukasz Pieczonka, Koen Van Den Abeele

ID248, *Monitoring Corrosion-Induced Damage in Concrete using Nonlinear Cross-Modulation and Acoustic Emission*, Markus Nilsson

ID453, *Multi-Mode Nonlinear Resonant Ultrasound Spectroscopy (MM-NRUS) for Quality Control of Additively Manufactured Metals*, Rui Zhang, Adil Han Orta, Mathias Kersemans

ID484, *Acousto-Optic Tomography-Holography: a Novel, Sensitive and Quantitative NDT Method*, Yusheng Ma, Cedric Debusschere, Koen Van Den Abeele, Mathias Kersemans

ID509, *Applications of Micro-Hollow Cathode as a Transmitter for Air-Coupled Ultrasonic Testing*, Mate Gaal, Dmitry Solodov, Narges Nazari

ID710, *Nonlinear Coda Wave Interferometry: Preliminary Results into using Ambient Noise as Pump*, Shilan Shaabani, Pierric Mora, Parisa Shokouhi, Olivier Durand, Odile Abraham

ID835, *Quaternion Theory for Nonlinear Ultrasonics Testing*, Serge Dos Santos, Sadataka Furui

ID847, *Nonlinear Ultrasonic Characterization of Thermal-aging Effects on Contaminated Epoxy Polymers*, Do-Kyung Pyun, Jonghwan Park, Jaesun Lee

ID888, *Non-Destructive Testing in (3+1)D and Optimal Path Search using Machine Learning Techniques*, Sadataka Furui

SESSIONE SS11: Neutron and other non-destructive nuclear techniques for heritage science

ID331, *Production of ^{26}Al and ^{10}Be via Neutron Reactions in SiO_2 Rocks: Implications for Burial Dating Related to the Cradle of Humankind-UNESCO World Heritage Sites*, Sara Rabaglia, Nicholas Pieretti, Cristian Massimi

ID593, *Neutron and X-Ray Tomography for Non-Destructive Characterisation of Archaeological Iron Artefacts and Assessment of Conservation Treatment*, Laura Cristina, Ocson Cocen, Seren Azad, David Mannes, Anders Kaestner, Laura Brambilla

ID673, *Neutron-Based Methods for Heritage Science: a Case Study on a Nuragic Figurine*, Matteo Cataldo, Massimiliano Clemenza, Sylvia Britto, Antonella Scherillo, Nadia Canu, Giulia Marcucci, Valeria Sipala, Bruno Billeci, Piernicola Oliva

ID700, *Muonic Atom X-Ray Emission Spectroscopy (μXES) for Cultural Heritage: the INFN-CHNet Experience*, Paola Monza

ID755, *Provenance Investigation of Cultural Heritage Materials with Ion Beam Analysis*, Marta Magalini, Laura Guidorzi, Alessandro Re, Alessandro Lo Giudice

ID772, *Calibration of Bragg Edge Neutron Transmission Analysis and Characterization of Ancient Bronze Mirrors from Magna Graecia*, Matilde Dematteis, Miriana Marabotto, Alessandro Re, Alessandro Lo Giudice, Laura Guidorzi, Marta Magalini, Francesca Tansella, Chiara Garagiola, Sylvia Britto, Ranggi Ramadhan, Francesco Grazzi, Diego Elia, Valeria Meirano, Fabrizio Sudano, Elena Rita Trunfio, Daniela Di Martino

ID792, *Unlocking Hidden Material Signatures through Neutron Resonance Transmission Imaging*, Giulia Marcucci, Daniela Di Martino, Costanza Cucini, Maya Musa, Maria Pia Riccardi, Antonella Scherillo

ID843, *Non-Invasive High-Resolution Neutron Tomography for the Study of Filigree Decoration of the Chiaravalle Cross*, Luisa Vigorelli, Floriana Salvemini, Klaud Jakubowski, Mitra Safavi-Naeini, Giulia Marcucci, Costanza Cucini, Maria Pia Riccardi, Daniela Di Martino

SPECIAL SESSION 12: Active Thermography Techniques for NDT and Material Characterization

ID166, *Measurement of Metallic Material Grain Size Using Total Focusing Ultrasonic Images*, Weixin Wang, Paul Wilcox, Jie Zhang

ID230, *Comparison of Lockin- and Pulse Phase Thermography for Foreign Object Detection in Prepreg Ply Assembly*, Manuel Ederer, Santhosh Ayalur-Karunakaran, Gerhard Traxler

ID245, *Rapid Quantitative Assessment of Lightweight Metal Additive Structures Using Thermoelastic Stress Analysis*, Joshua Rodrigues, Matthew Pelosi, Wayne Foster, Simon Barter, Raj Das

ID249, *Active Infrared Thermography for the inspection of thermoplastic composite welds*, Daniella B. Deutz, H. Patrick Jansen

ID304, *Non-destructive Evaluation of Microcracks in WC-10Co-4Cr (HVOF) Coatings Using Eddy Current Testing and Induction Thermography*, Niklas Steinbrecher, Hans Jürgen Maier, Sebastian Barton

ID329, *Coupling Eddy Current and Thermal Diffusion Simulation to Model Induction Infrared Thermography in CIVA*, Marc Bakry, Rutger A. Biezemans, Edouard Demaldent

ID395, *FK-VWT: Frequency Kernel Based Virtual Wave Thermography for Composite Panels*, Xiangyu Wang, Mathias Kersemans, Anastasiia O. Krushynska, Ihsan E. Bal, Qiuji Yi, Liangliang Cheng

ID467, *Active Thermography with Pulse Compression for Thermally Fast Materials*, Julien Lecompagnon, Rocco Zito, Stefano Laureti, Mathias Ziegler, Marco Ricci

ID469, *Superpixel Graph Attention Network for Crack Segmentation in Complex Components Using Automated Laser Thermography*, Sruthi Krishna Kunji Purayil, Rita Fioresi, Michela Lapenna, Philipp Daniel Hirsch, Julien Lecompagnon, Mathias Ziegler

ID626, *Towards Non-destructive Prediction of Porosity-induced Mechanical Property Variations in L-PBF AlSi10Mg via Pulsed Laser Thermography*, Giuseppe Dell'Avvocato, Veronica Pocetta, Paolo Bison, Stefano Rossi, Umberto Galietti, Giovanni Ferrarini

ID662, *Crack Characterization in Ferromagnetic Steel Using Inductive Thermography*, Ester D'Accardi, Giuseppe Dell'Avvocato, Davide Palumbo, Umberto Galietti, Beate Oswald-Tranta

ID671, *Emissivity Compensation for Thermographic Inspection of Grey Cast Iron Components*, Philipp Daniel Hirsch, Sruthi Krishna Kunji Purayil, Nils Scheuschner, Julien Lecompagnon, Rainer Krankenhagen, Mathias Ziegler

ID686, *Exploiting Mismatched Filter for Barker Code Pulse Compression Thermography*, Rocco Zito, Julien Lecompagnon, Stefano Laureti, Mathias Ziegler, Marco Ricci

ID702, *Defect Segmentation Using Deep Learning to Reduce the Complexity of Pulsed Thermography Data*, Julian Grimm, Gerald Zauner, Günther Mayr, Gernot Mayr

ID832, *Online Evaluation of Ultrasonically Welded Carbon Fiber Reinforced Thermoplastic Laminates by Means of Infrared Vibrothermography*, Mattia Tornabene, Massimiliano Russello, Giuseppe Pitarresi

ID836, *Active Thermography for Quality Control and Defects Detection in PEKK TPMS Lattice Structures*, Fabio Distefano, Gabriella Epasto, Fabrizio Freni, Roberto Montanini, Mario Valenti

ID837, *Defects Characterization by Using a Deep Learning Approach on Thermal Data*, Tiziana Matarrese, Luis Antonio Felipe Sesé, Ángel Jesus Molina Viedma, Elías López-Alba, Francisco Alberto Díaz Garrido, Umberto Galietti, Davide Palumbo

ID879, *Linking Diffusive Fields to Virtual Waves as Their Propagative Duals*, Peter Burgholzer, Lukas Gahleitner, Guenther Mayr

SESSIONE SS13

ID191, *The OpenNDE Data Format*, Vincent Bergeaud, Steve Holland, Terrill Massey, Andreas Schumm, Paul Wilcox

ID269, *Trends in the Digitalisation of NDT*, Martin Wall, Zubeir Ebrahim Saib

ID291, *Digital Integration of a Robotic NDT System Through a Real-Time Data Pipeline*, Faris Nafiah, Mael Sautin, Andrew Kelly

ID424, *Advancements in Nondestructive Testing and Monitoring Process*, Christian Conrad, Yasmine Gabi, Thorsten Mueller

ID464, *ONDE (Open Non Destructive Examination) File Format – Technical Choices*, Vincent Bergeaud, Sylvain Chatillon, Steve Holland, Terrill Massey, Quentin Mistral, Andreas Schumm, Paul Wilcox

ID579, *Implementation of DICONDE for the Storage of Ultrasonic Waveform Data: A Core Enabler for NDE 4.0*, Johannes Vrana, Daniel Schaefers, Jacob Rühe, Wolfram Deutsch

ID600, *Assessing the Accuracy and Precision of XR Tracking for NDT Inspection*, Daniel Conniffe, Adam Fletcher, Anthony Peyton, Alex Salem, Jim Skelton

ID622, *Deep Learning Based Automatic Analysis of Multimodal TFM data in Elbow-Tube Weld Junctions in Nuclear*, Roberto Miorelli, David Roue, Sébastien Robert

ID624, *Simple Approach for Testing Distance Detection during 3MA-II lift-off Measurements on Moving Components Based on PCA and SVM*, David Böttger, Yasmine Gabi

ID661, *NDE 4.0 and Artificial Intelligence: Partnership and Evolution of AI Applications*, Rafael Martinez-Oña

ID701, *The NDE Value Alliance: Architecting the Trust and Interoperability Framework to Accelerate NDE 4.0 through Collaborative Standardization*, Johannes Vrana, Ripi Singh, Tjibbe Bouma, Niels Westendorp, Holger Haßdenteufel, Bernd Valeske

ID704, *The Evolution of NDT Documentation: Establishing a Machine-Readable Language for NDE 4.0 through the DX-Schema Project*, Johannes Vrana, Frank Leinenbach, Thomas Engel, Sascha Eichstädt, Michael Melzer

ID844, *Ultrasound Software based Tomography for Porosity and Defect Characterization in Complex Composite Structures*, Piotr Karwat, Marcin Lewandowski, Krzysztof Dragan

ID896, *Deployment Relevant Uncertainty Quantification for NDE 4.0 Applications*, Zi Li, Lei Peng, Yiming Deng

ID945, *The Positive Effect on Compliance, Security, and Efficiency by the use of State-Of-The-Art NDT Management Software*, Achim Hansen, Andreas Thielen

SPECIAL SESSION 14: Custom pulsing for ultrasonic NDT

ID167, *Applications of Laser Diffuse Ultrasonic Phased Arrays for Three-dimensional Imaging Volumetric Defects*, Jun Li, Paul Wilcox, Jie Zhang

ID400, *Enhanced Inspection Applications Using Modulated Ultrasonic Transmitters*, Thomas Würschig, Peter Fey, Walter deOdorico, Stephan Falter

ID582, *Smart Contactless Nonlinear Ultrasound Testing – Research with Opto-Acoustical Arbitrary Waveform Excitation*, Florian Rudinger, Martin Wallner, Bernhard Reitinger

ID664, *Improving Image Quality in Ultrasonic Inspection for Complex Material Using Custom Emission*, Ralph Abirizk, Ewen Carcreff

SESSIONE SS15

ID162, *Fatigue Cracks: Criteria to Overcome the Detection Limit in the Early Stage*, Giuseppe Nardoni, Marco Feroldi, Fabio Savoldi, Diego Nardoni

ID165, *Deep Learning-Supported Automated Evaluation of Dye Penetrant Inspection Results in Compliance with EN 1371-1 and ASME Section VIII*, Peter Haupts, Sebastian Pose, Mohieddine Jelali

ID194, *Methodologies for Verifying the Optimal Magnetic Field in the Fluorescent Magnetic Particle Method,* Massimo Capriolo, Riccardo Banin, Elisa Ferrari, Pierangelo Crippa

ID356, *Investigating the Quality of Grouting for Tendon Ducts using Numerical UT-Simulations,* Fabian Dethof, Francesca Marsili, Sylvia Keßler

ID359, *Nonlinear P-POD: Enhancing Probability of Detection in X-ray Thickness Inspections*, Kerstin Kirschbaum, Matthias Goldammer, Christian U. Grosse

ID379, *Performance Comparison of Total Focusing and Phased Array under Practical Inspection Uncertainties*, Benoit Jordan, Carlo Romito, Daniel Algernon

ID384, *European Reliability Framework: A Bridge between the Different Systems in NDT and the Key for NDT 4.0*, Daniel Kanzler

ID487, *Tfm–Pci Combination: A New Frontier in Ultrasonic Imaging*, Salvatore Gabriele Torregrossa, Rosario Molica Nardo, Davide Campanella

ID602, *Lift-off Trajectory Analysis for Eddy Current Detection of Millimetre-Scale Cracks in Curved Geometries*, Jingyuan Yang, Qiuping Ma, Guiyun Tian, Cesar Camerini, Qiuji Yi

ID630, *Fatigue Damage Is Not a Crack: Why NDT Must Inform Decisions, Not Just Detection*, Francisco Garcia Torres

ID672, *Human Factors in the Ultrasonic Testing of Railway Axles: Effects of Rare Signals and Automation Support*, Marija Bertovic, Momo Hegeler, Stefan Lichtnekert, Linda Onnasch

ID693, *Microfocus Gantry CT – Innovative Computed Tomography for Use in Research and Industry*, Jens Luebbehuesen, Adrian De Riz, Gábor Szabó

ID717, *Challenges of Remote Camera MPI/FPI Inspections*, Miroslav Šnírer, Patrik Backo, Radek Salač

ID804, *A Novel Method for Fatigue Crack Size Quantification in Spacecraft Structures under Variable Temperature Environment Based on Information Entropy*, Xiaozhen Zhang, Chengguang Fan, Kunyou Jiang, Zongyu Wu, Yong Zhao, Quan Chen, Wenlong Zhang

ID810, *Quantitative Monitoring Method for Hydrochloric Acid Corrosion Based on Lamb Waves*, Xiaozhen Zhang, Chengguang Fan, Kunyou Jiang, Zongyu Wu, Yong Zhao, Quan Chen, Wenlong Zhang

ID941, *Construction of a Phased Array Ultrasonic Testing (PAUT) Performance Demonstration (PD) System for Petrochemical Plant Facilities in Korea*, Sungjong Cho, Hyunjun Kim, Ik Keun Park, Young Min Kim, Byeong Jik Jeon, Minjoo Kim

SESSIONE SS16

ID173, *Ways to Reduce Scan Time for Highest Resolution Computed Tomography Applications*, Andreas Fischer, Tobias Neubrand, Alexander Suppes, Eberhard Neuser

ID251, *Combination of 3D FEM Model and Neural Network for Analysis of Conductive and Ferromagnetic Spots via Non Linear NDT Method*, Yasmine Gabi, Kevin Jacob, David Böttger, Bernd Wolter, Bernd Valeske

ID344, *Internal Temperature Field Prediction Using Helmholtz-Informed Neural Networks*, Pengfei Zhu, Hai Zhang, Xavier Maldague

ID353, *Detection and Staging of Hydrogen Induced Damage in Heat Exchanger Shells using Machine Learning Techniques*, Vykintas Samaitis, Renaldas Raišutis, Aadhik Asokkumar

ID455, *Non-Destructive Characterization and Evaluation of Adhesive Joints using Artificial Intelligence Tools*, Justina Šeštokė, Eglė Butkevičiūtė, Damira Smagulova, Elena Jasiūnienė

ID516, *Connecting AAS and LLMs for Controlling NDT Devices*, Frank Leinenbach, Cemil Emre Ardic, Dharma Panchal, Florian Römer

ID584, *Pioneering Turbine Blade Inspection: Inductive Thermography as a Game-Changing Alternative to Dye Penetrant Testing*, Matilde Labourdette, Rémy Drosson, Thomas Goursolle

ID621, *Leveraging Physics-Constraint Encoder-Decoder Models and Masked Autoencoders for Infrared Temperature Prediction in Tokamaks*, Cheikh. M. B. Cisse, Roberto Miorelli, Marie-Hélène Aumeunier, Alexis Juven

ID648, *Modelling Heat Diffusion in Voronoi-Based Polycrystalline Materials using AI*, Nishi Bhemani, Thulsiram Gantala, Krishnan Balasubramanian

ID670, *Segmentation-Model–Based Detection of Hairline Cracks in Forged Steel Components*, Steve Simmert, Dominik Braun, Ingmar Jakobi, Feli Schanz, Mathias Hauptvogel

ID726, *Periodical Checks for Industrial Applications of Active Thermography*, Samuel Maillard, Jean Nicolas Frouart, Benoit Lasjaunias, André Baillard, Florent Decultot

ID727, *First Approach of IR Camera Calibration Dedicated to NDT Application*, Jean Nicolas Frouart, Samuel Maillard

ID743, *Multi- and Hyperspectral Thermography for Inline Quality Assurance in Metal Additive Manufacturing*, Simon J. Altenburg, Alec Hilberg, Tina Walter, Philipp Peter Breese

ID749, *EPH-iFNO: Self-Evolving Physics-Attention Heads with Fourier Neural Operators for Virtual-Wave Inversion*, Qiuji Yi, Dong Wang, GuiYun Tian, Rocco Zito, Stefano Laureti, Peter Burgholzer, Marco Ricci

ID807, *Non-Invasive Characterization of Petrochemical Tanks via IR Thermography, Digital Twins and AI*, Eneko Aranguren, Raquel Fuente

ID812, *Prediction of Grain Orientation from Thermal Maps Using a Data-Driven and AI Approach*, Nishi Bhemani, Krishnan Balasubramanian

ID871, *Optimizing Thermographic Fatigue-Limit Estimation: GPR, SVR, and Stacking Ensembles within the Two Curves Method for C45 Steel*, Raffaella Sesana, Luca Corsaro, Francesca Cura, Mohsen Dehghanpour Abyaneh, Mohammad Sadegh Javadi

SPECIAL SESSION 17

ID358, *Transition from Internal Visual Testing (VT) to External Robotized Phased Array Ultrasonic Testing (PAUT) for Periodic Pressure Vessel Examinations in Switzerland*, Carlo Romito, Stefano Cipolla, Francesco Centenaro

ID448, *Target 3D for Visual Testing with Drones*, Emanuele Artenio, Giuseppe Augugliaro, Riccardo Balistreri, Davide Gattamelata, Francesco Giacobbe, Omero Spanu

ID508, *Opportunities and Criticalities in Infrared Inspection of Photovoltaic Modules by UAVs*, Hamza Nasri, Jamel Riahi, Silvano Vergura

ID569, *Technological Challenges in Drone Based NDT Contact Inspections*, Simone Panza

ID674, *Drone-Based Multi-Modal Inspection of Wind Turbine Rotor Blades*, Ramanan Sridaran-Venkat, Michael Stamm

ID862, *Enhanced Aircraft Visual Inspection: Improving Defect Detection with Deflectometry, AI Assistance, and Synthetic Data Augmentation*, Raphaël Viards, Henri Marticou, Jérémy Pirard

SESSIONE SS18

ID127, *Drone-Based Contact NDT for Concrete Structures*, Claudia Thurnherr, Benoît Jordan, Daniel Algernon

ID848, *Multi-Hyperspectral Imagery for Semi-Automatic Decay Identification: the Case Study of the Cavour Canal Historic Water-Bridge*, Alessandra Spadaro, Francesca Matrone, Ramin Rashidi Alavijeh, Andrea Maria Lingua

ID886, *Numerical Integration of Geomatic Surveying and Infrared Thermography for Non-Destructive Documentation of Historic Masonry*, Anna Forte, Francesca Trevisiol, Giulia Fiorini, Gabriele Bitelli

ID920, *Enhancing Aerial Non-destructive Tests with Controlled Sliding for Concrete Inspection*, Simone D'Angelo, Vincenzo Lippiello

SPECIAL SESSION 19

ID217, *The Study of Time-Dependent Effects of Barkhausen Noise Reference Samples*, Suvi Santa-aho, Aki Sorsa, Jari Olavison, Minnamari Vippola

ID494, *Non-Destructive Characterization using Barkhausen Noise to Measure Residual Stresses of Induction Hardened Steel Components*, Jonas Holmberg, Per Lundin, Johan Wendel

ID605, *A Feasibility Study on MBN-Based Stress Evaluation of Cable-Based Bridges*, Kwang-Yeun Park, Joo-Hyung Lee, Changbin Joh, Ji-Young Choi, Imjong Kwahk

ID694, *Influence of Magnetizing Core Materials and Size on the Detection Sensitivity of Grinding Burns using Magnetic Barkhausen Noise*, Mikel Cuenca-Ariza, Ane Martinez-de-Guereñu, Kizkitza Gurruchaga

ID809, *Magnetic Rotational Permeability (MRP) for Mechanical Stress Estimation*, Yves Tene Deffo, Tetsuya Uchimoto, Benjamin Ducharne

ID813, *Non-Destructive Determination of Surface Residual Stresses in Electron Beam Welded AISI 410 Plates using Magnetic Barkhausen Noise Technique*, Hasan İlker Yelbay, Cemil Hakan Gür

SPECIAL SESSION 20

ID137, *Robot Ultrasonic Testing and CAD-Free Adaptive Scanning of Complex-Shape Metallic Parts for Aerospace Applications*, Alexey Bevetskiy, Andrey Bulavinov, Roman Pinchuk, Michael Okulla, Jens Kiehn

ID223, *Mobile Robot for Inspecting the Inside of Composite Profiles*, Abdalla Shahin, Lukas Hartung, Christian Eitzinger

ID361, *Optimized Methodology for Tomographic Reconstruction in X-Ray Inspection Using the CIVA Simulation Platform*, Victor Bussy, Julie Escoda, Anthony Touron, Marius Costin

ID480, *Cognitive Robotic System for Adaptive Non-Destructive Inspection with Laser Thermography*, Bartosz Hyla, Łukasz Ambroziński, Łukasz Pieczonka

ID561, *Deep Learning Method for Defect Detection for Industrial Robot-based Magnetic Particle Inspection*, Kevin Schmitz, Daniel Groß, Florian Römer, Matthias Heinrich, Cemil Emre Ardic, Madalina Rabung, Samuele Martelli

ID838, *Robotic Automation of MPI/FPI Inspections: System Integration, Performance, and AI-Assisted Evaluation*, Miroslav Šnírer, Patrik Backo, Radek Salač

SPECIAL SESSION 21

ID268, *Raw Material Ultrasonic Inspection for Aerospace: Inspection of the "Dead Zone" Using Shear Waves*, Dimitri Olivero, Dario Seni, Lucas Ascenzi

ID327, *Computed Tomographic Inspection in the Aerospace Industry: Guidelines for Standardize the Inspection Process and Image Quality Parameters Study According to Italian Experience*, Francesco Mascolo, Liberata Furente, Sara Guelfo, Stefano Benuzzi

ID376, *High-Resolution Immersion Ultrasonic Testing of Critical Aerospace Parts in MRO Operations*, Iris Buchmeier-Hevroni

ID385, *Practical Implementation of Phased Array Ultrasonic Testing (PAUT) in Automated Disc Inspection Systems*, Michael Bron, Elena Miltreyger

ID490, *Inspections After Blending-out Scratches on Aircraft Fuselage Made of Aluminium Alloy*, Guillaume Ithurralde, Patrick Metayer, Mohamed Sayeh

ID554, *A Comprehensive Framework for Pyroshock Testing of Aerospace Equipment*, Luca Viale, Alessandro Paolo Daga, Alessandro Fasana, Luigi Garibaldi

ID564, *Influence of the Surface Finish of a Metal Bar Related to the Ultrasonic Surface Resolution and the Measurement of its Roughness*, Enzo Di Liddo, Francesco Piazza

ID575, *Eddy Current In-Situ Monitoring for Process and Quality Assessment of Additive Manufacturing (AM) Laser Powder Bed Fusion (L-PBF)*, Arber Caslli, Andrea Gianneo

ID576, *Film Replacement in Radiographic Testing: Case Studies from Aerospace Applications*, Andrea Gianneo

ID649, *Transferring Qualification acc. to EN 4179 / NAS 410 Qualification Standards*, Tomas Zavadil

ID652, *Implementing Annual Proficiency Review acc. to EN 4179 / NAS 410 Qualification Standards*, Tomas Zavadil

ID769, *EN4179:2026 / NAS410 rev.6 Background and Scenario of the New Standard for Aerospace NDT Personnel Qualification and Approval*, Fabrizio Montagnoli

ID784, *Automated Analysis of Ultrasonic Data for Complex CFRP Aerostructures Using Adaptive Segmentation*, Julien Walter, Alexandre Beausoleil, Elhadji Barra Ndiaye, Loïc Séguin-Charbonneau

ID829, *Fused Ultrasonic Tomography Imaging Technique for Gas-Liquid Distribution in Spacecrafts' Tank Based on RAPID and TFM*, Kunyou Jiang, Chengguang Fan, Xiaozhen Zhang, Zongyu Wu, Yong Zhao

ID870, *Aerospace Immersion UT Inspections with Adaptive TFM*, Jeremy Gaumer, Gavin Dao

ID907, *Ensuring NDT Safety in Cryogenic Propulsion: An Analysis of Modern Oxygen Compatibility Standards and Procurement Challenges for Liquid Penetrant Materials*, Domenico Telesca, Liberata Furente, Alessio Franchina

ID953, *Development of Radial NDT Inspection for Electron Beam Runout Welding in Helicopter Components*, Francisco Carrasco, Arnaud Desmis

SPECIAL SESSION SS22

ID216, *Examination of Inlaid Alabaster Craftwork by Using Electromagnetic Waves*, Keisuke Kato, Kaori Fukunaga

ID415, *Analysis and Monitoring of the Covering of Loggia Palace at Brescia - Italy*, Dario Foppoli, Guido Giuliani, Patrizia Scamoni

ID454, *NDT in Art: how NDT Techniques Reveal Hidden Features in Vermeer's Paintings*, David Gilbert

ID461, *Revealing Hidden Structures in the Eastern Wall of Menkaure Pyramid using NDT Techniques*, Mohamed Elkarmoty, Khalid Helal, Polina Pugacheva, Thomas Schumacher, Mehdi Tayoubi, Christian U. Grosse, Hany Helal

ID485, *Preservation of Medieval Churches Damaged by L'Aquila 2009 and Amatrice 2016 Earthquakes: Non-Destructive Techniques in Integrated Approach*, Danilo Ranalli, Claudia Durante, Gianfranco Totani

ID552, *Use GPR Analysis for Diagnostic of Mural Paintings*, Alessia Francesca Napoli, Emanuele Marchetti

ID574, *Methodology for Monitoring Cracking in Historical Wattle-and-daub Ceiling Slabs Using Infrared Thermography*, Gianluca Cadelano, Alessandro Bortolin, Giovanni Ferrarini, Monica Volinia, Mario Girotto

ID607, *Wooden Academic Heritage Preservation by Low-cost Digital Survey and Thermographic Analysis*, Martino Pavignano, Monica Volinia, Gianluca Cadelano, Mario Girotto, Maurizio Marco Bocconcino, Mariapaola Vozzola, Ursula Zich

ID675, *A Multi-scalar NDT Workflow for the Diagnostic Knowledge Project of Stratified Architectural Heritage*, Samuele Troja, Monica Volinia, Mario Girotto

ID714, *Non-Destructive Assessment of Historic Concrete Elements Using GPR and Ultrasonic Tomography: NUK Case Study (Slovenia)*, Zala Žarkovič, Rok Bregar, Petra Šajna, Sabina Dolenec

ID728, *Integration of Non-destructive Methods for Investigating the Conservation State of Fort Monte Antenne in Rome*, Paola Calicchia, Antonio Camassa, Giovanna Spadafora, Giulia Mazzoletti, Dario Foppoli

ID833, *Spreading Non-Destructive Techniques Applied to Cultural Heritage: Initiatives for Schools*, Daniela Di Martino, Giulia Marcucci, Luisa Vigorelli

ID910, *Hierarchical Infrared Thermography Framework for Ancient Timber Structures: from Solar-Induced Screening to Active Tomography*, YInuo Ding, Hai Zhang

ID911, *High-Fidelity 3D Point Cloud Reconstruction of Weathered Stone Inscriptions via Modulated Lock-in Thermography*, YInuo Ding, Hai Zhang

ID912, *A Pseudo-Line-Scanning Reconstruction Framework for Dynamic Infrared Inspection of Large-Scale Timber Structures*, YInuo Ding, Hai Zhang

ID913, *Waveform-Optimized Active Infrared Thermography on a Yuan-Dynasty Stele in Ningbo*, Zhiyang Zhang, Hai Zhang

ID914, *Automatic Defect Detection in Canvas Painting Using Active Infrared Thermography and an Improved YOLOX Network*, Zhiyang Zhang, Hai Zhang

ID952, *Non-destructive Testing to Reveal the History of a 17th-century Building*, Giuliana Cardani, Michele Cerri, Claudia Tiraboschi, Marco Cucchi

SPECIAL SESSION 23: New Trends in Non-Destructive Testing of Automotive Structures

ID112, *Work Safety and Ecological Improvements for Magnetic Particle and Penetrant Testing*, Kersten Alward

ID386, *Advancing Quality Assessment of Adhesive Bonds through Automated Laser-Excited Ultrasonic Inspection*, Tobias Ziegelwanger, Ryan Sommerhuber, Josef Pörnbacher, Balthasar Fischer

ID457, *AI in Ultrasonics Spot Weld Inspections*, Christian Wagner, Jan Koutník

ID628, *Non-Destructive Testing of Resistance Spot Welds by Magnetic Evaluation*, Christian Mathiszik, Johannes Koal, Hans Christian Schmale, Uwe Füssel

ID688, *Ultrasonic Testing of Projection-Welded Foils for Bipolar Plates*, Franz Hielscher, Martin Weber, Johannes Koal, Hans Christian Schmale, Jere Hyvönen, Ari Salmi

ID759, *Torque Evaluation of Automotive Connecting-Rod Bolts Using Piezoelectric Sensors and Contact Acoustic Nonlinearity Methods*, Matteo Febo, Giovanni Erdino, Francesco Ciampa, Davide Palumbo, Umberto Galietti, Maria Cinefra, Simone De Carolis, Leonardo Soria, Maria Michela Dell'Anna, Maria Stella Leone, Francesca Derobertis, Piero Mastrorilli, Mattia Mele, Sebastiano Parisi, Gianmarco Milan, Damiano Rossi, Eugeniu Grabovic, Maurizia Seggiani, Irene Anguillesi, Enrico Ciulli, Massimiliano De Agostinis, Gianluca Di Egidio, Luca Lorenzetti, Carla Martini, Ester D'Accardi

ID787, *Weld Quality Assessment in Ultrasonically Welded Thermoplastic Composites using Infrared Thermographya*, Anshul Sharma, Baris Caglar, Clemens Dransfeld

ID875, *State-of-the-art Ultrasonic Spot Weld Inspection – Manual, Robot-based, and Automated with AI*, York Oberdoerfer, Roman Maev

SPECIAL SESSION 24: Diagnostic for Power Plants

ID486, *Addressing Uncertainties in Material Parameters for Nuclear Weld Imaging by the Development of an Adaptive Algorithm*, Ali Boukham, Jordan Barras, Maxance Marmonier, Nicolas Leymarie

ID540, *Advanced Multivariate Anomaly Detection for Wind Turbines Using SCADA Data and Machine Learning*, Alessandro Paolo Daga, Alessandro Fasana, Luigi Garibaldi, Marco Gerbino, Luca Viale

ID550, *Guidelines for Selecting 2D Matrix PA Probe Configuration for Weld Inspection: a Parametric Study*, Florin Turcu, Benoit Cabirol, Justin Wendorf, Alan Maclean

ID562, *Criticality Criteria for Penstocks in Hydroelectric Power Plants: the Importance of Non-destructive Testing within a Component Evaluation Process*, Marco Lauro, Fabio Bettoni, Francesco Fornari

ID573, *Possibilities of Inspections of NPP Tanks and Containment Liners*, Jaroslav Brom, Roman Nebel, Zbyněk Hlaváč1

ID591, *PAUT Integrated Process for the Examination of Pipe Fitting Transition*, Kevin Xiang, Ludovic Pinier

ID608, *Hybrid Data Fusion in Guided Wave Tomography: Bridging Defect Detection and Life Assessment*, Younho Cho, Igor Sakhabiev

ID657, *Beyond Defect Detection: Integrating NDT with Fracture Mechanics for Life Extension*, Younho Cho

ID684, *Rotor-Bearing Hydrodynamic Modeling for Orbit-Based Diagnostics in Hydropower Units*, Bekhzod Abdullaev, Riccardo Barbera, Alessandro Paolo Daga, Luigi Garibaldi, Damiano Cuvato, Manuel Bonjean, Antonino Sannolo, Lorenzo Artaz

ID699, *Grey-Box Digital Twin of a Pelton Hydropower Unit: Characterisation for Diagnostic Applications*, Riccardo Barbera, Alessandro Paolo Daga, Luigi Garibaldi, Damiano Cuvato, Manuel Bonjean, Antonino Sannolo, Lorenzo Artaz

ID798, *Non-destructive Experimental Fault Diagnosis of Wind Turbine Drivetrain Components Using Tower-base Accelerometers*, Francesco Castellani, Davide Astolfi, Alessandro Canali, Alessandro Paolo Daga, Emiliano Sisinni, Alessandra Flammini