

# 6<sup>th</sup> International Virtual Conference of Engineering Against Failure



Conference Chairmen

Prof. Spiros Pantelakis, Prof. George Lampeas, Assoc. Prof. Konstantinos Tserpes

Laboratory of Technology and Strength of Material (LTSM), University of Patras, Greece

Under the auspices of





# Final Conference Program

WEDNESDAY, June 23, 2021

(All Conference times are CET)

09:00 am-09:15 am	<b>Opening Ceremony – Welcome by the Chairmen of the Conference</b>			
09:15 am-09:45 am	<b>Keynote Lecture: Prof. Ehrenfried Zschech, Fraunhofer Institute for Ceramic Technologies and Systems IKTS</b> 3D imaging of cracks in composites and microchips using high-resolution XCT			
09:45 am-10:15 am	<b>Keynote Lecture: Dr. Natalia Konchakova, Helmholtz-Zentrum Hereon</b> Modelling Supported Design of New Active Protective Coatings			
10:15 am-10:30 am	<b>Coffee Break</b>			
10:30 am-12:30 pm	<u><b>SESSION 1</b></u>  <b>Workshop on Non-Destructive Testing and Structural Health Monitoring for prevention of failure</b>  <b>Chairperson: Prof. Elena Jasiuniene, Kaunas University of Technology</b>	<u><b>SESSION 2</b></u>  <b>Crack propagation in materials and crack-stop engineering</b>  <b>Chairperson: Prof. Ehrenfried Zschech, Fraunhofer Institute for Ceramic Technologies and Systems IKTS</b>	<u><b>SESSION 3</b></u>  <b>Theoretical and experimental approaches for the robust design of materials and components</b>  <b>Chairperson: Prof. Vincenzo Tucci, University of Salerno</b>	<u><b>SESSION 4</b></u>  <b>Materials Surface Processing for Engineering applications</b>  <b>Chairpersons: Prof. Dimitris Mataras – Prof. Costas Galiotis, University of Patras</b>
10:30 am-10:50 am	Air-coupled ultrasonic measurement of in-plane elastic properties of a non-uniform MICA paper  <b>Justina Sestoke, 1, Reimondas Sliteris ,1</b>  1 Prof. Kazimieras Barsauskas Ultrasound Institute	Crack propagation in metal-ceramic and metal-metal nanolaminates  <b>Jon Molina-Aldareguia, 1,</b>  1 Imdea Materials Institute  <b>INVITED TALK</b>	Putting Stiffness where it's needed: Optimizing the Mechanical Response of Multi-Material Structures  <b>Arouna Patouossa Mouchili, 1, Stefan Bosse ,1, Dirk Lehmkus, 2, Adrian Struss, 2,</b>  1 University of Bremen 2 Fraunhofer IFAM	Record Terahertz shielding behavior of lightweight CVD graphene nanolaminates  <b>Christos Pavlou, 1,2, Maria Giovanna Pastore Carbone ,1, Anastasios Manikas, 2, George Trakakis, 1, Can Koral ,3, Gianpaolo Papari, 4, Antonello Andreone ,3,4, Costas Galiotis ,1,2,</b>  1 FORTH ICE-HT 2 Department of Chemical

				Engineering, University of Patras 3 INFN Naples Unit 4 Department of Physics, University of Naples "Federico II"
10:50 am- 11:10 am	Influence of cutting parameters on surface integrity in BTA deep hole drilling of steel components  <b>Simon Strodict</b> , 1, Robert Schmidt ,2, Andreas Zabel, 2, Dirk Biermann, 2, Frank Walther ,1,  1 Department of Materials Test Engineering (WPT), TU Dortmund University 2 Institute of Machining Technology (ISF), TU Dortmund University	Multifunctional Ceramic/Graphene Thick Coatings for New Emerging Applications  <b>Katalin Balázsi</b> , 1, Zhongquan Liao, 2, Jan Dusza, 3, Ehrenfried Zschech, 2, Csaba Balázsi ,1,  1 Centre For Energy Research, ELKH, Hungary 2 Fraunhofer Institute for Ceramic Technologies and Systems IKTS 3 Institute of Materials Research, Slovak Academy of Sciences	Probabilistic strength assessment through analytical modeling of pillars found in ship structures  <b>Angelos Vasileiou</b> , 1, Konstantinos Anyfantis ,1,  1 National Technical University of Athens	Production and applications of superlubric graphene coatings  <b>George Paterakis</b> , 1,2, Charalampos Androulidakis ,1,2, Emmanuel Koukaras, 3, George Trakakis, 2, George Anagnostopoulos2, Costas Galiotis, 1,2,  1 Department of Chemical Engineering, University of Patras 2 Institute of Chemical Engineering Sciences, Foundation of Research and Technology-Hellas (FORTH/ICE-HT) 3 Laboratory of Quantum and Computational Chemistry, Department of Chemistry, Aristotle University of Thessaloniki
11:10 am- 11:30 am	Integration and evaluation of a meander-shaped fiber-optical sensor in a GFRP leaf spring  <b>Andreas Preisler</b> , 1, Friedrich Wolf-Monheim ,2, Rainer Souschek, 2, Dominik Kaiser, 3, Ralph Wojtczyk ,4, Athanasios Dafnis, 1, Kai-Uwe Schröder ,1, Wolfgang David ,2, Paul Zandbergen ,2  1 RWTH Aachen University, Institute of Structural Mechanics and Lightweight Design 2 Ford Research & Innovation Center Aachen 3 SGL Composites GmbH	Phase-Field Modeling of Fracture in Cr-Al <sub>2</sub> O <sub>3</sub> Metal-Ceramic Composites with Experimental Verification  <b>Hossein Darban</b> , 1, Kamil Bochenek ,1, Witold Węglewski, 1, Michał Basista, 1,  1 Institute of Fundamental Technological Research (IPPT), Polish Academy of Sciences	A design tool for the tuning of carbon-based nanocomposites material properties  P. Lamberti,1, <b>L. Melillo</b> ,1, A. Kukhta,2, V. Tucci,1, and V. Georgiev,3  1 University of Salerno 2 Belarusian State University 3 NanoTech Lab Ltd	Enhancement of damping response in polymers and composites by the addition of graphene nanoplatelets  <b>Panagiotis Nektarios Pappas</b> , 1, Christos Katsiropoulos ,1,2, Nikolaos Koutroumanis, 1, Anastasios Kokkinos, 3, Costas Galiotis ,2,  1 Foundation for Research and Technology Hellas, Institute of Chemical Engineering and High Temperature Chemical Processes, University of Patras, Greece 2 Department of Chemical Engineering, University of Patras, Greece

	4 SGL Technologies GmbH			3 Department of Ethnomusicology, Ionian University, Greece
11:30 am-11:50 am	Percolation Threshold Sensors for reducing complexity in Structural Health Monitoring (SHM) of engineering structures  <b>Helge Pfeiffer</b> , 1, Sevilia Sunetchieva ,1, Martine Wevers, 1,  1 Ku Leuven	Diffusion phenomena at the interface zone of A1050/Ni201 explosively welded clads leading to disintegration of the weld  Izabella Kwiecien, 1, <b>Joanna Wojewoda-Budka</b> ,1,  1 Institute of Metallurgy and Materials Science Polish Academy Of Sciences  <b>INVITED TALK</b>	Robust design of multilayer RF devices based on graphene  M. La Mura, 1, <b>P. Lamberti</b> ,1, V. Tucci, 1, and P. Kuzhir, 2  1 University of Salerno 2 University of Eastern Finland	Plasma enhanced chemical vapor deposition of hydrophobic, hydrophilic and amphiphilic coatings  Ergina Farsari, 1, Eleni Anna Kostopoulou ,1, Vasiliki Eleftheria Vrakatseli, 1, <b>Eleftherios Amanatides</b> , 1, Dimitrios Mataras ,1,  1 University Of Patras
11:50 am-12:10 pm	Model-Based Structural Health Monitoring of Box Girders  <b>Nicholas Silionis</b> , 1, Konstantinos Anyfantis ,1,  1 School of Naval Architecture and Marine Engineering, National Technical University of Athens	A customized electrical potential difference method for in situ monitoring of propagating cracks using a stochastic algorithm  <b>E Skrinis</b> , 1, Christos Kalligeros ,1, Antonios Tsolakis, 2, Vasilios Spitas, 1,  1 School of Mechanical Engineering, National Technical University of Athens 2 Department of Mechanical Engineering, School of Engineering, University of West Attica	Electromechanical performances variability of Capacitive Micromachine Ultrasonic Transducers (CMUTs) by FEM modeling.  <b>M.La Mura</b> , 1, P. Lamberti,1 , A. S. Savoia, 2,  1 University of Salerno 2 Roma Tre University	Plasma Enhanced Chemical Vapor Deposition of SiOx-like thin films for corrosion protection of light metals  <b>Eleftherios Amanatides</b> , 1, Charalampos Voulgaris ,1, Dimitrios Mataras, 1,  1 University of Patras
12:10 pm-12:30 pm	Comparison of immersion and air-coupled ultrasonic testing techniques for evaluation of quality of the adhesively bonded joints  <b>Aadhik Asokkumar</b> ,1, Bengisu Yilmaz ,1, Elena Jasiūnienė, 1,2, Rymantas Jonas Kažys, 1,  1 Prof. K. Baršauskas Ultrasound	In-situ examinations of nano- and microscale fatigue and fracture in device-relevant materials  Douglas Stauffer, 1, Eric Hintsala ,1, Sanjit Bhowmick, 1, Syed Asif, 2, <b>Oden Warren</b> ,1,  1 Bruker Corporation 2 Industron Nanotechnology Pvt Ltd	Design criteria of Strain sensors made of Self-Sensing Nanocomposites for Structural Applications  L.Guadagno, 1, <b>P. Lamberti</b> , 2, V. Tucci ,2, and L.Vertuccio, 1  1 Dept. of Industrial Engineering University of Salerno 2 Dept. of Information and Electrical	Plasma processing of metal surfaces: approaches for enhanced corrosion protection  Antonella Milella, 1, <b>Fabio Palumbo</b> ,2, Francesco Fracassi, 1,  1 University Of Bari Aldo Moro 2 CNR-NANOTEC

	Research Institute, Kaunas University of Technology 2 Department of Electronics Engineering, Kaunas University of Technology	<b>INVITED TALK</b>	Engineering and Applied Mathematics University of Salerno	
12:30 pm- 13:30 pm	<b>LUNCH</b>			
13:30 pm- 15:30 pm	<p><b><u>SESSION 5</u></b></p> <p><b>Workshop on Non-Destructive Testing and Structural Health Monitoring for prevention of failure</b></p> <p><b>Chairperson: Prof. Elena Jasiuniene, Kaunas University of Technology</b></p> <p><b>CONTINUED</b></p>	<p><b><u>SESSION 6</u></b></p> <p><b>Mini Workshop on Experimental studies on the relation between microstructure and mechanical fracture processes</b></p> <p><b>Chairperson: Dr. George Pantazopoulos, ELKEME Research and Development Center</b></p>	<p><b><u>SESSION 7</u></b></p> <p><b>Mini Workshop on Design of Self-responsive Thermosetting Resins for application in Aeronautics</b></p> <p><b>Chairpersons: Prof. Liberata Guadagno - Prof. Roberto Pantani, University of Salerno</b></p>	<p><b><u>SESSION 8</u></b></p> <p><b>Engineering applications in orthopaedic surgery</b></p> <p><b>Chairpersons: Prof. Andreas Panagopoulos – Dr. Irini Tatani, University of Patras</b></p>
13:30 pm- 13:50 pm	<p>Temper embrittlement of 9%Ni low carbon steel and non-destructive inspection by magnetic Barkhausen noise</p> <p><b>Sérgio Souto Maior Tavares, 1,2, Juan Manuel Pardal ,1,2, Fernanda Freitas Neves, 2, Hugo Ribeiro da Igreja, 1, Odivaldo Cambraia Alves ,1, Leosdan Figueredo Noris, 1,</b></p> <p>1 Universidade Federal Fluminense - UFF 2 Centro Federal de Educação Tecnológica - CEFET/RJ</p>	<p>Examination of Fracture Mechanisms in two Al – Ti – V – Cr – (Si) High Entropy Alloys</p> <p><b>Spyridon Chaskis, 1, Dimitrios Kiousis ,1, Paul Stavroulakis, 2, Russell Goodall, 2, Spyros Papaefthymiou ,1,</b></p> <p>1 Laboratory of Physical Metallurgy, Division of Metallurgy and Materials, School of Mining and Metallurgical Engineering 2 Department of Material Science &amp; Engineering, The University of Sheffield</p>	<p>Design of smart resins for structural applications</p> <p><b>Elisa Calabrese, 1, Marialuigia Raimondo ,1, Liberata Guadagno, 1,</b></p> <p>1 Department of Industrial Engineering, University of Salerno</p>	<p>Biomechanical testing of metaphyseal-fitting short stems in total hip arthroplasty; Digital image correlation Finite Element Modelling and Analysis Validation</p> <p><b>Irini Tatani, 1, Panagiotis Megas ,1, Andreas Panagopoulos, 1, Ioannis Diamantakos, 2, Photios Nanopoulos ,3, Spyros Pantelakis, 2,</b></p> <p>1 Orthopaedic Department, Patras University Hospital 2 Laboratory of Technology and Strength of Materials, Department of Mechanical Engineering and Aeronautics, University of Patras, 3 Department of Computer Engineering &amp; Informatics, University of Patras,</p>

<p>13:50 pm- 14:10 pm</p>	<p>Acoustic emission monitoring of composite plates under bending – dimension effect</p> <p>Nicolas Ospitia, 1, Eleni Tsangouri ,1, <b>Dimitrios Aggelis</b>, 1,</p> <p>1 Vrije Universiteit Brussel</p>	<p>Comparative Study of Microstructural Evolution and Mechanical Properties of Inconel® 718 and Waspaloy® Welds</p> <p><b>Angelos Kaldellis</b>, 1, Anastasia Alexandratou ,1, A. E. Kladis, 1, Stavros Deligiannis, 1, Petros Tsakiridis ,1, George Fournalis, 1,</p> <p>1 Lab of Physical Metallurgy and Center for Electron Microscopy, School of Mining and Metallurgical Engineering, National Technical University of Athens</p>	<p>Development of anti/de-icing graphene-based epoxy systems</p> <p><b>Fabiana Foglia</b>, 1, Liberata Guadagno ,1, Roberto Pantani, 1, Luigi Vertuccio, 1,</p> <p>1 Department of Industrial Engineering, University of Salerno, Via Giovanni Paolo II, Fisciano (SA) Italy</p>	<p>Biomechanical testing and FEA of orthopaedic implants for fracture fixation</p> <p><b>Giorgos Kyriakopoulos</b>, 2, Giorgos Anastopoulos ,2, Panagiotis Megas, 1, Stavros Kourkoulis, 3, Andreas Panagopoulos ,1,</p> <p>1 Patras University Hospital 2 1st Dpt of Orthopaedics and Trauma, General Hospital of Athens G.Gennimatas 3 Department of Mechanics, School of Applied Mathematical and Physical Sciences, National Technical University of Athens</p>
<p>14:10 pm- 14:30 pm</p>	<p>Crack detection in concrete bridges using Deep Convolutional Neural Networks</p> <p><b>Hajar Zoubir</b>, 1, Mustapha Rguig ,1, Mohamed Elaroussi, 1,</p> <p>1 Ecole Hassania des Travaux Publics</p>	<p>Effect of the small punch test sample geometry on the liquid metal embrittlement of Cu-30 %Zn by the eutectic Ga-In</p> <p><b>Marco Alejandro Ezequiel Alvarado</b>, 1, Ingrid Prorior Serre ,1,</p> <p>1 Univ. Lille, CNRS, INRAE, Centrale Lille, UMR 8207 - UMET - Unité Matériaux et Transformations, F-59000</p>	<p>Design of anti/de-icing bulk resins based on the joule heating</p> <p><b>Luigi Vertuccio</b>, 1, Roberto Pantani ,1, Liberata Guadagno, 1, Fabiana Foglia, 1,</p> <p>1 Department of Industrial Engineering-University of Salerno</p>	<p>Bioengineering applications in Orthopaedics</p> <p><b>George Skarpas</b>, 1, Andreas Panagopoulos ,2, Irini Tatani, 2, Panagiotis Megas, 2,</p> <p>1 Hellenic Open University, Orthopaedic Dept. for Sports Injuries &amp; Regenerative Medicine, General Hospital MITERA 2 Orthopaedic Department, Patras University Hospital</p>
<p>14:30 pm- 14:50 pm</p>	<p>A novel infrared thermography approach for automated rapid detection of damage in aeronautical composites.</p> <p>Spyridoula Farmaki, 1, Dimitrios A. Exarchos ,1, Ilias K. Tragazikis, 1, Theodore E. Matikas, 1, <b>Konstantinos G. Dassios</b> ,2,</p> <p>1 University of Patras 2 University of Ioannina</p>	<p>Effect of a coating type of a cutting tool on surface roughness of machined material during planing</p> <p><b>Katarina Monkova</b>, 1,2, Peter Pavol Monka ,1,2,</p> <p>1 Technical University in Kosice, Faculty of manufacturing technologies 2 UTB Zlin, Faculty of technology</p>	<p>Knockdown effect assessment between conventional &amp; 3R composites and their repair efficiency</p> <p><b>Maria Kosarli</b>, 1, Georgios Foteinidis ,1, Kyriaki Tsirka, 1, Asier Martinez, 2, Nerea Markaide ,2, Stefan Weidmann, 3, Alkiviadis Paipetis ,1,</p> <p>1 Department of Materials Science &amp; Engineering, University Of Ioannina 2 Polymers and Composites, CIDETEC</p>	<p>Patient specific implants and 3-D printing in Orthopaedics</p> <p><b>Olga Savvidou</b>, 1, Stavros Goumenos ,1, Ioannis Trikoupis, 1, Ioannis Zafiris, 1, Dimitra Melissaridou ,1, Pavlos Gerasimidis, 1, Emmanouil Kalfagianis ,1, Panayiotis Papagelopoulos</p> <p>1 National and Kapodistrian University of Athens</p>

			3 Manufacturing science, Institut für Verbundwerkstoffe GmbH	
14:50 pm-15:10 pm	<p>Characterization of single-lip deep drilled samples by means of in-situ eddy-current measurements</p> <p><b>Nikolas Baak</b>, 1, Jan Nickel ,2, Dirk Biermann, 2, Frank Walther, 1,</p> <p>1 Department of Materials Test Engineering - TU Dortmund University 2 Institute of Machining Technology - TU Dortmund University</p>	<p>Gradients against failure</p> <p><b>Elias C. Aifantis</b></p> <p>Aristotle University</p>	<p>Grubbs-type catalysts at molecular level in self-healing epoxy resins for aerospace applications</p> <p><b>Annalisa Mariconda</b>, 1, Simona Russo ,2, Pasquale Longo, 2,</p> <p>1 University Of Basilicata 2 University of Salerno</p>	<p>Quantitative evaluation of knee and shoulder dysfunction using Inertial sensor technology</p> <p><b>Chr. Yiannakopoulos</b>, 1, I. Vlastos ,1, G. Kallinterakis, 1, E. Gianzina, 1, E. Rousanoglou ,1,</p> <p>1 School of Physical Education &amp; Sport Science, National &amp; Kapodistrian University of Athens</p>
15:10 pm-15:30 pm	<p>A Review of Computer Vision Techniques in the Detection of Metal Failures</p> <p><b>Deborah Fitzgerald</b>, 1, Roselita Fragoudakis ,1,</p> <p>1 Department of Mechanical Engineering, Merrimack College</p>	<p>A Leakage Problem in Hot Water System of a Building</p> <p><b>Erhan Ulvan</b>, 1, Kairong Zhang ,1,</p> <p>1 Acuren Group Inc.</p>		
15:30 pm-15:45 pm	<b>Coffee Break</b>			
15:45 pm-17:45 pm	<p><b><u>SESSION 9</u></b></p> <p><b>Workshop on Non-Destructive Testing and Structural Health Monitoring for prevention of failure</b></p> <p><b>Chairperson: Prof. Elena Jasiuniene, Kaunas University of Technology</b></p>	<p><b><u>SESSION 10</u></b></p> <p><b>Mini Workshop on Experimental studies on the relation between microstructure and mechanical fracture processes</b></p> <p><b>Chairperson: Dr. George</b></p>	<p><b><u>SESSION 11</u></b></p> <p><b>Mini Workshop on Design of Self-responsive Thermosetting Resins for application in Aeronautics</b></p> <p><b>Chairpersons: Prof. Liberata Guadagno - Prof. Roberto Pantani,</b></p>	<p><b><u>SESSION 12</u></b></p> <p><b>Using Computational and Experimental Techniques to Investigate the Role of Extracellular Matrix in the Mechanical Response of Soft Tissue</b></p>

	CONTINUED	Pantazopoulos, ELKEME Research and Development Center  CONTINUED	University of Salerno  CONTINUED	Chairperson: Prof. Alkiviadis Tsamis, University of Western Macedonia University of Leicester
15:45 pm- 16:05 pm	<p>Impedance spectroscopy as a tool for monitoring the properties in cementitious nanocomposite materials with advanced functionalities</p> <p><b>Aikaterini Gkaravela</b>, 1, Ioanna Vareli ,1, Nektaria - Marianthi Barkoula, 1, Alkiviadis Paipetis, 1,</p> <p>1 University Of Ioannina</p>	<p>Correlation of dominant texture components located near the fracture with the tensile directions</p> <p><b>Sofia Papadopoulou</b>, 1,2, Vasilis Loukadakis ,2, Zisimos Zaharopoulos, 2, Spyros Papaefthymiou, 2,</p> <p>1 ELKEME 2 National Technical University of Athens 3 ELVAL (ELVALHALCOR ALUMINUM DIVISION)</p>	<p>Certification challenge for self-responsive materials in aeronautics</p> <p><b>Raffaele Longo</b>, 1, Giuseppina Barra ,1, Liberata Guadagno, 1,</p> <p>1 University of Salerno</p>	<p>Role of Microstructure in Mechanics and Engineering of Soft Biological Materials</p> <p><b>Alkiviadis Tsamis</b></p> <p>University of Western Macedonia, University of Leicester</p>
16:05 pm- 16:25 pm	<p>Repair assessment of 3R composites using various NDE techniques and development of online SHM technologies</p> <p><b>Georgios Foteinidis</b>, 1, Maria Kosarli ,1, Kyriaki Tsirka, 1, Alaitz Alaitz Ruiz De Luzuriaga, 2, Gema Solera ,2, Stefan Weidmann, 3, Alkiviadis S. Paipetis ,1,</p> <p>1 Department of Materials Science and Engineering, University Of Ioannina 2 Polymers and Composites, CIDETEC 3 Manufacturing science, Institut für Verbundwerkstoffe GmbH</p>	<p>Failure analysis of metallic components due to improper materials and fabrication method.</p> <p><b>Fabienne Delaunois</b>, 1, Alexandre Mégret ,1, Véronique Vitry, 1,</p> <p>1 UMONS</p>	<p>Map of local mechanical properties of anticorrosive graphene-based coatings</p> <p><b>Marialuigia Raimondo</b>, 1, Vito Speranza ,1, Roberto Pantani, 1, Carlo Naddeo, 1, Liberata Guadagno ,1,</p> <p>1 Department of Industrial Engineering, University of Salerno</p>	<p>A computational study of mechanical performance of bioresorbable polymer composite stents</p> <p><b>Žiga Donik</b>, 1, Branko Nečemer ,1, Srečko Glodež, 1, Janez Kramberger, 1,</p> <p>1 University of Maribor, Faculty of Mechanical Engineering</p>



<p>16:25 pm- 16:45 pm</p>	<p>Automated detection-classification of defects on photo-voltaic modules assisted by thermal drone inspection</p> <p><b>Arsenios Gurras</b>, 1, Leonidas Gergidis ,1, Christos Mytafides, 1, Lazaros Tzounis, 1, Alkiviadis Paipetis ,1,</p> <p>1 Department of Materials Science and Engineering</p>	<p>Phase-Field Modeling Of Nugget Zone in Friction Stir Welding</p> <p><b>Anna Zervaki</b>, 1, Christos Prosgolitis ,1, Samuel Lambrakos, 2,</p> <p>1 University Of Thessaly 2 Naval Research Laboratory</p>	<p>Multifunctional polymer composite materials with Self-healing &amp; EMI shielding properties</p> <p>Anastasia Polymerou, 1, <b>Maria Kosarli</b> ,1, Georgios Foteinidis, 1, Christos Vazouras, 2, Alkiviadis Paipetis ,1,</p> <p>1 Department of Materials Science &amp; Engineering, University of Ioannina, Ioannina 45110, Greece 2 Telecommunications Laboratory, Sector of Combat systems, Naval operations, Electronics and Telecommunications, Hellenic Naval Academy, Piraeus 18539, Greece</p>	<p>Shape and Pattern in Biological System – Classifying Aortic Geometry from Clinical Data</p> <p><b>Luka Pocivavsek</b>, 1, Kameel Khabaz ,1, Seth Sankary, 1, Ross Milner, 1,</p> <p>1 The University of Chicago</p>
<p>16:45 pm- 17:05 pm</p>	<p>Study of modified CNTs dispersions with the use of Electrical Impedance Spectroscopy</p> <p><b>Angeliki Eirini Dimou</b>, 1, Nikolaos Alexopoulos ,1, Georgios Maistros, 2, Konstantina Kotsala, 1, Georgios Binis ,1, Georgios Asimakopoulos, 3, Ioannis Karatasios ,4,</p> <p>1 Department of Financial and Management Engineering, University Of The Aegean 2 ADVISE 3 Department of Materials Science &amp; Engineering, University of Ioannina 4 Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research "Demokritos"</p>	<p>Numerical and experimental study for AM50 magnesium alloy under dynamic loads</p> <p>Iulian-Ionuț Ailine, 1, <b>Sergiu-Valentin Galatanu</b> ,1, Cosmin Ioan Onea, 1, Liviu Marșavina, 1,</p> <p>1 University Politehnica Timisoara</p>	<p>Bioinspired Cementitious-Polymer Composite for Increased Energy Absorption</p> <p>Trevor Painter, 1, Emily Schwab ,1, Nicole MacCrate, 1, <b>Alexander Brand</b>, 1, Eric Jacques ,1,</p> <p>1 Virginia Polytechnic Institute and State University</p>	<p>Remodeling of collagen fibers in bowel tissues induced by anastomotic geometry</p> <p><b>Nhung Nguyen</b>, 1, Brian Fleischer,1, John Alverdy, 1, Luka Pocivavsek, 1,</p> <p>1 The University of Chicago</p>
<p>17:05 pm- 17:25 pm</p>	<p>Structural characterization &amp; damage evaluation method in cracked-liked Timoshenko beam analyzing the frequency &amp; modal behavior caused by the Bending Natural Frequencies Splitting (BNFS) phenomenon. Experimental validation</p>		<p>Simulation of the mechanical behavior of Self-healing Composite materials</p> <p><b>Evgenia Madia</b>, 1, Panagiota Polydoropoulou ,1, Spiros Pantelakis, 1, Konstantinos Tserpes, 1,</p> <p>1 University of Patras</p>	<p>Flux-driven and external-pressure-driven finite element models replicating pressure-volume hysteresis of small airways and daughter branches in the lung.</p> <p><b>James Campbell</b>, 1, Salman Siddiqui ,2, Simon Gill, 1, Alkiviadis Tsamis, 1,</p>

	<p><b>Julio C. Gómez-Mancilla</b>, 1, Sergio R. Montero-Arguello ,1, Fidel E. Hernández-Montero, 2, Joel Pino-Gómez, 2,</p> <p>1 Instituto Politécnico Nacional, IPN, Vibrs. &amp; Rotodynamics Lab. ESIME-Zac  2 Universidad Tecnológica de La Habana José Antonio Echeverría, CUJAE</p>			<p>1 School of Engineering, University of Leicester  2 NIHR, Leicester Respiratory Biomedical Research Unit</p>
<p>17:25 pm- 17:45 pm</p>				<p>Topography induced de-adhesion of a viscoelastic patch off a wrinkling bilayer</p> <p><b>Nhung Nguyen</b>, 1, Sachin Velankar ,2, Edith Tzeng, 3, Enrique Cerda, 4, Luka Pocivavsek ,1,</p> <p>1 The University of Chicago  2 University of Pittsburgh  3 University of Pittsburgh Medical Center  4 Universidad de Santiago de Chile</p>
<p>17:45 pm</p>	<p>End of Day 1</p>			

**THURSDAY, June 24, 2021**

09:00 am- 09:30 am	<b>Keynote Lecture: Prof. Gregory Haidemenopoulos, University of Thessaly</b> Towards cyberalloys: computational alloy and process design			
09:30 am- 09:40 am	<b>Coffee Break</b>			
09:40 am- 11:40 am	<p><b><u>SESSION 13</u></b></p> <p><b>Workshop on Properties and characterization of high strength materials and components for engineering applications</b></p> <p><b>Chairpersons: Prof. Michael Vormwald - Prof. George Savaidis, Technische Universität of Darmstadt (TUDa) - Aristotle University of Thessaloniki</b></p>	<p><b><u>SESSION 14</u></b></p> <p><b>Integrated Computational Materials Engineering (ICME) - The case of steels.</b></p> <p><b>Chairperson: Prof. Gregory Haidemenopoulos, University of Thessaly</b></p>	<p><b><u>SESSION 15</u></b></p> <p><b>Mini Workshop on Environmental degradation, corrosion and wear</b></p> <p><b>Chairperson: Prof. Angeliki Lekatou, University of Ioannina</b></p>	<p><b><u>SESSION 16</u></b></p> <p><b>Manufacturing of composite materials - Process simulation and mechanical characterization</b></p> <p><b>Chairpersons: Prof. Antoniomaria Di Ilio - Dr. Antonios Stamopoulos, University of L'Aquila</b></p>
09:40 am- 10:00 am	<p>Multiaxial cyclic deformation and life-prediction models for super-elastic NiTi shape memory alloys</p> <p><b>Di Song, 1,2,3, Chao Yu ,4,</b></p> <p>1 Materials Mechanics Group, Department of Civil and Environmental Sciences, Technical University of Darmstadt 2 School of Mechanical and Electrical Engineering, University of Electronic Science and Technology of China 3 Institute of Electronic and Information Engineering of UESTC in Guangdong 4 School of Mechanics and Engineering, Southwest Jiaotong University</p>	<p>Process Design and Optimization of HSLA Steels using Mesoscale Modeling</p> <p><b>Maria-Ioanna Tzini, 1, Gregory Haidemenopoulos ,1,</b></p> <p>1 University of Thessaly, Department of Mechanical Engineering</p>	<p>Electrochemical Corrosion of 2707 Hyper-Duplex Stainless Steel</p> <p><b>Anna Zervaki, 1, Alexandra Faka ,1, Kleanthis Karagiannis, 1, Spyros Kleftakis, 2, Angeliki Lekatou ,2,</b></p> <p>1 University Of Thessaly 2 University of Ioannina</p>	<p>Experimental characterization of fabrication effects on the shear properties of thermoplastic composites in high and sub-zero temperatures</p> <p><b>Luca Glauco Di Genova, 1, Antonios G. Stamopoulos ,1, Antoniomaria Di Ilio, 1,</b></p> <p>1 Department of Industrial and Information Engineering and Economics (DIIE), University of L'Aquila, Monteluco di Roio, 67100</p>
10:00 am- 10:20 am	<p>Impact of structural uncertainties on the buckling strength of cylindrical GLARE panels subjected to uniform compression</p> <p><b>Costas Kalfountzos, 1, George Bikakis ,1, Efsthios Theotokoglou, 1,</b></p> <p>1 National Technical University Of Athens</p>	<p>Robust optimization for alloy and process design of medium Mn steels</p> <p><b>Ioannis Aristeidakis, 1, Gregory N. Haidemenopoulos ,1,</b></p> <p>1 Department of Mechanical Engineering, University of Thessaly</p>	<p>Effect of heat treatments on the corrosion behaviour of Al-5Mg layers deposited on Al6061 by wire-arc additive manufacturing</p> <p><b>A.G. Lekatou, 1, A. Gogolos,1, A.K. Sfikas,2, Amin S. Azar,3, S. Diplas,3</b></p> <p>1 University of Ioannina 2 University of Brunel</p>	<p>Experimental and numerical analysis of the defects induced by the thermoforming process on woven textile thermoplastic composites for automotive applications</p> <p><b>Antonella Gaspari, 1, Giulio D'Emilia ,1, Emanuela Natale, 1, Antonios Stamopoulos, 1, Antoniomaria Di Ilio ,1,</b></p>

			3 Sintef	1 University Of L'aquila
10:20 am-10:40 am	<p>On the applicability of cyclic and fatigue parameters estimation methods to high strength steels</p> <p><b>Robert Basan</b>, 1, Tea Marohnić ,1,</p> <p>1 University of Rijeka, Faculty of Engineering</p>	<p>Phase-field simulation of the evolution of retained austenite during processing of low alloy TRIP steels</p> <p><b>Marianna Tzini</b>, 1, Peter Christodoulou ,2, Alexis Kermanidis, 2, Gregory Haidemenopoulos, 1,</p> <p>1 Laboratory of Materials, Department of Mechanical Engineering, University of Thessaly 2 Laboratory of Mechanics and Strength of Materials, Department of Mechanical Engineering, University of Thessaly</p>	<p>Visualisation of Thermally Sprayed Coating Properties on the Surface of Complex Parts: Experiments &amp; Simulations</p> <p><b>Spyros Kamnis</b>, 1, Konstantinos Delibasis ,2, Maria Tzinava, 2,</p> <p>1 Castolin Eutectic-Monitor Coatings, R&amp;D Department 2 University of Thessaly, Department of Computer Science and Biomedical Informatics</p>	<p>Uncertainty identification of composite properties via inverse approaches: methods and virtual setups</p> <p><b>Georgios Balokas</b>, 1, Roberto Frias Nerio ,1, Benedikt Kriegesmann, 1,</p> <p>1 Hamburg University Of Technology (TUHH)</p>
10:40 am-11:00 am	<p>Microstructural Characterization of AlCrTiV – Si High Entropy Alloy for advanced applications</p> <p>Ioannis Daskalopoulos, 1, <b>Spyridon Chaskis</b> ,1, Marianthi Bouzouni, 2, Paul Stavroulakis, 3, Russell Goodall ,3, Spyros Papaefthymiou, 1,</p> <p>1 Laboratory of Physical Metallurgy, Division of Metallurgy and Materials, School of Mining and Metallurgical Engineering 2 Department of Physical Metallurgy and Forming, Hellenic Research Centre for Metals (ELKEME S.A.) 3 Department of Material Science &amp; Engineering, The University of Sheffield</p>	<p>Constitutive Modeling of BBC Single Crystals: Non-Schmid stresses and computational issues</p> <p><b>Ilias Bellas</b>, John L. Bassani ,3, Nikolaos Aravas, 1,2,</p> <p>1 Department of Mechanical Engineering, University of Thessaly 2 International Institute for Carbon Neutral Energy Research (WPI-I2CNER)Kyushu University 3 Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania</p>	<p>Effect of pH and fly ash on the electrochemical performance of 316L stainless steel concrete reinforcement in saline environments</p> <p><b>S. Tsouli</b>,1, P. Goutzos, S. Kleftakis, A.G. Lekatou,1,</p> <p>1 University of Ioannina</p>	<p>A Novel Polymeric Composite Material for Thermal Shield Applications – Fabrication and Flammability Characterization</p> <p><b>Gianluigi Creonti</b>, 1, Gianluca Falleti Luciano Matera</p> <p>1 Crossfire Srl 2 Nanoprom Srl</p>

11:00 am- 11:20 am	<p>On the effects of heat and surface treatment on the fatigue performance of high-strength leaf springs</p> <p>Michail Malikoutsakis, 1, Christos Gakias ,1, Ioannis Makris, 1, Peter Kinzel, 2, Eckehard Müller ,3, Maria Pappa, 1, Nikolaos Michailidis ,1, <b>Georgios Savaidis</b> ,1,</p> <p>1 Aristotle University Thessaloniki 2 SOGEFI HD SUSPENSIONS Germany GmbH 3 University of Applied Sciences of Bochum</p>	<p>Thermodynamic and kinetic study of intercritical annealing of DP 1000 Steel</p> <p><b>Eleni Kamoutsi</b>, 1, Eleni Karpouza ,1, Konstantinos Preventas, 1, Georgios Nanas, 1,</p> <p>1 University Of Thessaly</p>	<p>Examination of reduced graphene oxide aqueous dispersions with electrical impedance spectroscopy</p> <p><b>Christina Margarita Charalampidou</b>,1, Angeliki Eirini Dimou, 1, Ioanna Sakellariou, 1, Konstantina Kotsala, 1, Georgios Maistros, 2, Nikolaos Alexopoulos, 1</p> <p>1 Department of Financial Engineering, School of Engineering, University of the Aegean 2 ADVISE E.E.</p>	<p>Thermo-fluidynamic analysis of composite metallic coating on metal foam</p> <p>Gabriele Baiocco, 1, Daniele Almonti ,1, Erica Menna, 1, Luciano Minardi, 1, <b>Emanuele Mingione</b> ,2, Nadia Ucciardello, 1,</p> <p>1 University Of Rome Tor Vergata 2 University of Campania “Luigi Vanvitelli”</p>
11:20 am- 11:40 am	<p>Characterization and performance of high-strength steel 51CrV4 under cyclic loading</p> <p><b>Michail Malikoutsakis</b>, 1, Ioannis Makris ,1, Aggelos Pagonas, 1, Maria Pappa, 1, Nikolaos Michailidis ,1, Georgios Savaidis, 1,</p> <p>1 Aristotle University Thessaloniki</p>	<p>Discussion of hardening effects on phase field models of fracture</p> <p><b>Aris Tsakmakis</b>, 1, Michael Vormwald ,1,</p> <p>1 Technische Universität Darmstadt</p>		
11:40 am- 11:50 am	<b>Coffee Break</b>			

<p>11:50 am- 13:10 pm</p>	<p><b><u>SESSION 17</u></b></p> <p><b>Workshop on Properties and characterization of high strength materials and components for engineering applications</b></p> <p><b>Chairpersons: Prof. Michael Vormwald - Prof. George Savaidis, Technische Universität of Darmstadt (TUDa) - Aristotle University of Thessaloniki</b></p> <p><b>CONTINUED</b></p>	<p><b><u>SESSION 18</u></b></p> <p><b>Microstructure and properties of aluminum alloys for advanced applications</b></p> <p><b>Chairperson: Prof. Alexis Kermanidis, University of Thessaly</b></p>	<p><b><u>SESSION 19</u></b></p> <p><b>Mini Workshop on Environmental degradation, corrosion and wear</b></p> <p><b>Chairperson: Prof. Angeliki Lekatou, University of Ioannina</b></p> <p><b>CONTINUED</b></p>	<p><b><u>SESSION 20</u></b></p> <p><b>Safety aspects in aircraft design</b></p> <p><b>Chairperson: Prof. Andreas Strohmayer, IFB University of Stuttgart</b></p>
<p>11:50 am- 12:10 pm</p>	<p>Evaluation of the effect of shot size on the residual stresses of shot peened high strength steel 51CrV4 specimens through a 2D FEA model.</p> <p><b>Georgios Maliaris, 1, Christos Gakias ,2, Michail Malikoutsakis, 2, Georgios Savaidis, 2,</b></p> <p>1 International Hellenic University 2 Aristotle University Thessaloniki</p>	<p>Mode-I fatigue crack growth analysis based on crack tip cyclic strain hardening</p> <p><b>Alexis Kermanidis, 1, Andreas Tzamtzis ,1,</b></p> <p>1 Laboratory of Mechanics and Strength of Materials, Department of Mechanical Engineering, University of Thessaly</p>	<p>Cr free chemical stripping of anodic layers formed on aluminium alloys used in aerospace</p> <p><b>Carmen Vladu, 1, Norica Godja ,1, Michael Sinnabell, 1, Rene Wultsch, 1,</b></p> <p>1 CEST - Center Of Electrochemical Surface Technology</p>	<p>Safety assessment for the power train integration of the hybrid-electric e-Genius HPH</p> <p><b>Andreas Strohmayer</b></p> <p>IFB University of Stuttgart</p>
<p>12:10 pm- 12:30 pm</p>	<p>An addition to the Local Strain Approach of the FKM guideline nonlinear for calculating the fracture fatigue life of steel components</p> <p><b>Melanie Fiedler, 1, Michael Vormwald ,2,</b></p> <p>1 Structural Durability Group, Technical University Dresden 2 Material Mechanics Group, Technical University Darmstadt</p>	<p>Influence of pre-straining on the fatigue crack growth rate of S355 and S460 structural steels</p> <p><b>Christos Prosgolitis, 1, Alexis Kermanidis ,1, Spyros Karamanos, 1,</b></p> <p>1 Laboratory of Mechanics and Strength of Materials, Department of Mechanical Engineering, University of Thessaly</p>	<p>Corrosion-induced hydrogen trapping and the effect of ageing treatment in Aluminum alloy 2024</p> <p><b>Eleni Kamoutsis, 1, Gregory Haidemenopoulos ,1, Dalaver Anjum , 2, Thanasis Kefalas, 1, Charilaos Karantonidis1, Panagiotis Floratos, 1,</b></p> <p>1 University Of Thessaly 2 Department of Physics, Khalifa University</p>	<p>On the Phenomenon of Impact</p> <p><b>Stephan Kalapis, 1, Athanasios Dafnis ,1, Kai-Uwe Schröder, 1,</b></p> <p>1 RWTH Aachen University</p>

12:30 pm- 12:50 pm	Buckling of simply supported GLARE cylindrical panels subjected to uniform compression  <b>Costas Kalfountzos</b> , 1, George Bikakis ,1, Efstathios Theotokoglou, 1,  1 National Technical University Of Athens	The effect of artificial ageing on the corrosion-induced mechanical properties degradation of aeronautical aluminum alloy 2198  <b>Christina Margarita Charalampidou</b> , 1, Foteini Tazlakidou ,1, Angeliki Proiou, 1, Stavros Kourkoulis, 2, Nikolaos Alexopoulos ,1,  1 1Department of Financial Engineering, School of Engineering, University of the Aegean 2 Laboratory of Testing and Materials, Department of Mechanics, National Technical University of Athens	Organic dyes as corrosion inhibitors of commercial AA1050 aluminum alloy in sodium chloride environment  <b>Paraskevi Pantazopoulou</b> , 1, Stamatina Theohari ,2, Sofia Kalogeropoulou, 1,  1 Department of Electrical and Electronic Engineering, University Of West Attica 2 Graphic Design and Visual Communication Department, University of West Attica	Heat Shielded Unmanned Aerial Vehicle (UAV)  <b>Mim Kabir</b> , 1,  1 German University of Technology in Oman (GUtech)
12:50 pm- 13:10 pm	Autofrettage of component-like ultra high Strength Steel Specimens with intersecting Holes  <b>Carl Fällgren</b> , 1, Heinz Thomas Beier ,1, Michael Vormwald, 1,  1 Technical University of Darmstadt, Department of Civil and Environmental Engineering Sciences, Materials Mechanics Group		The influence of exposed to corrosion length of rebars on fatigue life of RC elements  Konstantinos Koulouris, 1, <b>Maria Basdeki</b> ,1, Charis Apostolopoulos, 1,  1 Laboratory of Technology and Strength of Materials, University Of Patras	A Machine Learning Based Approach for Fast Impact Damage Analysis  <b>Mirijam Bastek</b> , 1, Ronny Sachse ,2, Peter Middendorf, 1,  1 University Of Stuttgart 2 Airbus Defence and Space
13:10 pm- 14:10 pm	<b>LUNCH</b>			
14:10 pm- 14:40 pm	<b>Keynote Lecture: Prof. Peter Middendorf, University of Stuttgart</b> Composite Simulation: How can Data Science and Enhanced Data Acquisition approaches improve design against failure?			
14:40 pm- 14:50 pm	<b>Coffee Break</b>			
14:50 pm- 16:30 pm	<b><u>SESSION 21</u></b>  <b>Workshop on Properties and characterization of high strength materials and components for engineering applications</b>	<b><u>SESSION 22</u></b>  <b>Modeling and Simulation of Aerospace Materials and Systems</b>  <b>Chairperson: Prof. Konstantinos</b>	<b><u>SESSION 23</u></b>  <b>Micro- and nano-mechanical characterization and modelling of advanced materials</b>	<b><u>SESSION 24</u></b>  <b>Validated simulation of novel materials and structures</b>  <b>Chairperson: Prof. George Lampeas,</b>

	Chairpersons: Prof. Michael Vormwald - Prof. George Savaidis, Technische Universität of Darmstadt (TUDa) - Aristotle University of Thessaloniki  CONTINUED	Stamoulis, Amsterdam University	Chairperson: Prof. Nikolaos Michailidis- Prof. Georgios Maliaris, Aristotle University of Thessaloniki - International Hellenic University	University of Patras
14:50 pm- 15:10 pm	Influence of discontinuities on fatigue strength using the example of additively manufactured specimens made of AlSi10Mg  <b>Thomas Beier</b> , 1, Patrick Yadegari ,1, Michael Vormwald, 1,  1 Technische Universität Darmstadt	Energy Balance-Based Numerical Method for Turbine Blade Cooling Analysis during Preliminary Design of Aircraft Engines  <b>Asteris Apostolidis</b> , 1,  1 Cranfield University	The corrosion-fatigue performance of conventionally and additively manufactured Maraging steel after various surface and heat treatments  <b>Apostolos Arvanitidis</b> , 1,2, Emmanouil Bouzakis ,3, Fotis Kazelis, 1, Georgios Maliaris, 4, Nikolaos Michailidis ,1,2,  1 Aristotle University Of Thessaloniki 2 Center for Research & Development of Advanced Materials 3 German University of Technology 4 International Hellenic University	Development of a multipurpose test rig and validation of an innovative rotorcraft vertical tail TAILTEST  <b>Vaclav Horak</b> , 1,  1 Vyzkumny a zkusebni letecky ustav, a.s.
15:10 pm- 15:30 pm	Multiaxial Testing Bench for the Durability Assessment of High-Strength Automotive Axle Suspension Systems  Efstratios Giannakis, 1, <b>Georgios Savaidis</b> ,1,  1 Aristotle University Thessaloniki	A Health Monitoring Modelling Case Study: Humidity Effects on Engine Deterioration Prediction  <b>Asteris Apostolidis</b> , 1, Konstantinos Stamoulis ,2,  1 Air France-KLM 2 Amsterdam University of Applied Sciences	Experimental and FE – based analysis of the mechanical performance of high porosity gyroid lattices with thin walls.  <b>Georgios Maliaris</b> , 1, Nikolaos Michailidis ,2, Apostolos Argyros, 2,  1 International Hellenic University 2 Aristotle University Thessaloniki	Design of the multipurpose test rig  <b>Martin Oberthor</b> , 1, Horák Horák ,1, Roman Růžek  1 VZLU-Czech Aerospace Research Centre



<p>15:30 pm- 15:50 pm</p>	<p>Estimation of the fatigue strength of ultra-high strength steels</p> <p><b>Patrick Yadegari</b>, 1, Heinz Thomas Beier ,1, Michael Vormwald, 1,</p> <p>1 Technical University of Darmstadt, Department of Civil and Environmental Engineering Sciences, Materials Mechanics Group</p>	<p>An evaluation of various damage models for thermoplastic composite materials subjected to quasi-static tensile loading</p> <p><b>Ioannis Sioutis</b>,1, Konstantinos Tserpes,1</p> <p>1 University of Patras</p>	<p>Homogenization of Unidirectional Composites with Brittle Fracture Modeled by the Phase-Field Approach</p> <p><b>Mert Atasoy</b>, 1, Serdar Göktepe ,2, Altan Kayran, 1,</p> <p>1 Department of Aerospace Engineering, Middle East Technical University 2 Department of Civil Engineering, Middle East Technical University</p>	<p>Development and validation of a cohesive zone-based numerical methodology for delamination prediction in laminated composite structures</p> <p><b>Konstantinos Fotopoulos</b>, 1, Harry Psihoyos ,1, George Lampeas, 1,</p> <p>1 Athena Research Center, Industrial Systems Institute</p>
<p>15:50 pm- 16:10 pm</p>	<p>Approximation of elastic-plastic local strains in surface-hardened notched components</p> <p><b>Patrick Yadegari</b>, 1, Teresa Schlitzer ,1, Michael Vormwald, 1,</p> <p>1 Technical University of Darmstadt, Department of Civil and Environmental Engineering Sciences, Materials Mechanics Group</p>	<p>An Integrated Application of Sensors, Physical Failure Modeling and Data Analytics to Enable Optimal Maintenance Strategies</p> <p><b>Christiaan Schoemaker</b>, 1, Konstantinos Stamoulis</p> <p>1 Amsterdam University of Applied Sciences</p>	<p>Damage mechanisms appearing in a cross-ply composite material under uniaxial tension: a multiscale simulation study</p> <p><b>Eleftherios Tsvolas</b>, 1, Leonidas Gergidis ,1, Alkiviadis Paipetis, 1,</p> <p>1 Dept. of Materials Science and Engineering, University of Ioannina</p>	<p>Thermomechanical Simulation of SLM process for Prediction of Residual Stress and Distortion Fields</p> <p><b>Harry O. Psihoyos</b>, 1, George N. Labeas ,1,</p> <p>1 Laboratory of Technology and Strength of Materials, Mechanical Engineering and Aeronautics Department, University Of Patras</p>
<p>16:10 pm- 16:30 pm</p>			<p>Characterization of surface integrity of shot-peened leaf springs by micro- and nano-indentation</p> <p><b>Maria Pappa</b>, 1, George Savaidis ,2, Nikolaos Michailidis, 1,</p> <p>1 Physical Metallurgy Laboratory, Mechanical Engineering Department, School of Engineering, Aristotle University of Thessaloniki, 2 Laboratory of Machine Elements and Machine Design, Mechanical Engineering Department, School of Engineering, Aristotle University of</p>	<p>Progressive Failure Analysis of Laminated Fiber Reinforced Composite Materials</p> <p><b>Harry O. Psihoyos</b>, 1, Konstantinos T. Fotopoulos ,1, George N. Labeas, 1,</p> <p>1 ATHENA RC/Industrial Systems Institute</p>

			Thessaloniki,	
16:30 pm- 16:40 pm	<b>Coffee Break</b>			
16:40 pm- 18:20 pm	<u><b>SESSION 25</b></u>  <b>Advanced composite materials with embedded capabilities</b>  <b>Chairperson: Prof. Leonidas Gergidis, University of Ioannina</b>	<u><b>SESSION 26</b></u>  <b>Innovative approaches for damage assessment in modern structural materials</b>  <b>Chairperson: Prof. Dionysios Mouzakis, Hellenic Army Academy</b>	<u><b>SESSION 27</b></u>  <b>Adhesive Bonding</b>  <b>Chairpersons: Prof. Konstantinos Tserpes - Mr. Kai Brune, University of Patras - Fraunhofer IFAM</b>	<u><b>SESSION 28</b></u>  <b>Green Tribology</b>  <b>Chairperson: Prof. Pantelis Nikolakopoulos, University of Patras</b>
16:40 pm- 17:00 pm	A Carbon Fiber-Reinforced Polymer Composite with Embedded Photo-Thermal Energy Harvesting Capabilities  <b>Christos Mytafides, 1, George Karalis ,1, Lazaros Tzounis, 1, Alkiviadis Paipetis, 1, Nektaria Barkoula ,1,</b>  1 Composite and Smart Materials Laboratory, Department of Materials Science and Engineering, University of Ioannina	Adding remote sensing capabilities in fibre reinforced polymer composites through magnetoelastic sensor integration by 3D printing  <b>Dionysios Mouzakis,1,, Dimitrios Dimogianopoulos,1</b>  1 Hellenic Army Academy	Laser induced breakdown spectroscopy (LIBS) for extended non-destructive testing (ENDT) – latest advancements and current research  <b>Julian Heine, 1, Mareike Schlag ,1, Kai Brune, 1, Hauke Brüning, 1,</b>  1 Fraunhofer Institute for Manufacturing Technology and Advanced Materials	Optimal Designs of Tilting-Pad Thrust Bearing operation with the combination of numerical and machine learning techniques  <b>Konstantinos Katsaros, 1, Pantelis Nikolakopoulos G. ,1,</b>  1 University Of Patras

<p>17:00 pm- 17:20 pm</p>	<p>The Integration of a CNT-based Organic Thermoelectric Generator within a Carbon Fiber Reinforced Polymer Composite</p> <p><b>Christos Mytafides</b>, 1, Lazaros Tzounis ,1, Kyriaki Tsirka, 1, George Karalis, 1, Lampros Koutsotolis ,1, Eleftherios Lambrou, 1, Leonidas Gergidis ,1, Alkiviadis Paipetis ,1,</p> <p>1 Composite and Smart Materials Laboratory, Department of Materials Science and Engineering, University of Ioannina</p>	<p>Designing a knowledge management system for Naval Materials Failure Analysis</p> <p><b>Nikolaos Melanitis</b>, 1, George Giannakopoulos ,2, Konstantinos Stamatakis, 2, Dionysios Mouzakis, 3, Aggelos Koutsomichalis ,4,</p> <p>1 Hellenic Naval Academy 2 Institute of Informatics and Telecommunications, NCSR "Demokritos" 3 Hellenic Army Academy 4 Hellenic Airforce Academy</p>	<p>Crack propagation simulation in adhesively bonded composite joints with a complex crack initiation.</p> <p><b>Lukas Münch</b>, 1, Ronny Sachse ,2, Peter Middendorf, 1,</p> <p>1 University Of Stuttgart 2 AIRBUS Defence and Space GmbH</p>	<p>Cavitation shapes measurements in piston-rig lubrication and their link to lubricant properties</p> <p><b>Polychronis Dellis</b></p> <p>University of Patras</p>
<p>17:20 pm- 17:40 pm</p>	<p>Cement/ swcnt thermoelectric nanocomposites for potential large-scale thermal energy harvesting</p> <p><b>Ioanna Vareli</b>, 1, K. Garavela,1, L. Tzounis, N.-M. Barkoula,1, A.S. Paipetis,1</p> <p>1 University Of Ioannina</p>	<p>Long Fibre Thermoplastic Composite Subjected to Impact: Experimental and Numerical Investigation</p> <p><b>Panagiotis Charitidis</b></p> <p>University of Thrace</p>	<p>Non Destructive Testing for contaminated surface inspection before bonding</p> <p><b>Sara Kirchner</b>, 1, Julian Heine ,2, Andreas Krenz, 2, Kai Brune, 2, Cécilia Gestraud ,1, Julie Lecomte, 1, Laurent Ferres ,1, Maxime Péron ,1,3, Nicolas Cuvillier ,1,4</p> <p>1 IRT Saint Exupéry 2 Fraunhofer IFAM 3 ArianeGroup 4 Safran Composites</p>	<p>The effect of knocking combustion on a turbocharged diesel engine emissions and top compression ring friction</p> <p><b>Anastasios Zavos</b>, 1, Pantelis Nikolakopoulos ,2, Apostolos Pesyridis, 3, Alasdair Cairns, 4,</p> <p>1 Machine Design Laboratory, Department of Mechanical Engineering and Aeronautics, University of Patras 2 Machine Design Laboratory, Department of Mechanical Engineering and Aeronautics, University of Patras 3 Metapower Limited 4 University of Nottingham</p>

<p>17:40 pm- 18:00 pm</p>	<p>On Lateral and Axial Crushing Response of Filament Winding GFRP and Modified GFRP Tubes</p> <p><b>Lampros Koutsotolis</b>, 1, Georgios Karalis ,1, Thomais Tiriakidou, 2, Lazaros Tzounis, 1, Kyriaki Tsirka ,1, Christos Mytafides, 1, Alkiviadis Paipetis ,1,</p> <p>1 Composite and Smart Materials Laboratory, Department of Materials Science and Engineering, University of Ioannina 2 B&amp;T Composites</p>	<p>Small size 3D printed hydraulic components with integrated fluid sensing capabilities: A proof of concept</p> <p><b>Chrysoula Manoli</b>, 1,3, Nicholas R. Hendricks ,2, Jerome Noël, 1, Paolo Petagna, 1, Sébastien Lani ,2, Dionysios Mouzakis, 3,</p> <p>1 CERN (Conseil Européen pour la Recherche Nucléaire) 2 CSEM (Centre Suisse d'Électronique et de Microtechnique) 3 Hellenic Army Academy</p>	<p>Numerical simulation of debonding of a composite-to-metal adhesive joint subjected to centrifugal load</p> <p><b>Ioannis Sioutis</b>, 1, Ioannis Floros,1, Elli Moutsompegka,1, Konstantinos Tserpes, 1,</p> <p>1 University of Patras</p>	<p>Tensile and fatigue behaviour of Plasma Sprayed Titania and Chromia Coatings</p> <p>Angelos Koutsomichalis, 1, George Loukas ,1, Michalis Vardavoulis, 2, Antonios Lontos, 3, <b>Nikolaos Vaxevanidis</b> ,4,</p> <p>1 Hellenic Air-Force Academy 2 Pyrogenesis S.A 3 Frederick University 4 School of Pedagogical &amp; Technological Education (ASPETE)</p>
<p>18:00 pm- 18:20 pm</p>		<p>The quasi-static crack growth and analysis of interlaminar fracture toughness of layered composite</p> <p><b>Vitalijs Pavelko</b>, 1, Igors Pavelko ,2,</p> <p>1 Riga Technical University 2 Ogres Valsts gimnāzija</p>		<p>Influence of multiaxial cyclic loading on the fatigue behavior of defective friction stir welded joints</p> <p><b>Ulises Alfaro Mercado</b>, 1, Ulrike Dressler ,1, Eric Breitbarth, 1, Guillermo Requena, 1,</p> <p>1 German Aerospace Center (DLR)</p>
<p>18:20 pm</p>	<p>End of Day 2</p>			

FRIDAY, June 25, 2021

09:00 am-09:30 am	<b>Keynote Lecture: Prof. Nikolaos Michailidis, Aristotle University of Thessaloniki</b> Thermomechanical and corrosion fatigue of high temperature Shape Memory Alloys			
09:30 am-09:40 am	<b>Coffee Break</b>			
09:40 am-11:40 am	<p><b><u>SESSION 29</u></b></p> <p><b>Manufacturing Techniques and processes</b></p> <p><b>Chairperson: Prof. Joel Andersson, University West</b></p>	<p><b><u>SESSION 30</u></b></p> <p><b>Kinetic and thermal deposition for additive manufacturing and coating</b></p> <p><b>Chairpersons: Dr. Sara Bagherifard – Prof. Maro Guagliano Mario – Prof. Filippo Berto, Politecnico di Milano - Politecnico di Milano - NTNU Trondheim</b></p>	<p><b><u>SESSION 31</u></b></p> <p><b>Surface engineering, coatings and adhesives</b></p> <p><b>Chairperson: Prof. Vasileios Koutsos, University of Edinburgh</b></p>	<p><b><u>SESSION 32</u></b></p> <p><b>Assessment of fatigue behavior and crack growth analysis</b></p> <p><b>Chairperson: Prof. Paulo de Castro, University of Porto</b></p>
09:40 am-10:00 am	<p>Casting and solidification of magnesium alloys</p> <p><b>Yuanding Huang, 1,</b></p> <p>1 Helmholtz-Zentrum Geesthacht</p>	<p>Embedded Structural Health Monitoring through Surface Acoustic Wave Inspection Deployed on Capillaries Integrated in Additively Manufactured Components</p> <p><b>Michaël Hinderdael, 1,</b></p> <p>1 Vrije Universiteit Brussel</p>	<p>The contact mechanics and switchable adhesive properties of polyelectrolyte brushes</p> <p><b>Mark Geoghegan, 1,</b></p> <p>1 Newcastle University</p> <p><b>INVITED TALK</b></p>	<p>Fatigue behaviour of a spring: a case study</p> <p><b>Nuno Graça, 1, Paulo de Castro, 1,</b></p> <p>1 Universidade Do Porto</p>
10:00 am-10:20 am	<p>Production and Characterization of dual scale Ti produced by powder metallurgy</p> <p><b>Tamás Mikó, 1, Ádám Angel, 1, Ferenc Kristály, 2, Zoltán Gácsi, 1,</b></p> <p>1 University Of Miskolc, Institute of Physical Metallurgy, Metalforming and Nanotechnology 2 University Of Miskolc, Institute of Mineralogy and Geology</p>	<p>Experimental investigation on flexural properties of FDM-processed Pet-G specimen using response surface methodology</p> <p>Nikolaos Fountas, 1, Ioannis Papantoniou, 2, John Kechagias, 3, Demetrios Manolakos, 2, <b>Nikolaos Vaxevanidis, 1,</b></p> <p>1 School Of Pedagogical And Technological Education (ASPETE) 2 National Technical University of Athens (NTUA) 3 University of Thessaly</p>	<p>An overview on nanoparticle reinforced lightweight metal composites</p> <p><b>Qianqian Li, 1, Nur Syazana Natasha Binti Hisham, 1, Zhuocheng Xu, 1, Samaneh Nasiri, 2, Milo Shaffer, 1, Michael Zaiser, 2,</b></p> <p>1 Imperial College London 2 University of Erlangen-Nuremberg</p> <p><b>INVITED TALK</b></p>	<p>Fatigue strength evaluation of a 13%Cr supermartensitic stainless steel by the thermographic method</p> <p><b>Sérgio Souto Maior Tavares, 1, Paulo-Pedro Kenedi, 2, Bruna Abib dos Santos, 2, Hugo Ribeiro da Igreja, 1, Brigida Bastos de Almeida, 1,</b></p> <p>1 Universidade Federal Fluminense 2 Centro Federal de Educação Tecnológica - CEFET/RJ</p>

<p>10:20 am- 10:40 am</p>	<p>Investigation of Penetrator Defect Formation during High Frequency Induction Welding in Pipeline steels</p> <p>Christos Sofras, 1,2, <b>Marianthi Bouzouni</b> ,3, Nikos Voudouris, 4, Spyros Papaefthymiou, 5,</p> <p>1 Laboratory for Neutron Scattering and Imaging (LNS), Paul Scherrer Institute 2 Ecole Polytechnique Federale de Lausanne 3 ELKEME S.A. 4 CPW S.A. 5 National Technical University of Athens</p>	<p>Influence of the material volume of a lattice structure on bending properties</p> <p><b>Katarina Monkova</b>, 1,2, Peter Pavol Monka ,1,2, Oldrich Suba, 2, Milan Zaludek, 2, Drazan Kozak ,3, Jan Vanca, 1,</p> <p>1 TU Kosice, Faculty of manufacturing technologies 2 UTB in Zlin, Faculty of technology 3 Josip Juraj Strossmayer University of Osijek</p>	<p>Polymers on surfaces: structure, wetting and adhesion at the nanoscale</p> <p><b>Vasileios Koutsos</b>, 1,</p> <p>1 The University of Edinburgh</p>	<p>Investigation on the influence of different testing methods and parameters on the determination of fatigue crack growth data</p> <p><b>Larissa Mara Batista Duarte</b>, 1, Uwe Zerbst ,1, Mauro Madia, 1,</p> <p>1 Bundesanstalt für Materialforschung und -prüfung</p>
<p>10:40 am- 11:00 am</p>	<p>Experimental and Numerical Analysis of Bimetallic Back-Extrusion Process</p> <p><b>Hasan Mulki</b>, 1, Fethi Abbassi ,1,</p> <p>1 College Of Engineering And Technology, American University Of Middle East, Kuwait</p>	<p>Effects of shot peening on tribological and fatigue behaviour of LPBF AlSi10Mg</p> <p><b>E. Maleki</b>, 1, Sara Bagherifard ,1, O. Unal, 2, Mario Guagliano, 1,</p> <p>1 Department of Mechanical Engineering, Politecnico di Milano, Milano 2 Department of Mechanical Engineering, Karabuk University, Karabuk</p>	<p>Investigation of hardness behavior after carburizing and hardening of 15CrNi6 steel</p> <p>Arsenios Dragatsis,1, Leonidas Fragkos-Livanios,1, Dimitris G. Papageorgiou,1, <b>Carmen Medrea</b>,1</p> <p>1 University Of West Attica</p>	<p>Estimation of fatigue life for clinched joints with the Local Strain Approach incorporating the impact of cold forming to cyclic material properties</p> <p><b>Boris Spak</b>, 1, Maximilian Schlicht ,2, Markus Kästner, 1, Melanie Fiedler, 1, Pascal Froitzheim ,2, Wilko Flügge, 2,</p> <p>1 Chair of Computational and Experimental Solid Mechanics, TU Dresden 2 Fraunhofer Institute for Large Structures in Production Engineering IGP</p>
<p>11:00 am- 11:20 am</p>	<p>Fabrication aspects of hot structural aero engine components</p> <p><b>Joel Andersson</b></p> <p>University West</p> <p><b>INVITED TALK</b></p>	<p>Numerical Prediction of Residual Stress in Cold Spray Deposition for Additive Manufacturing and Repair in Tool Industries</p> <p><b>Amir Ardeshiri Lordejani</b>, 1, Sara Bagherifard ,1, Mario Guagliano, 1,</p> <p>1 Department of Mechanical Engineering, Politecnico di Milano</p>		<p>Fatigue life evaluation of functional elements</p> <p><b>David Kühne</b>, 1, Christian Denkert ,1, Melanie Fiedler, 1, Dietmar Süße, 1, Markus Kästner ,1, Maik Dörre, 1, Ralf Glienke ,1,</p> <p>1 TU Dresden</p>

11:20 am-11:40 am				
11:40 am-11:50 am	<b>Coffee Break</b>			
11:50 am-12:20 pm	<b>Keynote Lecture: Prof. Xiaosu Yi, National Key Laboratory of Advanced Composites, AVIC Composites Center</b> How to Integrate Functionality into Structural Composites for Multifunctional Aerospace Application			
12:20 pm-13:20 pm	<b>LUNCH</b>			
13:20 pm-15:00 pm	<p><b><u>SESSION 33</u></b></p> <p><b>Mini Workshop on Transition from traditional to ecofriendly structural materials: a multidisciplinary emerging issue</b></p> <p><b>Chairperson: Dr. Claudio Mingazzini, ENEA</b></p>	<p><b><u>SESSION 34</u></b></p> <p><b>Structural Integrity of materials processed by additive manufacturing technologies</b></p> <p><b>Chairpersons: Dr. Amin Azar - Dr. Spyros Diplas, Stiftelsen for industriell og teknisk forskning (SINTEF)</b></p>	<p><b><u>SESSION 35</u></b></p> <p><b>Mini Workshop on Virtual and experimental testing methods for structural assessment of composite structures</b></p> <p><b>Chairperson: Dr. Angelos Filippatos, Technische Universität Dresden</b></p>	<p><b><u>SESSION 36</u></b></p> <p><b>Damage and failure investigation of structural components</b></p> <p><b>Chairperson: Dr. Anna Zervaki, University of Thessaly</b></p>
13:20 pm-13:40 pm	<p>A holistic assessment of a stiffened panel production using a novel thermoplastic material and implementing the induction welding process</p> <p><b>Christos Katsiropoulos, 1, Spiros Pantelakis ,1, Francesca Feline, 2, Giuseppe Buccoliero, 2, Silvio Pappada ,2,</b></p> <p>1 LTSM/University of Patras 2 CETMA - Advanced Materials and Processes Consulting Department</p>	<p>Structural and magnetic performance of soft magnets based on FeCoNiMnAl additively manufactured high entropy alloys</p> <p><b>Amin Azar, 1, Matthias Schrade ,1, Joachim Graff, 1, Espen Flage-Larsen, 1, Ole Martin Løvvik ,1, Branson Belle, 1, Patricia Carvalho ,1, Spyros Diplas ,1,</b></p> <p>1 Sintef</p>	<p>Design approach for the development of a digital twin of a generic hybrid lightweight structure</p> <p><b>Angelos Filippatos, 1, Moritz Kutzt ,1, Minh Nguyen, 1, Tobias Ryll, 1, Maik Gude ,1,</b></p> <p>1 Technische Universität Dresden, Institute of Lightweight Engineering and Polymer Technology</p>	<p>Practical Experience with the Methodology of Prediction of Corrosion-Fatigue Failures of Steam Turbine Rotating Blades</p> <p><b>Josef Kasl, 1, Jan Lazar ,1, Miroslava Matějová, 1,</b></p> <p>1 Research And Testing Institute Pilsen</p>

<p>13:40 pm - 14:00 pm</p>	<p>Design of a bonnet of a sport vehicle realized with an innovative recyclable Polymeric Matrix Composite and Virtual characterization of the related structural sandwiches reinforce.</p> <p><b>Matteo Basso</b>, 1, Claudio Mingazzini ,2, Matteo Scafè, 2, Enrico Leoni, 2, Enrico Benco ,3, Rafael Garcia-Etxabe, 4, Koldo Gondra ,4, Daniele Pullini ,1,</p> <p>1 STELLANTIS-Materials Engineering Methods &amp; Tools (CRF) 2 ENEA SSPT-PROMAS-TEMAF 3 GS4C srl. 4 GAIKER Technology Centre, Basque Research and Technology Alliance (BRTA)</p>	<p>Additively Manufactured FeCoNi(AlMn)<sub>x</sub> High Entropy Alloys: Mechanical and Magnetic Properties Investigation</p> <p><b>Anthoula Poulia</b>, 1, Amin Shahrestani Azar ,2, Calliope Bazioti, 1, Anette Eleonora Gunnæs , 1, Pavlo Mikheenko1, Spyros Diplas, 2,</p> <p>1 University Of Oslo 2 SINTEF Industry</p>	<p>Comparison and combination of dynamic optical measurement systems for in-situ structural assessment of high-speed composite rotors</p> <p><b>Angelos Filippatos</b>, 1, Julian Lich ,2, Tino Wollmann, 1, Christian Schnabel, 3, Robert Kuschmierz ,2, Edmund Koch, 3, Jürgen Czarske ,2, Maik Gude ,1,</p> <p>1 Technische Universität Dresden, Institute of Lightweight Engineering and Polymer Technology (ILK) 2 Technische Universität Dresden, Laboratory for Measurement and Sensor System Techniques (MST) 3 Technische Universität Dresden, Faculty of Medicine, Clinical Sensing and Monitoring (KSM)</p>	<p>Damage and failure evaluation of diamond wire for multi-wire sawing of hard stone blocks through modeling and numerical simulation</p> <p><b>Daniel Gomes</b>, 1, Andreia Araujo ,1, Rui Marques, 1, Raquel M. Santos, 1,2,</p> <p>1 Institute of Science and Innovation in Mechanical and Industrial Engineering (INEGI), Materials and Composite Structures unit 2 Associated Laboratory of Energy, Transports and Aeronautics (LAETA), Faculty of Engineering, Porto University</p>
<p>14:00 pm- 14:20 pm</p>	<p>Development of recyclable Fiber Metal Laminates (FMLs), their mechanical characterization and FE modelling, aiming at application to structural aeronautic components</p> <p><b>Stefano Bassi</b>, 1, Matteo Scafè ,2, Enrico Leoni, 2, Claudio Mingazzini, 2, Bhatia Narayan ,3, Andrea Rossi, 3,</p> <p>1 CNR ISTE 2 ENEA SSPT-PROMAS-TEMAF 3 Consorzio MUSP</p>	<p>Advanced Scanning Transmission Electron Microscopy investigations of FeCoNi(AlMn)<sub>x</sub> high-entropy alloy: nanoscale structure and impact on magnetic properties</p> <p><b>Calliope Bazioti</b>, 1, Anthoula Poulia ,1, Ole Martin Løvvik, 2, Amin Azar, 2, Pavlo Mikheenko1, Spyros Diplas, 2, Anette Eleonora Gunnæs ,1,</p> <p>1 University of Oslo 2 SINTEF</p>	<p>Verification and application of bird strike analysis for the design of high-speed helicopter composite cowlings</p> <p><b>Radek Doubrava</b>, 1, Martin Oberthor ,1, Petr Bělský, 1, Bohuslav Cabrnach, 1,</p> <p>1 Výzkumný a zkušební letecký ústav, a.s.</p>	<p>The effect of ball milling on the mechanical properties of Mo-Cu alloys reinforced with Al<sub>2</sub>O<sub>3</sub> particles</p> <p><b>Dániel Pethő</b>, 1, Tamás Kurusta ,2, Tamás Mikó, 1, Ferenc Kristály, 3, Zoltán Gácsi ,1,</p> <p>1 University of Miskolc, Institute of Physical Metallurgy, Metalforming and Nanotechnology 2 Hungary, University of Miskolc, Institute of Raw Material Preparation and Environmental Processing 3 Hungary, University of Miskolc, Institute of Mineralogy and Geology</p>



14:20 pm - 14:40 pm	<p>Characterisations in expected working environments of recyclable fire resistant materials</p> <p>Giulia De Aloysio, 1, Mattia Morganti ,1, Luca Laghi, 1, Matteo Scafè, 2, Enrico Leoni ,2, <b>Claudio Mingazzini</b>, 2, Stefano Bassi ,3,</p> <p>1 CertiMaC 2 ENEA SSPT-PROMAS-TEMAF 3 ISTECCNR</p>	<p>A novel approach for alloy design and composition screening for additive manufacturing</p> <p>Magnus Reiersen, 1, Spyros Diplas ,2, Anette Gunnæs, 1, Mohammed M'hamdi, 2, Qiang Du ,2, <b>Amin S. Azar</b>, 2,</p> <p>1 University of Oslo (UiO) 2 SINTEF Industry</p>	<p>Experimental testing of polyether ether ketone (PEEK) under vibration-induced heating</p> <p><b>Michael Kucher</b>, 1, Martin Dannemann ,1, Niels Modler, 1,</p> <p>1 Institute Of Lightweight Engineering And Polymer Technology (ILK), Technische Universität Dresden</p>	
14:40 pm- 15:00 pm	<p>Design and characterization of lightweight green composites obtained from natural resources for high-performance use in transport structures</p> <p><b>Gianluca Viscusi</b>, 1,</p> <p>1 University Of Salerno</p>	<p>Thermomechanical and microstructural simulation of the AM process of 316L austenitic stainless steel</p> <p><b>Marios Sotiriou</b>,1, Ioanna Papadioti,1, John Aristeidakis,1, Margianna Tzini,1, Nick Aravas,1, Gregory Haidemenopoulos,1</p> <p>1 University of Thessaly</p>		
15:00 pm - 15:10 pm	<b>Coffee Break</b>			
15:10 pm- 16:50 pm	<p><b>SESSION 37</b></p> <p><b>Mini Workshop on Transition from traditional to ecofriendly structural materials: a multidisciplinary emerging issue</b></p> <p><b>Chairperson: Dr. Claudio Mingazzini, ENEA</b></p>	<p><b>SESSION 38</b></p> <p><b>Surface Engineering against Failure</b></p> <p><b>Chairperson: Prof. Mario Guagliano, Politecnico di Milano</b></p>	<p><b>SESSION 39</b></p> <p><b>Mini Workshop on Virtual and experimental testing methods for structural assessment of composite structures</b></p> <p><b>Chairperson: Dr. Angelos Filippatos, Technische Universität Dresden</b></p> <p><b>CONTINUED</b></p>	<p><b>SESSION 40</b></p> <p><b>Mechanical behavior and damage of reinforcing steel bars</b></p> <p><b>Chairperson: Dr. Eleni Kamoutsi, University of Thessaly</b></p>

<p>15:10 pm- 15:30 pm</p>	<p>Investigation of Thermophysical and Thermomechanical Properties of Highly Porous SiC for Solar Receivers in CSP Plants</p> <p><b>Giulia De Aloysio</b>, 1, Luca Laghi ,1, Giuseppe Magnani, 2, Claudio Mingazzini, 2, Antonio Rinaldi ,3, Matteo Scafè, 2, Paride Fabbri ,2, Inmaculada Cañadas Martínez ,4, Victor Manuel Candelario Leal ,5</p> <p>1 CertiMaC 2 ENEA SSPT-PROMAS-TEMAF 3 ENEA SSPT 4 Solar Concentrating Systems Unit CIEMAT-Plataforma Solar de Almería 5 LiqTech Ceramics A/S</p>	<p>Modern Tribological Trends in the Rolling-elements Bearing's Industry in Terms of Materials, Heat Treatments &amp; Coatings</p> <p><b>Pierre Dupont</b>, 1,</p> <p>1 ASM International - Failure Analysis Society</p>	<p>Experimental-numerical validation of the curing reaction of snap-cure polymer systems for component families of small batch sizes and high diversity</p> <p><b>Rafal Stanik</b>, 1, Sirko Geller ,1, Michael Müller, 1, Albert Langkamp, 1, Maik Gude ,1, Andreas Gruhl, 2, Henrik Antonowitz ,2, Alexander Knorr ,3,</p> <p>1 Technische Universität Dresden 2 Leichtbau-Zentrum Sachsen GmbH 3 Elbe Flugzeugwerke GmbH</p>	<p>Preliminary examination of a tool used for sectioning steel reinforced concrete pillars</p> <p><b>Vassilis Belimpasakis</b>,1, Dimitrios Papageorgiou,1, Carmen Medrea,1</p> <p>1 University of West Attica</p>
<p>15:30 pm - 15:50 pm</p>	<p>Nanostructured inorganic polymer matrices for high temperature resistant fiber reinforced composites</p> <p><b>Annalisa Natali Murri</b>, 1, Elena Landi ,1, Emanuele Apollo, 2, Cristiano Bordignon, 2, Claudio Mingazzini ,3, Matteo Scafè, 3, Valentina Medri ,1,</p> <p>1 CNR-ISTEC 2 Aeronautical Service S.r.l. 3 ENEA-TEMAF</p> <p><b>INVITED TALK</b></p>	<p>Alumina-Forming Austenitic (AFA) steels and aluminium-based coating on 15-15 Ti steel to limit mechanical damage in presence of liquid lead-bismuth eutectic and liquid lead.</p> <p><b>Ingrid Proriot Serre</b>, 1, Ines Ponsot ,1, Jean-Bernard Vogt, 1,</p> <p>1 Univ. Lille, CNRS, INRAE, Centrale Lille, UMR 8207—UMET—Unité Matériaux Et Transformations</p>	<p>System reliability as a key for ecological and sustainable products</p> <p>Leonhard Heindel, 1, Peter Hantschke ,1, Gordon Just, 1, Karsten Tittmann, 1, <b>Ilja Koch</b> ,1, Maik Gude, 1, Markus Kästner ,1,</p> <p>1 Technische Universität Dresden</p>	<p>The Influence of Concrete Cracks on the Chloride Penetration and Corrosion Damage of RC Elements in the Short Term</p> <p><b>George Konstantopoulos</b>, 1, Charis Alk. Apostolopoulos ,1, Vagelis G. Papadakis, 2,</p> <p>1 Department of Mechanical Engineering and Aeronautics, University of Patras 2 Department of Environmental Engineering, University of Patras</p>
<p>15:50 pm - 16:10 pm</p>	<p>A holistic End-of-Life (EoL) Index for the quantitative impact assessment of CFRP waste recycling techniques</p> <p><b>Dionysios Markatos</b>,1, Christos Katsiropoulos,1, Spiros Pantelakis,1</p> <p>1 University of Patras</p>	<p>How can we successfully study tribological failures on the lab-scale?</p> <p><b>Emmanuel Georgiou</b>, 1, Dirk Drees ,1, Tom Van Der Donck, 2, Angelos Koutsomichalis, 3, Jean-Pierre Celis ,2,</p> <p>1 Falex Tribology 2 KU Leuven 3 Hellenic Air-Force Academy</p>	<p>Numerical Evaluations of Strain Field Modification Induced by Production Flaws in Loaded Composite Structures</p> <p><b>Jan Raska</b>, 1, Jarmil Vlach ,1, Jan Horñas, 1,</p> <p>1 Czech Aerospace Research Centre - VZLU</p>	<p>Mechanical behavior of steel reinforcement before and after flame spray coating in marine environment</p> <p><b>Konstantinos Koulouris</b>, 1, Maria Basdeki ,1, Charis Apostolopoulos, 1,</p> <p>1 Laboratory of Technology and Strength of Materials, University Of Patras</p>

16:10 pm - 16:30 pm		<p>Numerical Modeling of the Low Cycle Fatigue: Effect of Manufacturing Imperfections Caused by Machining Process</p> <p><b>Ikram Abarkan, 1, Abdellatif Khamlichi<sup>2</sup>, Rabee Shamass, 3,</b></p> <p>1 Department of Physics, Faculty of Sciences, Abdelmalek Essaadi University  2 Department of Industrial and Civil Sciences and Technologies, National School of Applied Sciences, Abdelmalek Essaadi University  3 Division of Civil and Building Services Engineering, School of Build Environment and Architecture, London South Bank University</p>	<p>Modelling and analysis of undulations and their influence on fiber-parallel compressive strength in unidirectional fiber-reinforced composites</p> <p><b>Tom Blümel, 1,</b></p> <p>1 Technische Universität Berlin</p>	
16:30 pm - 16:50 pm		<p>Investigation on the interfacial properties the CNF/CNT sized carbon fibre reinforced composite using a push-out method via a nano-indentation technique</p> <p><b>Zhenxue Zhang, 1, Xiaoying Li, 1, Hanshan Dong, 1, Simon Jestin, 2, Aikaterini Flora Trompeta, 3, Andreia Araújo, 4, Costas Charitidis, 3,</b></p> <p>1 The University Of Birmingham  2 ADERA-CANOE  3 National Technical University of Athens</p>	<p>Reliability Design of Mechanical Systems Subject to Repetitive Stresses</p> <p><b>Seongwoo Woo, 1,</b></p> <p>1 Addis Ababa Science And Technology University</p>	

		4 INEGI		
16:50 pm 17:00 pm	Concluding remarks and closing of the Conference			
17:00 pm	End of Conference			

**POSTER SESSION**

No	Title
1	Quality improvement through process and learning approach in failure investigation and root-cause analysis <b>George Pantazopoulos</b>
2	Microstructure properties relationship in low carbon microalloyed steel bars Alexandros Antonopoulos, Athanasios Vazdirvanidis, Theofani Tzeveleku, <b>George Pantazopoulos</b> , Panagiotis Sismanis, Professor Spyros Papaefthymiou
3	Hardness behavior of W. Nr. 1.7709 steel, oil quenched and tempered between 475oC and 575oC John Mantzoukas, Dimitris G. Papageorgiou, <b>Carmen Medrea</b> , Constantinos Stergiou
4	Assessment and rehabilitation of a deteriorated heat pipeline overpass <b>Marta Lutomirska</b> , Tomasz Lutomirski
5	Repair of local damages to precast prestressed slab elements at a parking garage <b>Marta Lutomirska</b> , Tomasz Lutomirski, Artur Sakowski
6	Historical buildings prevention of failure by technical condition testing and revitalization <b>Janusz Krentowski</b> , Piotr Knyziak
7	Methodology of testing and strengthening endangered roof structures by suspending <b>Janusz Krentowski</b> , Tadeusz Chyzy, Piotr Knyziak, Robert Kowalski
8	Preventing damage to the reinforced concrete cylindrical shells due to temperature load <b>Romuald Szeląg</b>
9	Monitoring of large-panel residential buildings elevations for prevention of failure <b>Piotr Knyziak</b> , Marcin Kanoniczak, Janusz Krentowski
10	Disproportionately wide range of fire in a RC building during construction stage <b>Piotr Knyziak</b> , Robert Kowalski, Michał Głowacki, Janusz Krentowski

11	Consequences of excessive deformation of structural elements in large-panel buildings Janusz R. Krentowski, <b>Monika Mackiewicz</b> , Piotr Knyziak, Maciej Wardach
12	Methods of condition assessing of incomplete or temporarily out of service facilities <b>Maciej Wardach</b> , Janusz Krentowski, Monika Mackiewicz
13	Experimental and computational verification of precast large panel wall stiffness <b>Maciej Wardach</b> , Janusz Krentowski, Monika Mackiewicz
14	Identification of defects in the eighteenth-century buildings in terms of their revitalization <b>Monika Mackiewicz</b> , Janusz Ryszard Krentowski, Kamil Zimiński
15	Development of a Machine Learning Approach to Estimate In Vivo Properties of the Aorta and Better Understand Aortic Shape Variation <b>Janet Kang</b> , Kameel Khabaz, Karen Yuan, Nhung Nguyen, Luka Pocivavsek
16	Non-destructive Inspection of Composite Aileron during Fatigue Test <b>Michal Podstawka</b> , Vladimir Snop, Kristyna Kutiova
17	Propagation of the destruction stage of the ash tank structure during operation <b>Romuald Szelağ</b>
18	Structural Integrity and Thermomechanical Response of Fe <sub>3</sub> O <sub>4</sub> /Carbon Nanotubes/Epoxy Resin Hybrid Nanocomposites <b>Sevasti Gioti</b> , Aikaterini Sanida, Anastasios C. Patsidis, Georgios C. Psarras
19	Epoxy Based Composites for Electromagnetic Applications: Probing their Mechanical Properties <b>Sevasti Gioti</b> , Garoufalia Tzaferi, G.-P. Tsouvaltzi, A.C. Patsidis, G.C. Psarras
20	Effect of Impact Modifiers on Strength and Fracture Toughness of CFRPs <b>Semitekolos D</b> , Asimakopoulos I, Kontiza A, Dragatogiannis D, Charitidis C

21 Evaluation of the effect of uncertainty in the strengths of composite materials on the efficiency of failure criteria using interval analysis

**Konstantinos Tserpes**, Dimitris Sotiropoulos