

Preliminary Program

DAY 1 | Wednesday, June 21st, 2023

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| 09:00-09:15 | Opening Ceremony – Welcome by the Chairmen of the Conference | | | | |
| 09:15-09:45 | Keynote Lecture: Innovative surface engineering to combat failure Prof. Hanshan Dong University of Birmingham, UK Chair: Prof. Michael Vormwald & Prof. Spiros Pantelakis ICEAF VII co-Chairmen | | | | |
| 09:45-10:15 | Keynote Lecture: Effect of microstructure on the electrochemical corrosion behaviour of advanced cement coatings Prof. Angeliki Lekatou University of Ioannina, Greece Chair: Prof. Michael Vormwald & Prof. Spiros Pantelakis ICEAF VII co-Chairmen | | | | |
| 10:15-10:30 | Coffee Break | | | | |
| 10:30-12:50 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
| Session: | Guidelines against failure (PART I) | Alloy and microstructure design of AHSS to improve their performance (PART I) | Advancements in Understanding and Improving Iron-based and Steel Mechanical System Durability and Performance (PART I) | Joining with predictable Damage Tolerance | Advanced and AI-enhanced nanomechanics for materials assessment and prognostics |
| Chair: | Prof. Michael Vormwald | Dr. Alexandros Banis, Dr. Aniruddha Dutta, Prof. Carlo Mapelli, Dr. Dirk Ponge, Prof. Roumen Petrov, Dr. Ilkhat Sabirov | Prof. Robert Basan | Dr. Ronny Sachse | Prof. Costas Charitidis |
| 10:30-10:50 | FKM-Guideline "Analytical Strength Assessment" – Overview and actual developments Roland Rennert, Michael Vormwald, Alfons Esderts | Direct Quenching and Partitioning for Novel Tough Ultrahigh Strength Steels Mahesh Samani (invited), Sumit Ghosh, Pekka Kantanen, David Porter, Jukka Kämi | A study of methods for fatigue parameters and behavior estimation of quenched and tempered steels Robert Basan, Tea Marohnić, Ela Marković, Dario Ilijčić | Introduction to a High Fidelity Simulation Framework for the Development of Damage Tolerant Bonded Joints Ronny Sachse, Marco Hoffmann, Thomas Körwien | Mechanical spectroscopy: Machine learning and high speed nanoindentation for high throughput material evaluation Douglas Stauffer, Bernard Becker, Eric Hintsala, Benjamin Stadnick, Ude Hangan |
| 10:50-11:10 | | Texture and anisotropy investigation on austenitic lightweight steel Giacomo Villa, Davide Mombelli, Silvia Barella, Andrea Gruttadauria, Carlo Mapelli | Influence of residual stresses caused by shrink fit on strength of hollow shafts Luc Duc Le, Lukas Suchy, Alexander Hasse | A mapping methodology for damage transfer between different numerical modules in a virtual testing chain of bonded CFRP joints Patrick Erdmann | NAVMAT: An AI-powered pathway to knowledge sharing on material failures Nikolaos Melanitis, George Giannakopoulos, Konstantinos Stamatakis |
| 11:10-11:30 | A damage parameter for a critical plane approach for fatigue strength assessment within the FKM-Guideline for non-proportional loading Carl Fallgren, Michael Vormwald, Thomas Beier | GTAW effect on austenitic lightweight steel's microstructure and mechanical properties Giacomo Villa, Davide Mombelli, Silvia Barella, Andrea Gruttadauria, Carlo Mapelli | Failure of Looper Roll Sleeves in Rebar Rolling Mill: An Insight Gulshan Kumar, Basavaraj P Kalinganavar | A numerical simulation method for impact damage in adhesively bonded joints Mirjam Bastek, Peter Middendorf | A method for the correlation of microstructure with nanomechanical properties in Advanced High Strength Steels for automotive applications Anastasia Alexandratou, Georgios Konstantopoulos, Athanasios Katsavrias, Federico Bruno, Luca Belforte, Edoardo Rossi, Saqib Rashid, Marco Sebastiani, Costas Charitidis |
| 11:30-11:50 | Fatigue strength assessment of preloaded cross-toothed flange connections based on the FKM guidelines Hans Härtel, Carsten Ulrich, Melanie Fiedler, Markus Kästner, Berthold Schleicht | Study of edge cracking during hot rolling of lightweight Fe-Mn-Al-C steels using high-speed camera Aniruddha Dutta, Lode Duprez, Tom Waterschoot | Fatigue life estimation of corroded welded steel joint using probabilistic approach Darko Pastorcic, Goran Vukelic, Zeljko Bozic, | Crack growth simulation of bonded joints under mixed mode loading Lukas Münch, Philip Rose, Peter Middendorf, Markus Linke | Phase mapping and identification of complex multiphase CuWCrTi material using Nanoindentation testing and Nanodiffraction mapping Athanasios Katsavrias, Anastasia Alexandratou, Georgios Konstantopoulos, Ennio Caprio, Tobias Schull, Rostislav Danieľ, Michal Zitek, Costas Charitidis |
| 11:50-12:10 | Fatigue strength assessment of steel welded joints and components: A comparison of different mechanical engineering guidelines and standards Melanie Fiedler, Roland Rennert, Markus Kästner | The effect of aging treatment on the microstructure and mechanical properties of Fe-Mn-Al-C lightweight steels on macro- and microscale Andrea Gomez-Fernandez, Ilkhat Sabirov, Miguel Monclús, Manuel Avella, Aniruddha Dutta, Jan Mikel Molino-Aldareguia | Fatigue strength analysis of thin steel plates Vladimir Chmelka, Marián Semeš | Investigation of the influence of design parameters onto the cracked lap shear specimen Philip Rose, Markus Linke, David Busquets | Nanomechanical testing of printed nanolayers for application in flexible organic printed electronics devices Spyros Kassaravitis, Theodora Kalampalki, Argiris Laskarakis, Christos Kapnopoulos, Vasilis Kyriazopoulos, Volha Heben, Alexandros Pallagkas, Alexandros Zachariadis, Thomas Katsavrias, Georgios Konstantopoulos, Evangelos Mekeridis, Costas Charitidis, Stergios Logothetidis |
| 12:10-12:30 | Suggestions for Correcting the Stress Parallel to the Weld Seam Wolfgang Feickert, Tim Kirchhoff, Teresa Schiltzer | The effect of κ-carbides on the deformation of Fe-Mn-Al-C steel after aging Alexandros Banis, Andrea Gomez, Ilkhat Sabirov, Roumen Petrov | Improving the Fatigue Design of Mechanical Systems such as Refrigerator Seongwoo Woo | Crack tracking on element level for fatigue calculations of adhesively bonded joints Andreas Wulf, Christof Nagel, Olaf Hesebeck | Study of the material engineering properties of high-density poly(ethylene)/perlite nanocomposite materials Yousef Murtaqa, Lubomir Lapcik, Assoc. Barbara Lapcikova, |
| 12:30-12:50 | Development of a software for fatigue strength assessment of welded joints Heinz Thomas Beier, Carl Fallgren, Michael Vormwald, Jörg Baumgartner, Markus Faß, Tobias Melz, Tim Kirchhoff, Teresa Schiltzer, Filip Bös, Wolfgang Feickert | Understanding Mn and C segregation at the phase boundary in medium Mn steel Faisal Waqar Syed, Binhan Sun, Dirk Ponge, Dierk Raabe | Influence of Asymmetric Fillet Geometry on Spur Gear Fatigue Life Niko Trumbić, Krešimir Vučković, Ivan Čular, Ivica Galić | Static residual strength analysis of fibre composite bonded joints after impact and fatigue using mesoscale progressive damage analysis Oliver Völkerink, Martin Schollerer, Jens Kosmann, Dirk Holzhüter, Christian Hühner | Correlation between structure and mechanical properties in a-quartz single crystal by nanoindentation and Confocal Raman microscopy Esther Enriquez Pérez, Adolfo Del Campo, Julián Jiménez Reina, Georgios Konstantopoulos, Costas Charitidis, José Francisco Fernández Lozano |
| 12:50-13:50 | Light Lunch | | | | |

| 13:50-16:10 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
|-------------|---|--|--|---|--|
| Session: | Guidelines against failure (PART II) | Alloy and microstructure design of AHSS to improve their performance (PART II) | Advancements in Understanding and Improving Iron-based and Steel Mechanical System Durability and Performance (PART II) | Towards Manufacturing Defects Reduction in Composite Structures | Structural Integrity and Processing Challenges of Additively Manufactured Materials |
| Chair: | Dr. Melanie Fiedler | Dr. Alexandros Banis, Dr. Aniruddha Dutta, Prof. Carlo Mapeffi, Dr. Dirk Ponge, Prof. Roumen Petrov, Dr. Ilchat Sabirov | Dr. Anna Zervaki | Prof. Antonio Maria Di Ilio & Prof. Antonios Stamopoulos | Dr. Anthoula Poulia & Dr. Spyros Diplas |
| 13:50-14:10 | PRACTICAL FATIGUE STRENGTH DIAGRAMS FOR COMPRESSION SPRINGS BASED ON THE FKM-GUIDELINE "ANALYTIC STRENGTH ASSESSMENT FOR SPRINGS" <i>Martin Petrich, Ulf Kletzin</i> | Fracture characterization of structural steel S690Q by using mini-CT specimens <i>Marcos Sánchez, Sergio Cicero, Borja Arroyo</i> | Fatigue behaviour of advanced high strength steels <i>Sierra-Saraluce A., Gomez A., Banis A., Petrov R., Molina-Aldareguia J., Dutta A., Sabirov I.</i> | Improving the mechanical properties of Glass Reinforced Plastics by slight mechanical compression <i>Isidoros Iakovidis, Sotiria Dimitrellou, George Orfanos, Michael Vlachogiannis</i> | Magnetic High Entropy Alloys for Renewable Electricity Applications: A Comparative Study of Two Fabrication Methods <i>Anthoula Poulia, Amin Azar, Calliope Bazioti, Aleksander Larsen, Joachim Graff, Brandon Belle, Patricia Almeida Carvalho, Irena Gejdos Janotova, Pavlo Mikheenko, Anette Eleonora Gunnars, Spyridon Diplas</i> |
| 14:10-14:30 | Investigations on permissible plastic strains using the example of feather key connections <i>Benjamin Muhammedji, Alexander Hasse, Lukáš Suchý</i> | Distribution of residual stresses at welding seams performed at S235 and S355 <i>Eckehard Müller, Thomas Hermann</i> | Phase field modelling of low cycle fatigue in the framework of non-conventional thermodynamics <i>Aris Tsakmakis, Michael Vormwald</i> | Optimization of the cupro-nickel and graphene co-deposition process based on the fracture toughness characteristics. <i>Gabriele Balocco, Daniel Salvi, Antonios Stamopoulos, Nadia Ucciardello</i> | Phase-separated properties based on the multi-technique nanomechanical characterisation methodologies of ferrite and austenite in 2205 duplex and 2507 super duplex stainless steel produced via Laser Powder Bed Fusion Additive Manufacturing <i>Leonidas Gargalis, Leonidas Karavias, Elias Koumoulos, Joachim S. Graff, Spyros Diplas, Evangelia Karaki</i> |
| 14:30-14:50 | Fatigue Life Assessment of Automotive Leafsprings <i>Efstratios Giannakis, Georgios Savaidis, Roselita Fragoudakis, Alexandros Savaidis</i> | Microstructure, texture, and properties correlation of an Ultra-Fast Heat-treated commercial grade steel <i>Spyros Papaefthymiou, Alexandros Banis, Ilchat Sabirov, Dr.-ir. Roumen Petrov</i> | Performance Analysis of High-speed and High-pressure Non-contact Mechanical Seals under Typical Failure Conditions <i>Xiang Zhao, Ying Liu, Haoran Liao, Hongju Li, Anqi Huang, Zhurong Liang</i> | Investigation of Defects in Composite Structures produced with the Fused Filament Fabrication technique using X-Ray Computed Tomography <i>Antonios Stamopoulos, Francesco Pace, Jonathan Glinz, Sasha Senck</i> | Coupling of processing parameters to the columnar to equiaxed transition (CET) using a computationally low-cost model for process mapping and high-throughput screening of new alloys in additive manufacturing <i>Magnus Reiersen, Mohammed M'hamdi, Even Wilberg Hovig, Yanjun Li, Qiang Du, Kai Zhang</i> |
| 14:50-15:10 | Finite Element Modelling of Stress Shot Peening: Application on Leaf Springs <i>Christos Gakias, Roselita Fragoudakis, Georgios Savaidis</i> | Cold-forming of quenched and partitioned martensitic stainless steels: from Nakajima to simulation <i>Andres Sierra-Saraluce, Juan Luis de Pablos, Ali Smith, Marta Muratori, Ilchat Sabirov</i> | An interesting fatigue phenomenon in 316L stainless steel processed by surface mechanical rolling treatment <i>Yanyao Jiang, Seth Henderson, Shicong Liu, Xiaogui Wang</i> | Analysis of the effect of pressure cycle on the impregnation level of textile glass fiber reinforced thermoplastic composites for automotive applications <i>Antonios Stamopoulos, Antoniomaria Di Ilio, Gianluigi Creanti</i> | Optimization approach of DED process to fulfil the requirements on material properties and component performance of water jet impeller <i>Alaf Sagji, Siri Marthe Arbo, Sture Henning Sarli, Cato Dybdahl, Mette Lokna Nedreberg</i> |
| 15:10-15:30 | Robust calculation method for fretting fatigue strength assessment of steel, cast iron and aluminum contacts <i>Denny Knobber, Lukáš Suchý1, Alexander Hasse</i> | The deceit of steel strength ductility diagrams: A case study on high manganese lightweight steel. <i>Mohamed Elkot, Binhan Sun, Dirk Ponge, Dierk Raabe</i> | Microstructure evaluation of cryogenically hardened and tempered 5%Cr hot-work tool steel <i>Dimitrios Papageorgiou, Mrs Anthei Tsarouxa, Dionysios Mouzakis, Dimitrios Manolakas</i> | Identification of the Manufacturing Defects in Composite Structures produced with the Filament Winding technique with contact and non-contact inspection methods <i>Giulia D'Emilia, Antonella Gaspari, Antonios Stamopoulos, Emanuela Natale, Luciano Chiaminto</i> | Small fatigue crack growth properties of 316L SS fabricated with Laser-based Powder Bed Fusion process <i>Harvy Pshayos, George Lamepas, Efthymios Palatidis, Christos Sofras</i> |
| 15:30-15:50 | Failure of Buried GRFP Pipeline during Hydrostatic Testing <i>Souvik Das</i> | Improving resistance against hydrogen embrittlement of high strength medium Manganese TRIP steels by heterogeneous Mn distribution Part I: Hydrogen damage mechanisms in medium Mn TRIP steel <i>Dirk Ponge, Binhan Sun, Dierk Raabe</i> | On the high-cycle fatigue properties of a near-net shape manufactured high-nitrogen tool steel <i>Faezeh Javadzadeh Kalahroudi, Mohamed Sadek, Giulio Maistro, Krishnan Hariramabadrán Anantha, Thomas Mikael Grehk</i> | Mode I fracture toughness for hygrothermally-aged filament wound composites <i>Artur Pallet, Humberto Almeida Jr., Antonios Stamopoulos, Sandro Amico</i> | Exploring the Stress Concentration Factor in Additively Manufactured Materials: A Machine Learning Perspective on Surface Notches and Subsurface Defects <i>Amin S. Azar</i> |
| 15:50-16:10 | The low-cycle fatigue behavior of high-Manganese twinning-induced plasticity steels with various loading orientations <i>Di Song, Heinz Thomas Beier, Michael Vormwald</i> | Improving resistance against hydrogen embrittlement of high strength medium Manganese TRIP steels by heterogeneous Mn distribution Part II: New approach to increase the hydrogen embrittlement resistance of medium Mn TRIP steel <i>Dirk Ponge, Binhan Sun, Dierk Raabe</i> | Statistical analysis of parameters and behavior of quenched and tempered steels <i>Tea Marohnić, Robert Bosan, Ela Marković, Sunčana Smokvina Hanza</i> | A "mean object" approach to simulate manufacturing-induced porosity in filament-winded composites <i>Chaman Srivastava, Antonios Stamopoulos, Sotirios Grammatikos</i> | Experimental and statistical investigation on flexural properties of vertically oriented FDM fabricated PLA specimens <i>Nikolaos A. Fountas, Ioannis Papantoniou, John D. Kechagias, Dimitrios E. Manolakas, Nikolaos M. Vaxevanidis</i> |
| 16:10-16:20 | Coffee Break | | | | |

| 16:20-18:00 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
|------------------------|---|--|---|---|---|
| Session: Chair: | Guidelines against failure (PART III) Prof. Roland Rennert | Emerging Techniques for Characterizing and Analyzing Material Properties Prof. George Savaidis | Advances in Nanocarbon-Based Composites and Fibre-Reinforced Polymers: Characterization, Functionalization, and Applications Prof. Konstantinos Galiotis & Prof. Konstantinos Dassios | Modeling, Characterization, and Damage Detection and Estimation of Composite Materials Prof. Konstantinos Stamoulis | Advances in Materials Science and Engineering: Formability, Fatigue, and Failure Analysis of Aluminum and Alloy Systems in Industrial Applications Dr. Wolfgang von Bestenbostel |
| 16:20-16:40 | The FKM guideline nonlinear - strength assessment considering elastic-plastic material behaviour <i>Melanie Fiedler, Michael Wächter, Igor Varfolomeev, Alfons Esderts, Michael Vormwald</i> | Approach for the fatigue assessment of welds considering nonlinear elastic-plastic material behavior <i>Winnifred Rudorffer, Michael Wächter, Alfons Esderts</i> | Mechanics of carbon nanomembranes for water separation <i>Marinos Dimitropoulos, George Trakakis, Christos Pavlou, Christos Kostaras, Nikolaus Meyerbröcker, Raphael Gehra, Albert Schrieders, Costas Galiotis, Konstantinos Dassios</i> | Design of LSTM Neural Networks using Bayesian Optimization for Estimation of Damage Evolution in Composite Laminates <i>Orestis Friderikos, Arturo Mendoza, Dimitrios Sagris, Constantine David, Emmanuel Baranger</i> | Durability and fractography of aluminum alloy 6060 after fatigue tests under bending and torsion loading <i>Joanna Malecka, Sebastian Skrobacz, Roman Chudy, Szymon Derda, Juliusz Kuś, Tadeusz Lagoda</i> |
| 16:40-17:00 | Proof of structural durability for surface-hardened components based on the local strain approach <i>Patrick Yadeagi, Thomas Beier, Michael Vormwald</i> | Investigation of intelligent evaluation method of fretting fatigue life assessment based on hierarchical mechanism-based neural network <i>Huana Yuan, Yujing Liu</i> | Study of mechanical properties of epoxy/graphene and epoxy/halloysite nanocomposites <i>Lubomir Lapcik, Yousef Murtaja, Barbara Lapcikova</i> | Investigation and calculation of longitudinal compressive strength of unidirectional glass fiber reinforced plastic considering fiber orientation distribution <i>Tom Blümel, Rabea Sahr, Alexander Krimmer</i> | Failure investigation of an AISI 316L pipe of the Flare System in an off-shore oil platform <i>Sérgio Tavares, Gustavo Brandolin, Nathalia Mota, Israel Silva, Rodrigo Landim, André Pimenta</i> |
| 17:00-17:20 | Notch approximation methods for components under thermomechanical stresses <i>Jan Hamacher, Michael Vormwald</i> | Study of experimental and theoretical crack directions for specimens with a circular hole under biaxial cyclic loading <i>Victor Chaves, Jose A. Balbin, Alfredo Navarro</i> | Using the Point Method to estimate failure loads in 3D printed graphene-reinforced PLA notched plates. <i>Sergio Cicero, Sergio Arrieta, Marcos Sánchez, Laura Castanon-Jano</i> | Multiscale damage modelling for variable-angle filament-wound composites <i>Bruno Christoff, Humberto Almeida Jr., Rui Guedes, Volnei Tita</i> | Influence of geometry on the failure behaviour of force-locking and form-locking shaft-hub connections on the example of the inner knurled press-fit connection <i>Tobias Hentschel, Alexander Hasse</i> |
| 17:20-17:40 | FATIGUE LIFE ESTIMATION OF NOTCHED COMPONENTS UNDER MULTIAXIAL NON-PROPORTIONAL LOADING <i>Jan Kraft, Michael Vormwald</i> | Verification of a nonlocal analytical model to simulate cracked nanobeams under mode I static loading <i>Andrea Zanichelli, Andrea Carpinteri, Camilla Ronchei, Daniela Scarza, Sabrina Vantadori</i> | An electrostatic glue <i>Mark Geoghegan (invited)</i> | Probabilistic simulation methods in micromechanical modelling of fiber-reinforced composites <i>Janot Lubritz</i> | Towards Automated Fatigue Striation Counting <i>Wolfgang von Bestenbostel, Klaus Schertler</i> |
| 17:40-18:00 | Comparison of the strength assessments of the FKM guidelines <i>Melanie Fiedler, Roland Rennert</i> | Toughness of Hydrogels <i>Konstantinos Garyfallogiannis, Prashant Purohit, John Bassani</i> | | | Very High Cycle Bending Fatigue response of Ni-Al Bronze <i>Katerina Chantziara, Mohamed Sadek, Ahmed Chabbah, Mikael Grehk</i> |
| 18:00 | End of Day 1 | | | | |



DAY 2 | Thursday, June 22nd, 2023

| Keynote Lecture: Validating structural simulations of large-scale aeronautical components @Prof. George Lampeas University of Patras, Greece Prof. Spiros Pantelakis ICEAF VII co-Chairman | | | | | |
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| 09:00-09:30 | ROOM 1 | | | | |
| 09:30-11:30 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
| Session: Chair: | Fatigue and Fracture of additively manufactured materials Prof. Giovanni Meneghetti | Advances in Fracture Analysis and Wear Characterization of High-Performance Metals and Alloys: Experimental Investigations and Numerical Modeling Dr. George Pantazopoulos | Additive manufacturing Prof. Katarina Monkova | Exploring Fracture Phenomena in Materials under Extreme Conditions of Operation Prof. Dionysios Mouzakis | Computational and experimental techniques for the tolerance analysis and robust design of materials and devices Prof. Vincenzo Tucci & Dr. Monica La Mura |
| 09:30-09:50 | A review of the use of the Theory of Critical Distances to perform the uniaxial/multiaxial fatigue assessment of notched 3D-printed metals Luca Susmel (invited) | Hydrocode numerical modeling of projectile impact on moving aluminum targets Costas Kalfountzos, George Bikakis, Efsthios Theotokaglou | Comparison of the bending properties of a radially and rectangularly distributed lattice structure made of ABS material Katarina Monkova, Peter Pavol Monka, Milan Zaludek, Martin Korol, Marek Kocisko, Petr Baron, Matej Skyvara | Protecting Spacecraft against Hyper-Velocity Impact: Problems and Solutions. Dionysios Tompras, Dr-Ing. Dionysios Mouzakis | A novel reliability evaluation method combining improved subset simulation and adaptive Kriging model for rare failure events Debiao Meng, Shiyuan Yang, Peng Nie, Yipeng Guo |
| 09:50-10:10 | MICROSTRUCTURE AND FATIGUE BEHAVIOR OF A HIGH STRENGTH ADDITIVELY MANUFACTURED AL-CU ALLOY Gianni Nicoletto, Giovanni Fortese, Tibor Varmus, Radomila Kanecka | Investigation of Fracture modes in Drop Weight Tear Test of API grade steel Abhilash Verma, Neekita Patel, Gautam Mukhopadhyay, Anup Kumar | Dissimilar joining by 3D printing: Study of the joint design Teresa Marado, Carlos Leitão, Rui Leal, Ivan Galvão | Plain fretting crack initiation - experimental and numerical fracture mechanics analyses Denny Knabner, Lukáš Suchý, Alexander Hasse | A hybrid adaptive strategy for support vector machine-based structural reliability analysis Shiyuan Yang, Debiao Meng, Peng Nie, Hongtao Wang |
| 10:10-10:30 | Probabilistic defect-notch interaction assessment of AM materials under size effect Xiaopeng Niu, Filippo Berto, Jinchao He, Shunpeng Zhu | Metallography analysis of cold shear blades at hot rolling rebar mills Souvik Das | Investigation of bio-based and recycled materials for Additive Manufacturing using Fused Layer Modelling Stefan Junk, Philipp Vögele | Temperature dependent fiber/matrix interfacial debonding in CFRPs George Zaverdinos, Dimitrios Dragotianni | Application of novel diffraction methodologies for estimation of fatigue state of the material Elżbieta Gadalińska, Anna Trykowska, Maciej Malicki, Bartosz Madejski |
| 10:30-10:50 | Fatigue Behavior of Miniaturized Ti6Al4V Lattice Structures: Investigating the Influence of Building Orientation and Stress Ratio for Improved Design and Manufacturing of Biomedical Devices Simone Murchio, David Maniglio, Andrea Rigatti, Luca De Nari, Valerio Luchin, Matteo Benedetti | The anisotropy behavior of metallic foams under Charpy impact tests Sergiu-Valentin Galatanu, Emanoil Linul, Jaroslav Kováčik, Liviu Marsavina | Numerical investigation of 3-D auxetic meta-material for high-performance concrete Neeraj Sharma, Kshitij Kumar Yadav | Armor plates made from household and "off-the-shelf" materials for use by citizens in life threatening conditions Nasikas N, Emmanouil P, Markoulakis A, Mouzakis D | Plastic stress concentration effects in the tolerance to short fatigue cracks Jaime Castro, Mengren Liu, Carlos Bandeira, Antonio Miranda, Renato Vieira, Marco Meggiolaro |
| 10:50-11:10 | MULTI-SCALE ASSESSMENT OF MECHANICAL PROPERTIES AND FATIGUE PERFORMANCE OF ADDITIVELY MANUFACTURED NICKEL-BASE SUPERALLOYS Huang Yuan, Tinglin Zhang, Shengzhe Jin | Understanding the crack initiation mechanism under thermal-mechanical fatigue in polycrystalline superalloys David Collins, Mikael Segerstål, Johan Moverare, Angus Wilkinson, Baptiste Gault, Paraskevas Kontis | Innovative Additive Manufacturing of Biomimetic 3D Constructs for Enhanced Impact Energy Dissipation Nikolaos Michailidis, Georgios Malliaris, Apostolos Argyros, Emmanouel Smyrniaos | Determination of stresses in the combination of proportional cyclic bending and torsion of RG7 bronze according to different plasticity models Michal Paduchowicz, Karolina Głowacka, Joanna Malecka, Tadeusz Łagoda | Bird strike analysis of new composite inlet for tilt rotor aircraft Radek Doubrava, Jarmil Vlček, Martin Oberthor, Petr Bělský |
| 11:10-11:30 | Fatigue threshold estimation of as-built surfaces of Ti6Al4V alloy specimens based on equivalent crack models Giovanni Meneghetti, Daniele Rigan, Filippo Cappola | Wear Behavior of SBR/BR Compounds Including Different ZnO Types Cansu Börüban Binaçlı, Seyda Polat, Ş. Hakan Atapek | Investigation of the damping capacity of stochastic lattice structures Elias Sarafis, Andreas Stankos, Georgios Malliaris, Sofia Kavafaki, Vassilios Mitridis | | Modeling ductile failure -- A non-local plasticity model for porous metals with deformation-induced anisotropy Nikolaos Aravas, Ioanna Papadioti |
| 11:30-11:40 | Coffee Break | | | | |

| 11:40-13:20 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
|------------------------|--|--|---|--|---|
| Session: Chair: | Environmental degradation, corrosion and wear Prof. Angeliki Lekatou | Multi-material design and function-integration for sustainable mechanical systems Prof. Angelos Filippatos | Safety Aspects in Aircraft Design Prof. Andreas Strohmayer | Surface engineering and coatings Prof. Hanshan Dong | Failure in civil and environmental engineering – analysis / prevention / repair Dr. Kaluza Marta & Prof. Charis Apostolopoulos |
| 11:40-12:00 | Corrosion and wear performance of a biomedical CoCrMo alloy fabricated by Vacuum Arc Melting <i>Savvas Emmanouilidou, Angelos Papagiannopoulos, Angeliki Lekatou</i> | Integrating sustainability into conceptual design of an aircraft structure for and beyond an eco-design approach <i>Angelos Filippatos, Dionysios Markatos, Koushik Abhyankar, Georgios Tzortzinis, Maik Gude, Spiros Pantelakis</i> | Design of a TRL 3 Concept for Supersonic Variable Pitch Inlets with a Safe Design Approach for Academic Environments <i>Stefan Kazula, Klaus Höschler</i> | Degradation of Thermoelectric Materials and their Protection by Chromium-based Coatings <i>Zhenxue Zhang, Mikdat Gurtaran, Xiaoying Li, Hanshan Dong</i> | Textile Reinforced Mortar strengthening as effective prevention against premature failure of masonry walls made of AAC blocks subjected to diagonal compression Marta Kaluza |
| 12:00-12:20 | Fly ash as a corrosion inhibitor of AISI 316L and 304L stainless steel concrete reinforcements under the combined effect of acid rain and seawater <i>Sofia Tsouli, Pantelis Goutzos, Spyros Klefjakis, Angeliki Lekatou</i> | Modelling the shredding process of multi-material structures for recycling-oriented design <i>Magdalena Heibek, Jonas Richter, Thomas Mütze, Angelos Filippatos</i> | Common Cause Analysis of the Air Supply System of Fuel Cell-Powered Propulsion Systems in Electrified Aviation <i>Stefan Kazula</i> | Improvement of IFSS of CFRP composites by ASP treatments <i>Xiaoying Li, Behnam Dashtbozorg, Hanshan Dong</i> | Simulation of the degraded (steel-concrete) bond strength due to corrosion via modeling pull out tests <i>Konstantinos Koulouris, Alkiviadis Charalampopoulos, Charis Apostolopoulos</i> |
| 12:20-12:40 | Development of a tool for the prediction of wear in spur gears. Application to wind turbine's pitch system <i>Maite Garcia, David Cubillas, Mikel Escalero</i> | Inspection and evaluation of corroded steel bridges with high resolution 3D laser scanning and convolutional neural networks (CNN) <i>Georgios Tzortzinis, Angelos Filippatos, Jan Wittig, Maik Gude, Chengbo Ai, Simos Gerasimidis</i> | Review of Potential Safety Challenges Associated with Electromagnetic Interference for Future Electrified Aero Engines <i>Stefanie de Graaf</i> | Oxidation Behaviour of CrSi Coatings for Combating Degradation of 316 Austenitic Stainless Steel at High Temperatures <i>Mikdat Gurtaran, Zhenxue Zhang, Xiaoying Li, Hanshan Dong</i> | Effect of shot blasting treatment on mechanical behavior of steel reinforcement <i>Maria Basdeki, Charis Apostolopoulos</i> |
| 12:40-13:00 | The Corrosion Resistance of High-Strength Steels: An Examination of Microstructural Effects Using Localised Electrochemical Methods <i>Aytac Yilmaz, Sateyakam Kar, Gaojie Li, Konstantina Traka, Jilt Sietsma, Maria J. Santofimia, Yoiza Gonzalez-Garcia</i> | Ice detection on composite blades using artificial neural networks under different icing conditions based on their vibration behavior <i>Jan Wittig, Georgios Tzortzinis, Angelos Filippatos</i> | Analysis of Critical Loss of Thrust for Hybrid-Electric Aircraft Configurations and Implications on Preliminary Aircraft Design <i>Jonas Mangold, Andreas Strohmayer</i> | Active screen plasma nitriding of laser powder bed fusion processed 316L stainless steel for the application of fuel cell bipolar plates <i>Kailie Lin, Jingchi Qiao, Dongdong Gu</i> | Structural Health Monitoring implementation in standards and application to historic masonry structures <i>Dimitrios Diamantidis, Miroslav Sykora</i> |
| 13:00-13:20 | Metallographic investigation of premature failures for stainless steel pipes Vikas Solanki | Experimental Study of Composite Driveshafts for Marine Applications <i>Elias Bilalis, Georgios Tzortzinis, Nicholas Tsouvalis, Angelos Filippatos</i> | Zonal safety analysis for the powertrain and fuel supply system of a hydrogen-powered aircraft <i>Nicolas Moebis, Jonas Mangold, Andreas Strohmayer</i> | | |
| 13:20-14:20 | Light Lunch | | | | |
| 14:20-14:50 | Keynote Lecture: Imaging using Ultrasonics and X-ray CT: Problems and Solutions Prof. Elena Jasuniene Kaunas University of Technology, Lithuania Chair: Prof. Michael Vormwald ICEAF VII co-Chairman | | | | |
| 14:50-16:10 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
| Session: Chair: | Non-Destructive Testing, Structural Health Monitoring and Robotic applications for prevention of failure and maintenance of different infrastructures (PART I) Prof. Elena Jasuniene & Prof. Valentina Ivanova | Size effect and probabilistic failure assessment (PART I) Prof. Alfonso Fernandez-Canteli & Dr. Miguel Muniz-Calvente & Dr. Sergio Blazán | Smart and Sustainable Aerospace Engineering: Aeroelasticity, Morphing, and Maintenance (PART I) Prof. Yavuz Yaman & Prof. Konstantinos Stamoulis | Environmentally induced degradation and damage: advanced modelling, characterization and optimization aspects (PART I) Prof. Mikhail Zheludkevich & Dr. Natalia Konchakova & Prof. Nikolaos Alexopoulos | Additive Manufacturing & 3D printing: Design, Mechanical Performance, and Structural Integrity (PART I) Prof. Mario Guagliano & Prof. Sara Bagherifard & Dr. Pietro Foti |
| 14:50-15:10 | A Novel Non-Local Structural Health Monitoring Method for Real-time Crack Growth Analysis <i>Faraz Ganjoudst, Adnan Kefal, Ali Javili</i> | Probabilistic buckling assessment and reliability of FML, composite and aluminum cylindrical panels under compression with load and fabrication uncertainties <i>Costos Kalfountzos, George Bikakis, Efstathios Theotokoglou</i> | Flutter Analyses of an Unmanned Helicopter Main Rotor Blade <i>Alaaddin Furkan Uzunkaya, Yavuz Yaman</i> | Modelling mechanically induced failure of PEO coated extruded magnesium <i>Evaen Gozenbiller, Natalia Konchakova, Maria Serdechnova, Carsten Blowert, Daniel Höche, Mikhail L. Zheludkevich</i> | Peening based surface treatments for post-processing of additive manufactured AlSi10Mg alloy <i>Sara Bagherifard, Erfan Maleki, Asghar Heydari Astaroe, Mario Guagliano</i> |
| 15:10-15:30 | Development of novel multi-dimensional data fusion technique for evaluation of adhesive bonded joints using ultrasonic and X-ray radiographic non-destructive testing <i>Gawher Ahmad Bhat, Bengisu Yilmaz, Damira Smagulova, Vaidotas Cicenas, Egidijus Žukauskas, Elena Jasuniene</i> | Investigation of the size effect on the critical distance and fatigue life using the highly stressed volume approach <i>Jincho He, Shunpeng Zhu, Xiaopeng Niu, Ding Liao</i> | Analysis of Buffet Instability of Twin Vertical Tail Aircraft <i>Furkan Koray Isli, Yavuz Yaman</i> | Interoperability of experimental and simulation data along production chains on the VIPCOAT Open Innovation Platform <i>Natalia Konchakova, Peter Klein, Peter Visser, Heinz A. Preisig, Thomas F. Hagelien</i> | Cold spray depositions of Multi-Principal Element Alloys – Sprayability and Characterization <i>Magesh Kumaravel, Amir Ardeshiri Lordejani, Sara Bagherifard, Mario Guagliano</i> |
| 15:30-15:50 | Monitoring of structures integrity in operation <i>Vladimir Chmelka, Tomáš Košič</i> | Probabilistic lifetime assessment of a lost foam cast Al-Si alloy based on microcomputed tomographic measurements <i>Martin Wagner, Gerrit Barth, Andreas Mösenbacher, Martin Hoyer, Marco Riva, Hans-Jürgen Christ</i> | Buckling Prediction of Single-Walled Carbon Nanotube-Reinforced Laminated Composite Structures under Hygro-Thermo-Mechanical Conditions <i>Stelios Georgantzinis, Panagiotis Antoniou, Konstantinos Stamoulis, Christos Spitas</i> | Investigation on the effect of artificial ageing kinetics on corrosion susceptibility of Al-Cu-Li 2198 alloy <i>Mikhail Zheludkevich, Christina Charalampidou, Markos Margaritis, Nikolaos Alexopoulos</i> | On the Effect of Load Ratio on the Fatigue Behaviour of C45 Steel <i>Pietro Foti, Aldo Milone, Stefano Filippo, Raffaele Landolfo, Filippo Berto</i> |
| 15:50-16:10 | Improved Damage Mapping with Hyperbola Approach for Guided Waves Based Structural Health Monitoring Using Fiber Bragg Grating sensors <i>Rohan Saman, Kara Peters, Tomasz Wandowski, Wieslaw Ostachowicz</i> | The Generalized Local Model: Review of applications during the last 5 years <i>Miguel Muñoz Cabente, Alfonso Fernandez Canteli</i> | Liquid Hydrogen Storage Tank Virtual Crashworthiness Design Exploration for Civil Aircraft <i>Antoine Gallois, Ioannis Giannopoulos, Efstathios Theotokoglou</i> | The effect of artificial ageing kinetics on mechanical performance of Al-Cu-Li alloy AA2198 <i>Nick Birbilis, Christina Charalampidou, Nikolaos Alexopoulos</i> | FATIGUE TESTING OF A LIGHTWEIGHT COMPONENT MADE OF ADDITIVELY MANUFACTURED ALUMINUM ALLOY <i>Gianni Nicoletto, Federico Urtati, Giovanni Fortese, Enrica Riva</i> |
| 16:10-16:20 | Coffee Break | | | | |

| 16:20-17:40 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
|------------------------|--|--|--|---|--|
| Session: Chair: | Non-Destructive Testing, Structural Health Monitoring and Robotic applications for prevention of failure and maintenance of different infrastructures (PART II) Prof. Elena Jasluniene & Prof. Valentina Ivanova | Size effect and probabilistic failure assessment (PART II) Prof. Alfonso Fernández-Canteli & Dr. Miguel Muñoz-Calvente & Dr. Sergio Blasón | Smart and Sustainable Aerospace Engineering: Aeroelasticity, Morphing, and Maintenance (PART II) Prof. Yavuz Yaman & Prof. Konstantinos Stamoulis | Environmentally induced degradation and damage: advanced modelling, characterization and optimization aspects (PART II) Prof. Mikhail Zheludkevich & Dr. Natalia Konchakova & Prof. Nikolaos Alexopoulos | Additive Manufacturing & 3D printing: Design, Mechanical Performance, and Structural Integrity (PART II) Prof. Mario Guagliano & Prof. Sara Bagherifard & Dr. Pietro Foti |
| 16:20-16:40 | RIMA network of Digital Innovation Hubs a tool to for the innovation in Inspection and Maintenance of infrastructures <i>Peter Trampus, Christophe Leroux, Mariann Mertz</i> | Probabilistic assessment of rolling contact fatigue including the scale effect <i>Mikel Escalera, Haritz Zabala, Mireia Olave</i> | Liquid Hydrogen Storage Tank Loading Generation for Civil Aircraft Damage Tolerance Analysis <i>Ioannis Giannopoulos, Efsthios Theokoglou</i> | The effect of pre-stretching induced microstructural transformations on the corrosion behaviour of Al-Cu-Li 2198 alloy <i>Roelf Mostert, Christiaan Pretorius, Muhammed Salajee, Christina Charalampidou, Nikolaos Alexopoulos, Stavros Kourkoulis</i> | Crystal plasticity modeling of lamellar deformation in bimodal Ti-6Al-4V under mechanical fatigue <i>Keke Tang, Yindun Zhao, Paolo Ferro, Filippo Berto</i> |
| 16:50-17:00 | Implementation of a Robotic Mobile Manipulator moving a NDT probe inside Steel Cylinder Concrete Pipes for Corrosion Assessment <i>Eric Lucet, Farès Kfoury, Lucas Si Larbi</i> <i>Dr. Frederic Colledani will present on behalf of Dr. Eric Lucet</i> | Fatigue crack growth prediction: from lab to real component <i>Giovanna Colvin Garcia, Mikel Escalera, Haritz Zabala, Miguel Muñoz-Calvente</i> | A Novel, Non-Contact NDT Scanner Case Study: Thickness Measurement, Debonding and Crack Detection in Composites <i>Arno Volker, Konstantinos Stamoulis, Donald Tangeren, Bart Bekkema, Robert Poppe</i> | How modelling can accelerate the design of active protective coatings? <i>Mikhail Zheludkevich</i> | High-cycle fatigue performance of hierarchically porous titanium scaffolds produced by additive manufacturing and its possible improvement by gas nitriding <i>Karel Štámečka, Adelia Kashimbetova, Serhii Tkachenko, Pavel Gejdoš, Jaroslav Pokluda, Edgar Benjamin Montufar, Ladislav Čelko</i> |
| 17:00-17:20 | Combining Thick and Thin Film Sensor Manufacturing Techniques for Realization of Smart Components via High and Low Pressure Die Casting <i>Dirk Lehmkus, Marco Cen, Adrian Struss, Tim de Rijk, Christoph Pille, Aynur Klatt, Walter Lang</i> | An extension of the Weibull regression model to cover the LCF, HCF and VHCF regimes for fatigue results performed at different stress ratios R <i>Alfonso Fernández-Canteli, Enrique Castillo, Sergio Blasón, Abilio de Jesus, José Correia</i> | Design Optimization of an Aircraft Canopy against Bird Strike <i>Tezel M, Özkan Ö, Acar E</i> | The effect of solution aggressiveness on the corrosion-induced degradation of Al-Cu-Li 2198 alloy <i>Margarita Christina Charalampidou, Nikolaos Alexopoulos, Mikhail Zheludkevich, Carsten Blawert</i> | Wear and Friction Behaviour of Additive Manufactured PEEK under Non-conformal Contact <i>Yong Chen, Gongbao Lin, Z. M. Shukur, Steve Kukureka, Karl Dearn</i> |
| 17:20-17:40 | Low-frequency air-coupled transducer based damage detection in composite materials <i>Tomasz Wandowski, Paweł Kudela, Maciej Rodziński</i> | A probabilistic fatigue model based on nonlinear Kohout-Vechet function: Application to 42CrMo4+QT steel <i>Julian M. E. Marques, Jan Papuga, Milan Růžička, Denis Benasciutti</i> | | Numerical simulation of corrosion-induced damage on Al-Cu-Li 2198 alloy <i>Eleftheria-Sotiria Louka, Paraskevas Papanikos, Markos Margaritis, Christina Margarita Charalampidou, Nikolaos Alexopoulos</i> | Atomic-scale grain boundary engineering for crack-free additively manufactured superalloys <i>Stoichko Antonov, Arthur Després, Olav Vad, Charlotte Moyer, Guilhem Martin, Paraskevas Kontis</i> |
| 17:40 | End of Day 2 | | | | |



DAY 3 | Friday, June 23rd, 2023

| Keynote Lecture: Multifunctional graphene composites for aerospace and automotive applications Prof. Costas Galiotis University of Patras & FORTH/ICE-HT, Greece | | | | | |
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| Chair: Prof. Spiros Pantelakis ICEAF VII co-Chairman | | | | | |
| 09:30-11:50 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
| Session: | Crack propagation in materials and crack-stop engineering | Experimental and Numerical Investigation and Validation of Sandwich Composite Materials and Aircraft Structures | Structural Health Monitoring for Composite Structures | Innovative composites (PART I) for sustainability | Characterization of Fractures |
| Chair: | Prof. Ehrenfried Zschech | Prof. George Lamepas & Prof. Alexis Kermanidis & Dr. Athanasios Dafnis | Prof. Konstantinos Tserpes | Dr. Claudio Mingazzini | Dr. George Pantazopoulos |
| 09:30-09:50 | 3D Crack Propagation Study of a Railway Component using XFEM Method <i>Teresa Moragado, Ricardo Dias, Manuel Pereira</i> | Parametric study of guided wave propagation in honeycomb sandwich panel for model-assisted damage assessment method <i>Piotr Fiborek, Pawel Kudela</i> | Acoustic Emission Analysis on Mechanical Properties and Damage Evolution of Multiscale Kevlar/Glass Hybrid 3D Orthogonal Woven Composites under Flexural Loading <i>Abdulrahman Al-Nadhari, Halli Senol, Hasan Ulus, Serra Topal, Mehmet Yildiz</i> | DEVELOPMENT OF WATER-BASED INORGANIC MATRICES FOR THE PRE-IMPREGNATION OF FIRE-RESISTANT LAMINATED COMPOSITES <i>Annalisa Natali Murti, Elettra Papa, Elena Landi, Claudio Mingazzini, Matteo Scafé, Valentina Medri</i> | Microstructure of White Etching Area around Subsurface Cracks in Bearings <i>Alexandros Banis, Ksenija Nikolic, Loic Malet, Baumen Petrov</i> |
| 09:50-10:10 | The role of intermetallic particles and grain boundaries at various mechanical orientations in AA 7075 aluminum alloy <i>Alexandros Prospathopoulos, Apostolos Argyros, Christos Gakias, Nikolaos Michailidis, Georgios Savvalidis</i> | Experimental and Numerical Investigation of the In-Plane Shear Behavior of A-5052 Honeycomb Core under monotonic tension loading <i>John Pikilidis, Antonis Tsigritis, Nikos Sevastianos, Alexis Kermanidis, George Labeas</i> | A vibration-based machine learning type Structural Health Monitoring methodology for populations of composite aerostuctures under uncertainty <i>Ioannis E. Saramantzas, Panayotis E. Spiliotopoulos, Fatih T. Fera, Dimitrios Bourdalos, John S. Sakellariou, Spiros D. Fassois, Yoav Ofir, Iddo Kressel, Moshe Tur, Christos Spandonidis</i> | Aging Behavior of Rubber Compounds Prepared with Different ZnO Types <i>Cansu Baruhan Binagç, Seyda Palat, Ş. Hakan Atopek</i> | Tensile properties of 3D printed INCONEL 718 cellular specimens <i>Katerina Maniava, George A. Pantazopoulos, Peter Pavol Monka, Anagnostis I. Toulfatis, Kristina Lengyelova, Sofia Papadopoulou</i> |
| 10:10-10:30 | Properties of the crack resistance of layered composite and simulation of a crack quasi-static growth <i>Vitalijs Pavelko</i> | Mechanical behavior of perforated and unperforated aluminum honeycomb core under shear loading <i>Markus Gastens, Athanasios Dafnis, Kai-Uwe Schröder</i> | Development and experimental validation of a Machine Learning based SHM prototype system for composite aerostuctures <i>Panayotis E. Spiliotopoulos, Fatih T. Fera, Panagiotis Papadopoulos, Fotios Giannopoulos, Christos Spandonidis, Moshe Tur, Yoav Ofir, Iddo Kressel, Ioannis Saramantzas, John Sakellariou, Spiros Fassois</i> | Crosspreg®, an innovative reactive hybrid prepreg, mass production dedicate, with a low LCA profile and easy recyclable for Fenice Kic Project <i>Gianluigi Creonti, Claudio Mingazzini, Matteo Scafé</i> | Failure analysis on premature fracture of valve rod of circulating pump gate valve in a nuclear power plant <i>Zhen-Guo Yang</i> |
| 10:30-10:50 | Damage of a post-tensioned concrete bridge – unwanted cracks of the bridge girders <i>Bartosz Sobczyk, Mikolaj Misiewicz, Lukasz Pyrzowski</i> | Multi-physics finite element model of a general aviation liquid hydrogen fuel tank <i>George Tzoumakis, George Lamepas</i> | Inverse finite element analysis for delamination detection in composite structures subjected to forced vibration <i>Faraz Garjoudast, Adnan Kafaj, Alexander Tessler</i> | Fire Resistance characterization and post-fire evaluation of residual mechanical strength <i>Patricia Ares, Jesus Ballester, Claudio Mingazzini, Enrico Leoni, Stefano Bassi, Matteo Scafé</i> | The influence of over-aging on the multiaxial fatigue behavior of the cast AlSi7Cu0.5Mg0.3 alloy <i>Viet-Duc LE, Pierre OSMOND, Daniel BELLET, Franck MOREL</i> |
| 10:50-11:10 | Quasi-static and fatigue crack growth simulation in co-consolidated thermoplastic joints containing crack arrest features <i>Ioannis Siviatis, Konstantinos Tserpes, Paraskevas Papanikas</i> | Development of a numerical methodology for the analysis of the post-buckling and failure behaviour of composite stiffened panels considering the effect of initial debonding <i>Harry Pshihoyas, Konstantinos Fotopoulos, George Lamepas, Jan Waleson, Michel Brethouwer</i> | RANDOM VIBRATION-BASED PROGRESSIVE FATIGUE DAMAGE MONITORING OF THERMOPLASTIC COUPONS UNDER POPULATION AND OPERATIONAL UNCERTAINTY <i>Niki Tsvouraki, Konstantinos Tserpes, Spiros Fassois</i> | Mechanical characterizations on bio-based recyclable composites, being developed for fire resistance <i>Enrico Benco, Cristiana Tolan, Claudio Mingazzini, Matteo Scafé</i> | Evaluation of the susceptibility of Refractory Multicomponent alloys to Thermal Shock towards the improvement of their manufacturability <i>Ricardo Salvarado, Paul Stavroulakis, George Pantazopoulos, Russell Goodbill</i> |
| 11:10-11:30 | A structural-thermal coupled modeling approach on the formation of adiabatic shear bands in steel sheet blanking process <i>Konstantina Karantzou, Nikolaos Vaxevanidis, Dimitrios Manolakas</i> | Stiffened panel crack propagation simulation by representative fuselage fatigue spectrum <i>Panagiotis Kordas, George Lamepas, Theodoros Kermanidis</i> | Condition Monitoring Framework for Damage Identification in CFRP Rotating Shafts using Model-Driven Machine Learning Techniques <i>George Karyofyllas, Josef Koutsoupakis, Panagiotis Sevontekidis, Dimitrios Giagopoulos</i> | Finite element virtual validation on basalt reinforced sustainable composites, based on bio-based or innovative cleavable recyclable resins <i>Claudio Mingazzini, Enrico Leoni, Stefano Bassi, Enrico Benco, Jaime Ferrer Dalmau, Daniele Pullini, Matteo Basso</i> | Investigation of artificial aging response to pre-deformation by microstructural examination, microhardness testing and differential scanning calorimetry of Al 6063 extruded profile <i>Eva Stachouli, Georgios-Kirykos Lammatos, Sofia Papadopoulou, Andreas Rikos, Phoivos Aslanis, Athanasios Vazdirvanidis</i> |
| 11:30-11:50 | Eliciting stable nanoscale fracture in single-crystal silicon <i>Frank W. DelRio, Scott J. Grutvik, William M. Mook, Sara M. Dickens, Paul G. Katulu, Eric D. Hintsala, Douglas D. Stauffer, Oden L. Warren, Brad L. Boyce</i> | Investigation of conduction welded thermoplastic composite joints in Mode-I and Mode-II loading conditions <i>Konstantinos Fotopoulos, Stavros Vallis, George Lamepas, Bos Tjjs</i> | Utilization of nanostructured coatings for tribocorrosive applications <i>E.P. Georgiou, A. Koutsomichalis, D. Drees, J.-P. Celis</i> | SiC/SiC composites tolerance to high temperature combustion atmosphere and post ageing mechanical and microstructural characterisation <i>Stefano Bassi, Claudio Mingazzini, Enrico Leoni, Matteo Scafé, Paride Fabbri, Gerard-Louis Vignoles, Francis Rebillat, O. Antonin, Pierre Bertrand</i> | Fracture analysis of a cold working die used in the aluminum packaging tubes production <i>Dimitrios Papageorgiou, Mrs Nikolaeta Mastoridou, Carmen Medrea</i> |
| 11:50-12:00 | Coffee Break | | | | |
| 12:00-13:00 | Poster session | | | | |
| 13:00-14:00 | Light lunch | | | | |

| 14:00-15:20 | ROOM 1 | ROOM 2 | ROOM 3 | ROOM 4 | ROOM 5 |
|-------------|--|---|---|--|--|
| Session: | Physics-based and data-driven methods for SHM applications | Recent Advances in Powder Metallurgy: Novel Materials and Techniques for Enhanced Performance and Durability | Recent advancements in welding processes | Innovative composites for sustainability (PART II) | Steel health monitoring & rehabilitation |
| Chair: | Prof. Konstantinos Anyfantis | Dr. Tamás Mikó | Dr. Anna Zervaki | Dr. Claudio Mingazzini | Prof. Evangelos Hristoforou |
| 14:00-14:20 | Construction of prior models used within Bayesian schemes for fatigue crack growth SHM in marine structures <i>Nicholas Silianis, Pavlos Makris, Konstantinos Anyfantis</i> | Corrosion Behavior of Graphene/Magnesium Composites Produced by Powder Metallurgy Method <i>Yasemin Yahsi, M. Kaan Kilinc, Ergi Dedebas, Hilal Özgecik, Sabriye Yusun, Sinan Akgöl, Rasim İpek</i> | New temptations in hot structural fabrication of aero engine components <i>Joel Andersson</i> | Thermophysical characterization of innovative and recyclable composites, being developed and considered for battery boxes mass production <i>Giulia De Aloysio, Mattia Morganti, Luca Laghi, Leonardo Ghetti, Claudio Mingazzini, Stefano Bassi, Tiziano Delise, Enrico Leoni</i> | Universality in magnetically detected residual stresses in steels and method to determine the actual stress level distribution <i>Georgia Stamou, Pochronis Pattakos, Spyridon Angelopoulos, Aphrodite Ktena, Evangelos Hristoforou</i> |
| 14:20-14:40 | A SHM architecture for indirect load estimation in wind turbine rotor blades through strain sensing <i>Theodora Liangou, Ilias Zlokas, Konstantinos Anyfantis</i> | Failure Behavior of Composites Produced From Precoated Mg Powder by Powder Metallurgy Method <i>Yasemin Yahsi, Rasim İpek</i> | Experimental and numerical analysis of TIG welding speed effect, on the residual stresses and strains of AISI304 pipes <i>Stefanos Geraralis, Grigoris Belmpas, Dimitrios Fasnakis, Maria Pappa, Rafael Vogianos</i> | Mechanical characterizations on biobased FMLs, being developed for battery boxes, before and after ageing in salt spray chambers <i>Claudio Mingazzini, Enrico Leoni, Stefano Bassi, Tiziano Delise, Matteo Scafe, Giulia De Aloysio, Luca Laghi, Gian Luca Falletti</i> | On the Barkhausen noise in naval steels <i>Pochronis Pattakos, Georgia Stamou, Spyridon Angelopoulos, Aphrodite Ktena, Evangelos Hristoforou</i> |
| 14:40-15:00 | Black-box system identification approach for damage detection in a small-scale wind turbine blade <i>Mengen Liu, Helon Vicente Hultmann Ayala</i> | Minimizing Porosity in 17-4 PH Stainless Steel Through Cold Pressing and Sintering for Improved Resistance to Static and Dynamic Loads <i>Tamás Mikó, Dionysios Markatos, Konstantinos Koulouris, Enrico Troiani, Zoltan Gacsi</i> | Experimental and Computational study of Microhardness Evolution in the HAZ for Al-Cu-Li alloys <i>Stavroula Maritsa, Anna D. Zervaki</i> | Fatigue behaviour of 10% wt. short glass fibre reinforced recycled Polypropylene with mineral filler in presence of notches <i>Filippo Coppola, Mauro Ricotta, Marco Garilli, Luca Fabbro, Ivan Azzalin, Giovanni Meneghetti</i> | AMR sensor for Steel Health Monitoring <i>Georgia Stamou, Spyridon Angelopoulos, Pochronis Pattakos, Aphrodite Ktena, Evangelos Hristoforou</i> |
| 15:00-15:20 | ADVANCED DAMAGE DIAGNOSTICS FOR COMPOSITE MATERIAL-BASED STRUCTURES OF ELEMENTARY AND COMPLICATED GEOMETRIES FROM SMART SENSORS OF SPATIALLY DISTRIBUTED ACCELERATION MEASUREMENTS <i>Yannis Georgiou</i> | Stress corrosion cracking susceptibility of duplex stainless steels UNS S32205 produced by powder metallurgy and hot rolling <i>Tatiana Barros, Arthur Gonzago, Sérgio Tavares, Javier Velasco, Rejane Baptista</i> | Pressure equipment in refineries: Correlation of process conditions with life span under the existence of welding defects <i>A. Fotiadis, D. Oikonomou, A.D. Zervaki and G.N. Haidemenopoulos</i> | Chemical recovery of carbon fibers from composites via plasma assisted solvolysis <i>Dimitris Marinis, Ergina Farsari, Eleftherios Amanatides, Dimitrios Mataras, Christiana Alexandridou</i> | Hall Sensors For Steel Health Monitoring <i>Pochronis Pattakos, Spyridon Angelopoulos, Georgia Stamou, Aphrodite Ktena, Evangelos Hristoforou</i> |
| 15:20-15:30 | Coffee Break | | | | |
| 15:30-15:45 | Concluding remarks and closing of the Conference | | | | |
| 15:45 | End of Conference | | | | |

| Poster session | |
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| 1 | A failure analysis investigation of a transmission precision roller chain. <i>Sofia Papanikolaou, Dimitris Fasnakis, Stergios Maropoulos</i> |
| 2 | Investigation on the effect of MMT on the fracture behavior of PVA Matrix Nanocomposites <i>Sayed Maltaha Zabarjad, Fatemeh Bagheri, Kamal Jangharban</i> |
| 3 | Capturing additively manufactured composites behavior by digital image correlation technique <i>Martina Franulovic, Kristina Markovic, Matej Gijusic</i> |
| 4 | Microstructural characterization of dissimilar welding and repair welding between super-austenitic and austenitic stainless steels, using different filler materials <i>Eirini Varouti, Amilios Zervas, Isidoros Iakovidis, Stavros Chionopoulos</i> |
| 5 | On the strength of the piezoceramic transducer in the system of structural health monitoring. <i>Igor Pavelko</i> |
| 6 | Research on the 18th-century buildings in terms of static schemes changes <i>Monika Mackiewicz, Janusz R. Krentowski, Kamil Zimiński</i> |
| 7 | Evaluation of the historic wooden structures condition based on the results of non-destructive tests <i>Monika Mackiewicz, Kamil Zimiński, Joanna A. Pawłowicz, Piotr Knyziak</i> |
| 8 | Reverse engineering as a non-invasive examining method of the water tower brick structure condition <i>Joanna Pawłowicz, Aldona Skotnicka-Siepsiak, Janusz Krentowski, Piotr Knyziak, Carles Serrat</i> |
| 9 | Research and numerical assessment of design and construction errors in the swimming pool facility structure <i>Joanna Pawłowicz, Aldona Skotnicka-Siepsiak, Romuald Szełąg, Janusz Krentowski, Carles Serrat</i> |
| 10 | Materials characterization of advanced fillers for composites engineering applications <i>Lubomir Lapcik, Barbara Lapcikova, Yousef Murtaja</i> |
| 11 | Nano-scale Characterisation, Deformation and Failure Mechanisms in Enhanced-Performance Modern Steels <i>Angelos Kaldellis, Nikolaos Makris, George Fournalis, Petros Tsakiridis</i> |
| 12 | Characterisation of TCP Precipitation Sequences of Superaustenitic Stainless Steel and Correlation with Electrochemical and Mechanical Properties <i>Nikolaos Kountouris, Nikolaos Makris, Dimitra Ioannidou, Anastasia Alexandratou, Stavros Deligiannis, Angelos Kaldellis, Petros Tsakiridis, George Fournalis</i> |
| 13 | Experimental verification of PEKK stiffened panel under compression <i>Roman Růžek, Ing. Adam Karkulín, Jakub Šedek</i> |
| 14 | Structural integrity of cold spray repaired aerospace components <i>Tiago Werner, Mauro Madia, Kai Hilgenberg, Thomas Klassen, Frank Gärtner</i> |
| 15 | Contribution of texture analysis on the formability examination of 6061 Al alloy for the automotive industry <i>Phivos Aslanis, Grigoris Symeonidis, Sofia Papadopoulou, Andreas Rikos, Eva Stachouli, Athanasios Vazdirvanidis</i> |
| 16 | Mechanical characterizations on biobased Sheet Molding Compound (SMC), being developed for battery boxes. <i>Alberto Minimi</i> |
| 17 | Plasma Enhanced Chemical Vapor Deposition of SiOx/CyHz thin films for corrosion protection of metallic surfaces <i>Ergina Farsari, Charalampos Voulgaris, Eleftherios Amanatides, Dimitrios Mataras, Christiana Alexandridou</i> |
| 18 | Numerical and experimental approach in the prevention of construction failure of remotely controlled demolition robots <i>Damian Derlukiewicz, Jakub Andruszko</i> |
| 19 | Assessing the prediction uncertainty of Puck failure criterion for unidirectional composite laminates using interval analysis <i>Aikaterini Anagnostopoulou, Dimitrios Sotiropoulos, Konstantinos Tserpes</i> |
| 20 | Reliable material characterization for crashworthiness simulations of unidirectional composite laminates <i>Maria Pia Falaschetti, Nicola Zavotto, Francesco Rondino, Enrico Troiani, Lorenzo Donati</i> |
| 21 | Fluxgates for Steel Health Monitoring <i>Georgia Stamou, Spyridon Angelopoulos, Panagiotis Pifitis, Aphrodite Ktena, Evangelos Hristoforou</i> |
| 22 | Energy Harvester for Remote Sensing <i>Pochronis Pattakos, Angelos Katsoulas, Spyridon Angelopoulos, Georgia Stamou, Aphrodite Ktena, Evangelos Hristoforou</i> |