



*ASNT EVENT*

# 15<sup>th</sup> International Symposium on Nondestructive Characterization of Materials

## ONSITE GUIDE

17-19 September 2019

Grand Hotel Bernardin | Portorož, Slovenia

Organized by

The American Society for  
Nondestructive Testing

Hosted by

The Slovenian Society for  
Nondestructive Testing





# ASNT EVENTS

## ASNT Annual Conference

18 - 21 November 2019  
Westgate Resort & Casino  
Las Vegas, NV

## Inspection Conference 2020

21 - 23 January 2020  
Hyatt Regency Houston  
Houston, TX

## ASNT Research Symposium 2020

23 - 26 March 2020  
Williamsburg Lodge  
Williamsburg, VA

## Nondestructive Evaluation of Aerospace Materials & Structures 2020

2 - 3 June 2020  
Hilton St. Louis Frontenac  
Saint Louis, MO

## International Chemical & Petroleum Industry Inspection Technology Conference

17 - 19 June 2020  
Williamsburg Lodge  
Williamsburg, VA



**ASNT...Creating a Safer World!®**

|                      |       |
|----------------------|-------|
| Welcome              | 2     |
| Schedule At A Glance | 3     |
| Technical Program    | 4 -10 |
| Hotel Map            | 12    |
| Academia Council     | 13    |

## 15<sup>th</sup> ISNDCM EXHIBITORS

Academia NDT International

I & T Nardoni Institute

Labtim D00





**Shant Kenderian, Ph.D.**  
ASNT ISNDCM - Chair  
The Aerospace Corporation



**Prof. Janez Grum**  
ASNT ISNDCM - Co-Chair  
University of Ljubljana

## Dear Colleagues

On behalf of my colleague and symposium co-chair, Prof. Janez Grum, and the entire symposium organization committee, I would like to extend our sincere welcome and gratitude for your participation in the 15th International Symposium for Nondestructive Characterization of Materials.

### Historic Event:

It is my distinct pleasure to point out to you the historic significance of the event we are attending this week. The 15th ISNDCM is the FIRST event organized by ASNT on non-US ground and a rare, if not only, event organized by one NDT society on another continent. This is in part due to ASNT fulfilling its role as an International Service Center for the NDT community, among many other factors that made things ripe for an event like this. More important, it emphasizes the global aspects of the worldwide NDT community in the age of technology and information, where geographical boundaries dissolve and lingual barriers overcome. A substantial effort was expended by ASNT and the Slovenian Society for Nondestructive Testing in order to organize such an event, yet maintain the historic character of this symposium. The symposium has traditionally focused on the study of materials properties, where the scientific and engineering community has gathered to consider the science and technology of nondestructive methods for materials characterization. This symposium has its roots with the late Prof. Robert E. Green, Jr. (the Johns Hopkins University) and Prof. Clayton O. Ruud (Pennsylvania State University) starting in 1983. It is held every two years and alternates between the US and other countries across the globe. After a ten year gap following Prof. Green's retirement, CNDE.com organized the event in 2011, 2013, and 2015 before transferring ownership to ASNT in 2017. The organizing efforts of the 2019 symposium, 15th ISNDCM, were set in motion immediately thereafter.

### Portorož:

I am also excited about the technical program that is before us this year in Portorož. Much of the credit goes to the presenting authors who submitted their abstracts, and will later submit their papers for the conference proceedings. I hope you find the program very stimulating to the mind and enjoy the venue provided by the Slovenian Society and amenities by the American Society for Nondestructive Testing. Finally, I would like to welcome you to the paradise of the Adriatic, Portorož (Port of Roses), and wish you the most pleasant time during your stay here.

Shant Kenderian, Ph.D.  
ASNT ISNDCM - Program Chair

Prof. Janez Grum  
ASNT ISNDCM - Program Co-Chair

| Date      | Start     | End Time | Room   | Event                    |
|-----------|-----------|----------|--|--------------------------|
| 16-Sep-19 | 8:00 am   | 5:00 pm  | Pharos   | Academia Council Meeting |
|           | 6:00 pm   | 9:00 pm  | Grand Hotel Bernardin Lobby                        | Welcome Reception        |
| 17-Sep-19 | 7:30 am   | 5:30 pm  | Mediteranea Foyer                                  | Registration             |
|           | 8:00 am   | 8:15 am  | Mediteranea  | Introduction Opening     |
|           | 8:15 am   | 9:00 am  | Mediteranea  | Keynote                  |
|           | 9:15 am   | 5:00 pm  | Mediteranea  | Technical Session I      |
|           | 9:15 am   | 5:00 pm  | Adria  | Technical Session II     |
|           | 12:00 pm  | 1:00 pm  | Grand Restaurant, 10th Floor Grand Hotel Bernardin | Lunch                    |
| 18-Sep-19 | 7:00 am   | 7:45 am  | Pharos   | Speaker Briefing         |
|           | 7:30 am   | 5:30 pm  | Mediteranea Foyer                                  | Registration             |
|           | 8:00 am   | 8:15 am  | Mediteranea  | Introduction Opening     |
|           | 8:15 am   | 9:00 am  | Mediteranea  | Keynote                  |
|           | 9:15 am   | 5:00 pm  | Mediteranea  | Technical Session I      |
|           | 9:15 am   | 5:00 pm  | Adria  | Technical Session II     |
|           | 12:00 pm  | 1:00 pm  | Grand Restaurant, 10th Floor Grand Hotel Bernardin | Lunch                    |
|           | 7:00 pm   | 9:00 pm  | Church Tower Terrace                               | Gala Dinner              |
|           | 19-Sep-19 | 7:00 am  | 7:45 am  | Pharos                   |
| 7:30 am   |           | 3:30 pm  | Mediteranea Foyer                                  | Registration             |
| 8:10 am   |           | 3:30 pm  | Mediteranea  | Technical Session        |
| 12:00 pm  |           | 1:00 pm  | Grand Restaurant, 10th Floor Grand Hotel Bernardin | Lunch                    |



## Tuesday, 17 September

### KEYNOTE ADDRESS

**Assessment of Existing Ageing Infrastructures with Active/ Passive NDT**

8:15 - 9:00 am | **Mediterranea Room**

**Tomoki Shiotani, Kyoto University, Kyoto, Japan**

Tomoki Shiotani is Professor of Department of Civil and Earth Resources Engineering in Kyoto University. After working in general contractor as well as Senior Research Fellow in Delft University of Technology, he joined Kyoto University as an Associate Professor in 2007. In 2014, he became a Professor of the laboratory on innovative technologies for infrastructures in Kyoto University.

His research fields are involved in advanced NDT to assess such infrastructures as road bridges, dam, tunnels and so forth. Fibre optical sensing, elastic wave approaches including acoustic emission (AE) are his principal fields and well known worldwide in AE science for damage index and methodology to quantify damage.

His recent interest covers the life-cycle evaluation of infrastructures with NDT so that he established relevant TC-269IAM, RILEM (France) as chairman. He has published more than 200 reviewed papers and holds more than 40 patents. He has received a lot of awards such as four NDT awards from Structural Faults & Repair Conference, UK, 2008, 2013, 2016 and 2018. He is also medalists of AEWG of USA, Fellow Award in 2013, Joseph Kaiser Achievement Award in 2017 and Gold Medal, highest award of AEWG in 2019.

### Mediterranea Room - Keynote

8:15 - 9:00 am **Assessment of Existing Ageing Infrastructures with Active/ Passive NDT,**  
Tomoki Shiotani, Kyoto University, Kyoto, Japan

### Mediterranea Room - Composites I

**Session Chair:** Dr. Joseph Toby Case, The Aerospace Corporation

|                  |  |
|------------------|--|
| 9:15 - 9:40 am   | <b>Complementary Methods for Assessment of Carbon Fiber Reinforced Composites,</b><br>Adriana Savin, National Institute of Research and Development for Technical Physics, Iasi, Romania |
| 9:40 - 10:05 am  | <b>Experimental Comparison of the Emitter and Receiver Alternatives in Air-Coupled Ultrasonic testing of CFRP plates,</b> Janez Rus, Technical University of Munich, Munchen, Germany    |
| 10:05 - 10:30 am | <b>Evaluation of SiC/SiCf Composites by Multiple Imaging Techniques,</b><br>Feifei Liu, Beijing, China   |

### Adria Room - Thermography

**Session Chair:** Dr. Christopher Kube, Penn State University

|                  |  |
|------------------|--|
| 9:15 - 9:40 am   | <b>Characterization of Commercially Available Infrared Cameras Using Photon Transfer Technique,</b><br>Stefan Breitwieser, University of Applied Sciences Upper Austria, Wels, Austria |
| 9:40 - 10:05 am  | <b>3D Thermographic Reconstruction of Defects in Composite Materials,</b><br>Gregor Thummerer, University of Applied Sciences Upper Austria, Wels, Austria                             |
| 10:05 - 10:30 am | <b>Thermographic Testing of Abraded Silver Coated Teflon™ Tape,</b><br>Eric Johnson, The Aerospace Corporation, Los Angeles, CA, USA   |

### Mediterranea Room - Composites II

**Session Chair:** Dr. Joseph Toby Case, The Aerospace Corporation

|                  |   |
|------------------|---|
| 10:45 - 11:10 am | <b>Application of Acoustic Emission for Monitoring Fatigue Damage In CFRP-CFRP Adhesive Bonded Joints</b><br>Michele Carboni, Politecnico di Milano, Milan, Italy       |
| 11:10 - 11:35 am | <b>Non-contact NDT of Complex Composites and Biocomposites with an Air-coupled Optical microphone,</b> Wolfgang Rohringer, XARION Laser Acoustics GmbH, Vienna, Austria |
| 11:35 - 12:00 pm | <b>Active &amp; Passive Ultrasonics Characterization for PAIN Applications,</b> B. Boro Djordjevic Mast, Inc., John Duke, Virginia Tech University, Blacksburg, VA, USA |

### Adria Room - Magnetic Methods

**Session Chair:** Dr. Eric Johnson, The Aerospace Corporation

|                  |   |
|------------------|---|
| 10:45 - 11:10 am | <b>Integrated Approach to Non-Destructive Monitoring and Anti-Icing Actions of Compositional Structures of Unmanned Aircraft,</b> Mykhailo Kazakevych, Ukrainian Society of Nondestructive Testing, Kiev, Ukraine |
| 11:10 - 11:35 am | <b>3D Magnetic Imaging of Ferromagnetic Steels Based on Magneto-resistive Sensors,</b><br>Natalia Sergeeva-Chollet, CEA, Gif-sur-Yvette, France   |
| 11:35 - 12:00 pm | <b>Characterization of Structure of Steel Plates Using Acoustic Barkhausen Noise,</b><br>Gabor Por, University of Dunaujvaros, Dunaujvaros, Hungary   |

### Mediterranea Room - Radiography

**Session Chair:** Mr. Uwe Ewert, Academia International

|                |   |
|----------------|---|
| 1:00 - 1:25 pm | <b>X-ray Back Scatter Technique for Inspection in Additive Manufacturing,</b><br>Uwe Zscherpel, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany |
| 1:25 - 1:50 pm | <b>Open Configuration Portable X-ray Computed Tomography,</b><br>Joseph Case, The Aerospace Corporation, El Segundo, CA, USA  |
| 1:50 - 2:15 pm | <b>Combined Laser-based Dimensional Scanner and Digital Radiography for In-line Sintered Parts NDT Control,</b><br>Mihai Iovea, Accent Pro 2000 srl, Magurele, Romania  |
| 2:15 - 2:40 pm | TBA   |

### Adria Room - Pipeline Inspection

**Session Chair:** Dr. Bernhard Tittmann of Pennsylvania State University

|                |  |
|----------------|--|
| 1:00 - 1:25 pm | <b>Multimodal and Multifrequency EMAT based Guided Lamb Waves for Nondestructive Thickness Estimation in Pipelines,</b> Roberto Gil-Pita, University of Alcalá, Alcalá de Henares, Madrid, Spain         |
| 1:25 - 1:50 pm | <b>Characteristics and Source Location of AE Waves Detected during Leakage from Gas Pipe with Slit-shaped Artificial Defect,</b> Kenichi Yoshida, Tokushima Bunri University, Sanuki City, Kagawa, Japan |
| 1:50 - 2:15 pm | <b>Acoustic Assessment of The Internal Stress and Mechanical Properties of Gas Pipelines</b><br>Lyudmila Volkova, Kalashnikov Izhevsk State Technical University, Izhevsk, Russia                        |
| 2:15 - 2:40 pm | <b>Nondestructive Corrosion Inspection for Seawater Pipelines by Digital X-ray Technology</b><br>Bin Liu, Beijing University of Technology, Beijing, China   |



## Mediterranea Room - Academia NDT International

Session Chair: Dr. Shant Kenderian, The Aerospace Corporation

|                |   |
|----------------|---|
| 2:55 - 3:20 pm | <b>The String Model A New Interpretation Of The Metallic Structure And Its Connected Physical Phenomena</b> , Giuseppe Nardoni, Academia NDT International, Brescia, Italy    |
| 3:20 - 3:45 pm | <b>Prediction of the Visibility of Indications in X-Ray Computed Tomography by the Contrast Detail Diagram</b> , Uwe Ewert, Academia NDT International, Teltow, Germany       |
| 3:45 - 4:10 pm | <b>Round Robin Tests for Slit/Hole Differentiation using Nonlinear Time Reversal Ultrasonic Signal Processing</b> , Serge Dos Santos, INSA Centre Val de Loire, Blois, France |
| 4:10 - 4:35 pm | <b>Industry 4.0 - Overall Significance and Implications to NDT 4.0 in Germany</b> , Rainer Link, Kerpen, Germany  |
| 4:35 - 5:00 pm | <b>Acoustic Emission During Compression Tests of Ti-Mo-Si Alloys Used for Medical Prostheses</b> , Zdenek Prevorsek, Institute of Thermomechanics, Czech Republic             |

## Adria Room - Acoustic Emission

Session Chair: Dr. Eric Johnson, The Aerospace Corporation

|                |   |
|----------------|---|
| 2:55 - 3:20 pm | <b>On the Use of Acoustic Emission for Detecting Quenching Bath Property Deviations</b> , Bor Mojskerc, Faculty of Mechanical Engineering, Ljubljana, Slovenia  |
| 3:20 - 3:45 pm | <b>Investigation of The Failure of Oxide Coatings on Aluminum Alloy Using the Method of Acoustic Emission</b> , Fengyuan Bao, Komsomolsk-na-Amure State University, Komsomolsk-na-Amure, Russia         |
| 3:45 - 4:10 pm | <b>Detection of Material Structure Changes by Continuous Acoustic Emission Monitoring</b> , Milan Chlada, Institute of Thermomechanics of the Czech Academy of Sciences, Prague, Czech Republic         |
| 4:10 - 4:35 pm | <b>Registration of Acoustic Emission Waves in an Isotropic Plate Using Fiber-Optic and Piezoelectric Sensors</b> , Khun Han Htoo Aung, Komsomolsk-na-Amure State University, Komsomolsk-on-Amur, Russia |
| 4:35 - 5:00 pm | TBA   |



## Wednesday, 18 September

### KEYNOTE ADDRESS

*The Innovative Solutions for Non-Invasive Evaluation of the Fine Art and the Cultural Heritage Objects and for Forgery Detection via Unique Patterns Matching*

8:15 - 9:00 am | **Mediterranea Room**

**Roman Maev, University of Windsor, Windsor, Canada**

Roman Maev a physicist and the founding Director of the Institute for Diagnostic Imaging Research in Windsor, Ontario, Canada. He is the University of Windsor's Distinguished Professor of the Department of Physics and one of Canada's pre-eminent solid state physicists and educators.

Maev has won awards for his innovations, research discoveries, and inventions. In Recognition of his contribution to the development of the ultrasound technique, he was awarded the Pioneer Award by the American Institute of Ultrasound in Medicine in 1988. In 1989, he was awarded the Centenary Ernst Abbe Medal from the World Microscopical Society. In 2007, he received the Canadian Association of Physicists Gold Medal for Outstanding Achievement in Industrial and Applied Physics, the Ontario Premier's Catalyst Award for the Start Up Company with the Best Innovation, and was awarded the Canadian Association of Physicists Medal for Outstanding Achievement in Industrial and Applied Physics. In 2009, he was elected as an IEEE Fellow and in 2010 he was elected as a Full Member of the Russian A. M. Prokhorov Academy of Engineering Sciences.

Maev has helped establish three Research Centres and one Research Institute. He has created four spin-off companies.

### Keynote - Mediterranea Room

|                |   |
|----------------|---|
| 8:15 - 9:00 am | <b>The Innovative Solutions for Non-Invasive Evaluation of the Fine Art and the Cultural Heritage Objects and for Forgery Detection via Unique Patterns Matching</b> , Roman Maev, University of Windsor, Windsor, Canada |
|----------------|---|

### Mediterranea Room - Structural Health Monitoring

Session Chair: Dr. Eric Johnson, The Aerospace Corporation

|                  |  |
|------------------|--|
| 9:15 - 9:40 am   | <b>A Damage Science Based Monitoring Approach for Detecting End-of-Functional Service Life</b> , John Duke, Virginia Tech University, Blacksburg, VA, USA  |
| 9:40 - 10:05 am  | <b>The Application of Coercive Force Measurements Technique for Structural Health Monitoring Using Surface Type Probe</b> , Valentyn Uchanin, Karpenko Physico Mechanical Institute of the National Academy of Sciences, Lviv, Ukraine |
| 10:05 - 10:30 am | <b>Frequency Analysis of Mechanical Waves Passing Through Cement Composites During the Early Hydration Phase</b> , Libor Topolar, Brno University of Technology, Brno, Czech Republic  |

### Adria Room - Ultrasound I

Session Chair: Dr. Roman Maev, University of Windsor

|                  |   |
|------------------|---|
| 9:15 - 9:40 am   | <b>The Non-Destructive Method of Elasticity Modulus Measurement of Valve Seats from STELLITE with Various Cryogenic Stays</b> , Jakub Mraz, Technical University of Liberec, Liberec, Czech Republic                          |
| 9:40 - 10:05 am  | <b>Identification of a Crack Using Frequency-Dependent Directivity of Ultrasonic Waves</b> , Kazuki Mura, Keio University, Department of Mechanical Engineering, Faculty of Science and Technology, Yokohama, Kanagawa, Japan |
| 10:05 - 10:30 am | <b>Continuous Wave Ultrasound Nondestructive Testing</b> , Krassimir Stoev, Canadian Nuclear Laboratories, Chalk River, ON, Canada  |

## Mediterranea Room - Ultrasound II

Session Chair: Dr. Roman Maev, University of Windsor

|                  |  |
|------------------|--|
| 10:45 - 11:10 am | <b>Simultaneous Real-Time X-Ray and Ultrasonic Monitoring of Laser Generated Melt Pools, Keyholing, Porosity Formation, And Solidification Cracking in Al-6061</b> , Christopher Kube, The Pennsylvania State University, University Park, PA, USA |
| 11:10 - 11:35 am | <b>Spatially Resolved Acoustic Spectroscopy for Crystallographic Texture Assessment in Additive Manufacturing</b> , Paul Dryburgh, University of Nottingham, Nottingham, UK  |
| 11:35 - 12:00 pm | <b>Non-destructive Material Microstructure Analysis During Heat Treatment - a Building Block for Industry 4.0</b> , Heinrich Klumper-Westkamp, Leibniz Institut For Werstofforientierte Technologien IWT Bremen, Bremen, Germany                   |

## Adria Room - Process Control

Session Chair: Dr. John Duke, Virginia Tech University

|                  |   |
|------------------|---|
| 10:45 - 11:10 am | <b>Material Property Mapping using Ultrasonic Phased Arrays Structures of Unmanned Aircraft</b> , Katy Tant, University of Strathclyde, Glasgow, UK |
| 11:10 - 11:35 am | <b>Ultrasonic Inspection Using Multi-axis Accelerometer</b> , Yoshihiro Mizutani, Tokyo Institute of Technology, Meguro-ku, Japan                   |
| 11:35 - 12:00 pm | <b>Developments and Results with Scanning Acoustic Microscope</b> , Peter Szabo, University of Dunaujvaros, Dunaujvaros, Dunaujvaros, Hungary       |

## Mediterranea Room - Guided Waves

Session Chair: Dr. Roman Maev, University of Windsor

|                |   |
|----------------|---|
| 1:00 - 1:25 pm | <b>Ultrasonic Testing Residual Stresses and Structure of the Rails in the Area of the Welded Joint</b> , Lyudmila Volkova, Kalashnikov Izhevsk State Technical University, Izhevsk, Russia      |
| 1:25 - 1:50 pm | <b>A Study on The Applicability of Ultrasonic Guided Waves for Monitoring Damage Development in The Foot of In-Service Railway Rails</b> , Michele Carboni, Politecnico di Milano, Milan, Italy |
| 1:50 - 2:15 pm | <b>Considering Anisotropy in Guided Wave Tomography for Composite Laminates</b> , Madis Ratassepp, Tallinn University of Technology, Tallinn, Estonia   |
| 2:15 - 2:40 pm | <b>Transient Amplitude Analysis of Lamb Wave Mode Generated by EMATs</b> , Kenji Kitamura, Keio University, Mechanical engineering, Yokohama, Kanagawa, Japan                                   |

## Adria Room - Eddy Current

Session Chair: Dr. Christopher Kube, Penn State University

|                |   |
|----------------|---|
| 1:00 - 1:25 pm | <b>Characterization of Ceramic Composites by High Frequency Eddy Current Techniques</b> , Henning Heuer, Fraunhofer IKTS Dresden Technische Universität, Dresden, Germany   |
| 1:25 - 1:50 pm | <b>The Optimal Surrogate Synthesis of Circular Surface Eddy Current Probes with a Uniform Sensitivity in the Testing Zone</b> , Ruslana Trembovetska, Cherkasy State Technological University, Cherkasy, Ukraine                                  |
| 1:50 - 2:15 pm | <b>Evaluation of The Influence of The Phase Precipitates on The Signals of Pulsed Parasite Currents - PEC in Super-duplex SAF 2507 Steels Submitted to Thermal Treatments</b> , Joao Queiroz, Institute Federal of Bahia, Salvador, Bahia, Brazil |
| 2:15 - 2:40 pm | TBA   |

## Mediterranea Room - Weld Inspection

Session Chair: Mr. Uwe Ewert, Academia International

|                |   |
|----------------|---|
| 2:55 - 3:20 pm | <b>A Case Study on Ultrasonic Characterization of an Austenitic Weld - Is 'In Situ' Feasible?</b> , Michal Kalkowski, EDF R&D, Moret sur Loing, France  |
| 3:20 - 3:45 pm | <b>Ultrasonic Testing of Emerging Joining Methods in Automobile Industry Contrast Detail Diagram</b> , York Oberdoerfer, Tesonics Europe GmbH, Frechen, Germany   |
| 3:45 - 4:10 pm | <b>Industry-Academia Collaboration: Industrial Implementation of Newly Developed Ultrasonic Inspection System for Resistance Spot Welding</b> , Andriy Chertov, The Institute for Diagnostic Imaging Research, University of Windsor, Windsor, Canada |
| 4:10 - 4:35 pm | <b>NDE of Friction Stir Welds</b> , Bernhard Tittmann, Pennsylvania State University, San Gabriel, CA, USA  |

## Adria Room - Nonconventional Methods

Session Chair: Dr. Shant Kenderian, The Aerospace Corporation

|                |   |
|----------------|---|
| 2:55 - 3:20 pm | <b>Improvement of Safety of Nuclear Power Plants Equipment's by Using the Project Of "Cracks Under Control"</b> , Ayman Abu Ghazal, National Research Nuclear University Moscow Engineering Physics Institute, Moscow, Russia |
| 3:20 - 3:45 pm | <b>Passive NDT Using Cosmic-ray Muons, Method of Acoustic Emission</b> , David Mahon, Lynkeos Technology Limited, Glasgow, UK   |
| 3:45 - 4:10 pm | <b>Modal Analysis Via Impact-Echo on Concrete Reinforced Slab</b> , Richard Dvorak, Brno University of Technology, Brno, Czech Republic   |
| 4:10 - 4:35 pm | <b>Nondestructive Estimation of Longitudinal Elastic Modulus for Synthetic Fiber Rope, piezoelectric sensors</b> , Yu Arai, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan  |

## Thursday, 19 September

## Mediterranea Room - Concrete Structures

Session Chair: Prof. Janez Grum, University of Ljubljana

|                |  |
|----------------|--|
| 8:10 - 8:35 am | <b>Acoustic Emission Supported Monitoring of Fire Spalling of UHPFRC</b> , Aljosa Sajna, Slovenian Building and Civil Engineering Institute, Ljubljana, Slovenia   |
| 8:35 - 9:00 am | <b>Intensity Analysis Method on Acoustic Emission Signals to Manage Damage in Real Scale Prestressed Concrete Beam</b> , Luigi Calabrese, University of Messina, Messina, Messina, Italy                           |
| 9:00 - 9:25 am | <b>DIC-Based Modal Analysis for Stiffness Assessment of Cement Pastes Containing Finely-Ground Recycled Concrete During Hardening</b> , Radim Hluzek, Czech Technical University in Prague, Prague, Czech Republic |
| 9:25 - 9:50 am | <b>Non-contact Shrinkage Measurement on Pastes Containing Finely Ground Recycled Concrete</b> , Vaclav Nezerka, Czech Technical University in Prague, Prague, Czech Republic                                       |



## Mediterranea Room - Materials Characterization

Session Chair: Dr. John Duke, Virginia Tech University

|                  |  |
|------------------|--|
| 10:05 - 10:30 am | <b>Non-linear Spectroscopy Measurement on Thermally Damaged Concrete, Prestressed Concrete Beam</b> , Jan Patera, Research Centre Rez, Plzen, Czech Republic   |
| 10:30 - 10:55 am | <b>Acoustic Emission Signal Analysis of Steam Piping Materials under Creep Damage Conditions, Finely-Ground Recycled Concrete During Hardening</b> , Frantisek Vlasic, Brno University of Technology, Brno, Czech Republic |
| 10:55 - 11:20 am | <b>Phase Transitions in Polycrystalline Doped Zirconia Complex Oxides Induced by Thermal Treatment</b> , Adriana Savin, National Institute of Research and Development for Technical Physics, Iasi, Romania                |
| 11:20 - 11:45 am | <b>Visible Reflectance Spectroscopy for the Characterization of Glass in Historic Objects</b> , Christina Bisulca, Detroit Institute of Arts, Detroit, MI, USA   |
| 11:45 - 12:10 pm | <b>About the Possibility of Magnetoacoustic Spectroscopy of Ferromagnetic Materials</b> , Evgeny Serbin, Institute of Metal Physics, Yekaterinburg, Russia   |

## Mediterranea Room - Electromagnetic Methods

Session Chair: Dr. Joseph Toby Case, The Aerospace Corporation

|                |   |
|----------------|---|
| 1:10 - 1:35 pm | <b>Implementation and Calibration of Nondestructive Determination of Mechanical Properties of Open-Die Forgings by 3MA-Technique</b> , Michaela Ewen, Saarschmiede GmbH Freiformschmiede, Volklingen, Germany |
| 1:35 - 2:00 pm | <b>Fully Blind Characterization of a Thin Dielectric Layer Beyond <math>\lambda/100</math> By Means of The Transient Radar Method</b> , Ali Pourkazemi, VUB, Brussels, Belgium                                |
| 2:00 - 2:25 pm | <b>Asset Integrity of Gas Storage Sphere Legs Using Advanced Technologies</b> , Ankit Vajpayee, Russell NDE Systems Inc, Edmonton, AB, Canada   |
| 2:25 - 2:50 pm | <b>In-Line Measurement of Mechanical Properties of Steel Sheets by Electromagnetic Method</b> , Hirohisa Yamada, Nippon Steel Corporation, Futtsu-Shi, Chiba, Japan   |
| 2:50 - 3:15 pm | <b>The High Voltages Spark Testing Method for NDE of Thin Dielectric Coatings on Metal Products</b> , Dr. Vladimir Syasko, Constanta Ltd., St. Petersburg, Russia   |

## MORE RNDE! NOW BI-MONTHLY

Recognized. Referenced. Respected.  
Be the first to know when breakthroughs are published

**Research in Nondestructive Evaluation (RNDE)** is the journal that the NDE community reads to learn about the latest experimental and theoretical investigations dealing with the scientific and engineering basis of NDE, its measurement, methodology, and a wide range of applications of materials and structures.

Research in  
Nondestructive  
Evaluation



**Subscribe to RNDE today.**

- Print subscription \$85\*
  - Online subscription in PDF \$85
  - Both print and online subscriptions \$105 Best Value!
- \*Add \$111 for overseas airmail delivery if desired.

Subscribe at [www.rnde.org](http://www.rnde.org) or call (800) 222-2768



ASNT...Creating a Safer World!

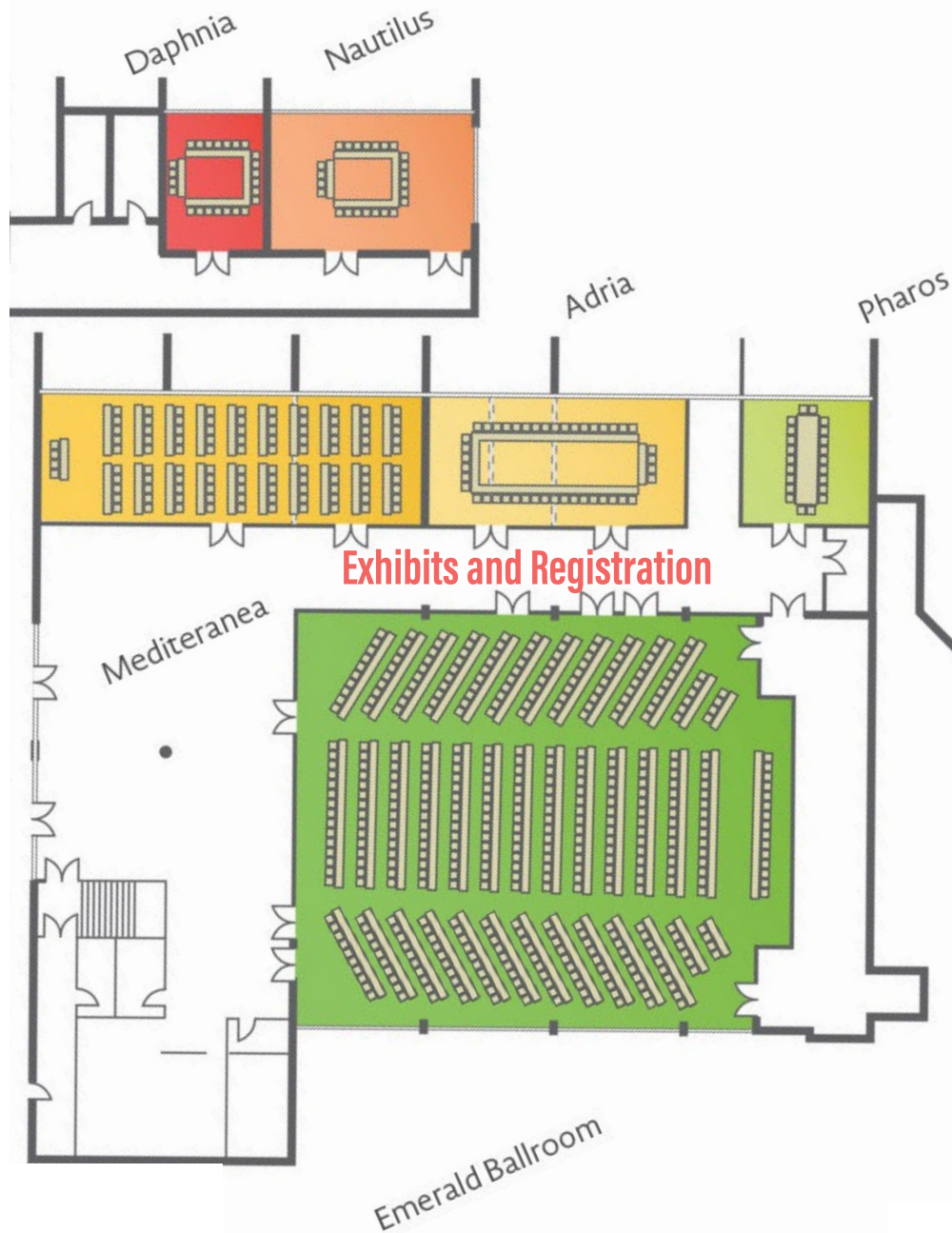
# RESEARCH SYMPOSIUM

## CFA Now Open

23 – 26, March 2020  
Williamsburg Lodge | Williamsburg, VA



## Hotel Histrion



## Academia NDT International Council Members

|                        |                   |
|------------------------|-------------------|
| Giuseppe Nardoni       | President         |
| Prof. Vjera Krstelj    | Vice President    |
| Dr. Rainer Link        | (Honorary Member) |
| Dr. Shant Kenderian    | Vice President    |
| Dr. Serge Dos Santos   | General Secretary |
| Prof. Uwe Ewert        | Council Member    |
| Prof. Peter Trampus    | Council Member    |
| Mr. David Gilbert      | Council Member    |
| Dr. Zdenek Prevorovsky | Council Member    |
| Dr. M. Kazakevich      | Council Member    |

## Program Committee

- Walter Arnold, University Saarland, Germany
- Dr. Mourad Bentahar, Université du Maine, France
- Dr. Donatella Cerniglia, University of Palermo, Italy
- Dr. Boro Djordjevic, MAST, USA
- Dr. Jack Duke, Virginia Tech, USA
- Dr. Janez Grum (Chair), University of Ljubljana, Slovenia
- Dr. Tomaž Kek, University of Ljubljana, Slovenia
- Dr. Shant Kenderian (Chair), Aerospace Corporation, USA
- Dr. Christopher Kube, USA
- Dr. Cara Leckey, NASA Langley Research Center, USA
- Dr. Roman Maev, University of Windsor, Canada
- Dr. Shyamsunder Mandayam, GE Global Research, India
- Dr. David Moore, Sandia National Laboratories, USA
- Dr. Paul Panetta, Applied Research Associates, USA
- Dr. Anish Poudel, Transportation Technology Center, USA
- Dr. William Prosser, NASA Langley Research Center, USA
- Dr. Igor Solodov, University of Stuttgart, Germany
- Dr. Bernard Tittmann, Pennsylvania State University, USA
- Dr. Reza Zoughi, Missouri University of Science and Technology, USA





ASNT EVENT

# ASNT ANNUAL CONFERENCE

Where the NDT World Comes Together



## Registration Now Open

November 18 – 21, 2019

Westgate Resort & Casino | Las Vegas, NV



ASNT...Creating a Safer World!®