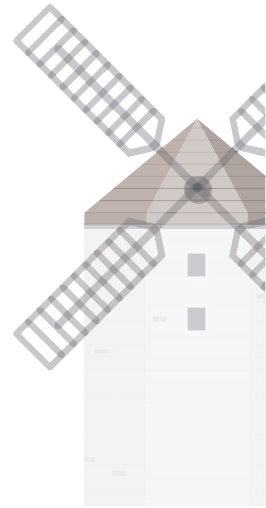




5th

INTERNATIONAL CONFERENCE OF ENGINEERING AGAINST FAILURE



20-22 June 2018, Chios Island, Greece



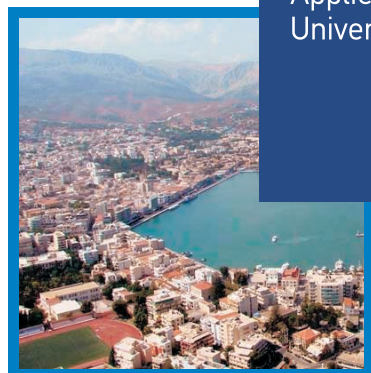
Conference Chairmen

Prof. Spiros Pantelakis

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

Prof. Stavros Koubias

Applied Electronics Laboratory (APEL),
University of Patras, Greece



Programme

Under the auspices of

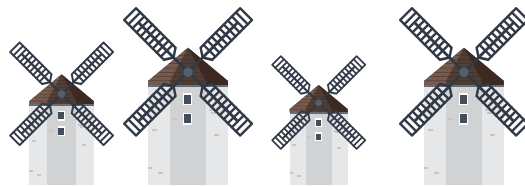




Welcome to

5th

International Conference
of Engineering Against Failure



Welcome to

Chios Island, Greece



Message from the Conference Co-Chairmen



Dear Participant to ICEAF V, dear Colleague,

It is our particular pleasure to welcome you to the beautiful island of Chios on the occasion of the International Conference of Engineering Against Failure. It is the 5th Conference of the successful ICEAF series and has the same objectives like its predecessors which took place in Patras, Mykonos, Kos and Skiathos respectively.

The first objective of the Conference is to provide a forum for presenting our latest research results to an international audience of reputable scientists and good Colleagues and friends as well as exchange our views on the works presented. Discussions and B2B meetings are very much encouraged. Particular attention is given at offering the opportunity to young researchers, from Greece and all over the world, to present their work in front of internationally recognized experts though at a friendly and academic environment.

The second objective of the Conference is that we, and our accompanying persons, have fun and spend three beautiful days at a very beautiful island! However, we want you to have the possibility to enjoy more than the scenery of this extraordinary beautiful island and the tasty local food. Therefore we want to do our best so that you get in touch with the Greek culture in general and the culture of Chios in particular. Chios, which is believed to be the birth place of Homer, is maybe one of the most typical examples among the Greek islands where, over the centuries, various cultures met, sometimes confronted, and finally mixed up to give the unique features of each of these charming places.

This time our Conference has also a third objective. Due to its geographical location, Chios is one of the islands which have been mostly affected by the refugees' crisis. Our objective is to express, through our presence here, our solidarity and respect to the authorities as well as in particular to the people of Chios who are overcoming themselves to provide any support and help possible to desperate human beings and recall the real sense of Humanism.

The fifth ICEAF Conference has been possible thanks to the hard work of a number of people and we want to thank cordially all of them. Particular thanks are due to our Keynote speakers, the members of the International Scientific Committee and of course the members of the local Organizing Committee who did an excellent job.

Last but definitely not least we want to thank our sponsors:

First of all, the Region of North Aegean for its generous support and valuable help. Special thanks are also due to the mayor of Chios for the hospitality and the permanent support. We want to thank also the Research Committee of the University of Patras, the School of Engineering of the University of Patras, the Hellenic Research Centre for Metals S.A. and the Setpoint technologies company; their support has been valuable for organizing a nice Conference.

We wish each of you a very successful and fruitful Conference and a very pleasant stay in Chios.

Spiros Pantelakis and Stavros Koubias



VENUE

Homerion Cultural Center





Tuesday, June 19, 2018

18:00 pm-20:00 pm

Registration

Day 1

Wednesday, June 20, 2018

08:30 am-11:30 am

Registration

09:00 am-09:20 am

Opening Ceremony Welcome by the Chairmen of the Conference

09:20 am-09:50 am

Welcome addresses

09:50 am-10:20 am

Keynote Lecture: Prof. N. Anifantis, In Memoriam
Chris A. Papadopoulos (1956-2017)

10:20 am-10:50 am

Keynote Lecture: Prof. M. Vormwald, Fatigue Lives of Power Plant Structures Due to Load Sequence Effects Originating from Fluctuating Production of Renewable Energy

10:50 am-11:10 am

Coffee Break

11:10 am-12:50 pm

SESSION 1 (Room 1)**Coatings on tools and machine elements**Chairperson:
Bouzakis Constantinos**SESSION 2** (Room 2)**Modeling and Characterization of Nanocomposites**Chairperson:
Tserpes Konstantinos**SESSION 3** (Room 3)**Tribology of Machine Elements, Fatigue and the role of (Nano) Coatings**Chairperson:
Nikolakopoulos Pantelis

11:10 am-11:30 am

1.1**FEM simulation of the nano-impact test on PVD coatings considering film strength properties gradation**Skordaris G.,
Bouzakis K.-D.,
Charalampous P.**2.1****Translation of materials modelling: strategy for engineering and industry to involve modelling innovations into manufacturing and business decisions.**Konchakova N.,
Hoeche D.,
Zheludkevich M.**3.1****Contact modelling of piston compression ring and comparison with Hertzian and JKR theoretical models**Grigoriadis K.,
Zavos A.,
Nikolakopoulos P. G.



	SESSION 1 (Room 1)	SESSION 2 (Room 2)	SESSION 3 (Room 3)
11:30 am-11:50 am	<p>1.2</p> <p>Improving the cutting performance of coated tools via appropriate pre- and post-treatments</p> <p>Bouzakis K., Skordaris G., Bouzakis E., Kotsanis T.</p>	<p>2.2</p> <p>Computation of Young's modulus of nanocrystalline materials using Voronoi models of representative volume elements</p> <p>Bazios P., Tserpes K., Pantelakis S.</p>	<p>3.2</p> <p>Surface treatment of tool steels against galling failure</p> <p>Psyllaki P., Stamatiou K., Iliadis I., Mourlas A., Asteris P., Vaxevanidis N.</p>
11:50 am-12:10 pm	<p>1.3</p> <p>The Footprint of Surface Modification Treatments on the Corrosion-Fatigue of AA7075-T651</p> <p>Michailidis N., Ragousis A., Stergioudi F., Castaneda H.</p>	<p>2.3</p> <p>Synergetic effects of carbon nanotube-graphene nanoplatelet hybrids in carbon fibre reinforced polymer composites</p> <p>Rocha J., Vale D., Rocha N., Santos R.M.</p>	<p>3.3</p> <p>A Tribo-Dynamic Simulation for a Graphene Cantilever Interacting with a Monolayer Graphene Sheet</p> <p>Grigoriadis K., Palaiologos A., Zavos A., Nikolakopoulos P.</p>
12:10 pm-12:30 pm	<p>1.4</p> <p>Surface Structure, Pore Characteristics and Mechanical Response of Aluminum Foam processed by Wire-EDM and Milling</p> <p>Michailidis N., Klink A., Smyrniaos E., Olivier M., Baklatzoglou N., Welschhof L., Stergioudi F.</p>	<p>2.4</p> <p>Enhancing the mechanical performance of multifunctional carbon fibre reinforced polymer/ carbon nanotube composites</p> <p>Rocha J., Vale D., Roch N., Santos R.M.</p>	<p>3.4</p> <p>Electromagnetic Analysis of Fuzzy Controlled Active Magnetic Bearings.</p> <p>Psonis Th., Nikolakopoulos P.G., Mitronikas E.</p>
12:30 pm-12:50 pm	<p>1.5</p> <p>Automated fabrication of hybrid thermoplastic prepreg material to be processed by In-Situ Consolidation Automated Fiber Placement process</p> <p>Barile Marco, Iannone Vincenzo, Lecce Leonardo</p>	<p>2.5</p> <p>Finite element modelling of air cavities effect on GnP/epoxy nanocomposite thermal response and its full-field validation</p> <p>Manta A., Gresil M., Soutis C.</p>	<p>3.5</p> <p>The Effect of Friction Force and Cavitation on Wear in Piston-Cylinder Assemblies</p> <p>Dellis P.S.</p>
12:50 pm-13:50 pm	Lunch		
13:50 pm-14:20 pm	Keynote Lecture: Dr. Howard Shrobe, Cyber safety for Control Systems		





	SESSION 4 (Room 1)	SESSION 5 (Room 2)	SESSION 6 (Room 3)
14:20 pm-16:00 pm	<p>Enabling Reliable and Resilient Approaches for IoT Applications</p> <p>Chairperson: Gialelis Yiannis</p>	<p>Modeling and Characterization of Composites</p> <p>Chairperson: Tserpes Konstantinos</p>	<p>Failure Analysis and Repair of Components I</p> <p>Chairperson: Haidemenopoulos Gregory</p>
14:20 pm-14:40 pm	<p>4.1</p> <p>Tackling Failure through Discovery of Semantic Neighbors Nodes in WSNs</p> <p>Dima S.F., Antonopoulos C., Koubias St.</p>	<p>5.1</p> <p>Prediction of mechanical properties of porous CFRP specimens by ANNs and X-ray CT data</p> <p>Stamopoulos A., Tserpes K., Dentsoras Arg.</p>	<p>6.1</p> <p>Stress-oriented hydrogen-induced cracking (SOHIC) in H2S environments</p> <p>Haidemenopoulos G.N., Kamoutsi H., Polychronopoulou K., Papageorgiou P., Altanis I., Dimitriadis P., Stiakakis M.</p>
14:40 pm-15:00 pm	<p>4.2</p> <p>Towards a resilient health status assessment employing intelligence in cyber physical systems</p> <p>Krizea M., Gialelis J., Panagiotou Ch., Koubias St.</p>	<p>5.2</p> <p>Finite Element Prediction of the Thermomechanical Response of Graphene Reinforced Nanocomposites</p> <p>Tsiamaki A.S., Anifantis N.K.</p>	<p>6.2</p> <p>Ageing effect on the creep performance of simulated weld HAZ for the steels X20 and P91</p> <p>Kafexhiu F., Podgornik B., Žužek B., Vodopivec F.</p>
15:00 pm-15:20 pm	<p>4.3</p> <p>A combined cyber and physical attack resilience scheme for Health Services Critical Infrastructure</p> <p>Papalambrou A., Gialelis J.</p>	<p>5.3</p> <p>Vibration-Based Damage Detection for a Composite Beam Under Environmental and Operational Variability via a Stochastic Functional Model Based Method</p> <p>Aravanis T.C.I., Kolovos Sp.D., Sakellariou J.S., Fassolis S.</p>	<p>6.3</p> <p>Copper tubing failure due to ant-nest corrosion</p> <p>Vazdirvanidis A., Papadopoulou S., Papaefthymiou S., Pantazopoulos G., Skarmoutsos D.</p>



	SESSION 4 (Room 1)	SESSION 5 (Room 2)	SESSION 6 (Room 3)
15:20 pm-15:40 pm	<p>4.4</p> <p>A comprehensive evaluation of cache utilization characteristics in large scale WSN considering network driven cache replacement techniques</p> <p>Panagiotou Ch., Antonopoulos C., Koubias St.</p>	<p>5.4</p> <p>Effective elastic moduli and strength of multiphase composites with randomly located particles</p> <p>Politi N, Poulou M., Papanikos P.</p>	<p>6.4</p> <p>Hydrogen Induced Crack Development in Submerged Arc Welded Steel Pipes</p> <p>Bouzouni M., Gavalas E., Chatzigeorgiou F., Papaefthymiou S.</p>
15:40 pm-16:00 pm	<p>4.5</p> <p>End Node Security and Trust vulnerabilities in the Smart City Infrastructure</p> <p>Fournaris A.P., Lampropoulos K., Koufopavlou O.</p>	<p>5.5</p> <p>Damage Identification of Large Scale Linear and Nonlinear Structural Systems using Finite Element Model Updating Techniques and Vibration Measurements</p> <p>Giagopoulos D., Arailopoulos A., Markogiannaki O.</p>	<p>6.5</p> <p>The influence of the structure and Cu₂O eutectic oxides presence on the susceptibility of copper to annealing</p> <p>Zasadzińska M., Knych T., Smyrak B., Jurkiewicz B.</p>
16:00 pm-16:20 pm	Coffee Break		

	SESSION 7 (Room 1)	SESSION 8 (Room 2)	SESSION 9 (Room 3)
16:20 pm-18:00 pm	<p>Fault detection and diagnosis in cyber-physical and industrial systems</p> <p>Chairperson: Kalogeras Athanasios</p>	<p>Multifunctional Composites for Aeronautical Applications</p> <p>Chairperson: Guadagno Liberata</p>	<p>Failure Analysis and Repair of Components II</p> <p>Chairperson: Pappada Silvio</p>
16:20 pm-16:40 pm	<p>7.1</p> <p>Responding to Failure Events in the Manufacturing Environment</p> <p>Anagnostopoulos Chr., Alexakos Chr., Koulamas Chr., Kalogeras A.P.</p>	<p>8.1</p> <p>Microencapsulated Self-Healing Composites</p> <p>Calabrese E., Longo P., Naddeo C., Mariconda A., Vertuccio L., Raimondo M., Guadagno L.</p>	<p>9.1</p> <p>The role of NDI on the failure analysis of a propeller blade hub</p> <p>Spyroglou I., Koutsomichalis Ang., Stavropoulos P., Roussis N.</p>



	SESSION 7 (Room 1)	SESSION 8 (Room 2)	SESSION 9 (Room 3)
16:40 pm–17:00 pm	<p>7.2</p> <p>Nonlinear optimal control for ship propulsion with the use of an induction motor and a drivetrain</p> <p>Rigatos G., Siano P., Serpanos D., Abbaszadeh M.</p>	<p>8.2</p> <p>Nanomaterial, a New Pathway to Change Boundary Conditions of Airfoil.</p> <p>Dala L., Lafdi K., Tarfaoui M.</p>	<p>9.2</p> <p>Investigation of In-service Creep Failures of Aircraft Ti-6Al-4V Bolts</p> <p>Spyroglou I., Kourousis K.I., Koutsomichalis Ang.</p>
17:00 pm–17:20 pm	<p>7.3</p> <p>Statistical condition monitoring for the quadruple water tank system</p> <p>Rigatos G., Serpanos D., Siadimas V., Siano P., Busawon K., Gao Z., Abbaszadeh M.</p>	<p>8.3</p> <p>CNT-based Membrane as an Emerging Material in De-icing Technology</p> <p>Tarfaoui M., Lafdi K., Dala L.</p>	<p>9.3</p> <p>Failure analysis of Rotating Blades of Low-pressure Steam Turbine Rotors and Possibility of Prediction Corrosion-fatigue Ruptures</p> <p>Kasl J., Matějová M., Mrštk J.</p>
17:20 pm–17:40 pm	<p>7.4</p> <p>An Open Source, Extensible Malware Analysis Platform</p> <p>Michalopoulos P., Ieronymakis V., Alrawi O., Khan M.T., Serpanos D.</p>	<p>8.4</p> <p>Covalent and non-covalent functionalization of carbon nanotubes: effect on thermal and mechanical properties of structural nanocomposites</p> <p>Raimondo M., Naddeo C., Vertuccio L., Bonnaud L., Murariu O. , Dumas L. , Dubois P., Binder W.H, Sorrentino A. , Guadagno L.</p>	<p>9.4</p> <p>Investigating the Wind Parks Location Impact on the Failure Rate of Contemporary Wind Turbines</p> <p>Georgoulopoulos P., Kaldellis A., Kaldellis J.</p>
17:40 pm–18:00 pm	<p>7.5</p> <p>UAV Cloud Operating System</p> <p>Ahmed Refaat Sobhy, Abeer Twakol Khalil, Mohamed M.Elfaqham, Atalla Hashad</p>	<p>8.5</p> <p>Nanocomposites for new Functionalities in Multiscale Composites.</p> <p>Volponi R., de Nicola F., Spena P.</p>	<p>9.5</p> <p>Development of the High Pressure Repair Dome (a Leonardo Patent) system for in-situ high performance repair of aeronautic structures</p> <p>Gallo N., Corvaglia S., Pappada S.</p>
18:00 pm	End of Day 1		
19:00 pm	Welcome Reception		



Homerion Cultural Center





Day 2		Thursday, June 21, 2018		
09:00 am–10:30 am	Registration			
09:00 am–09:30 am	Keynote Lecture: Prof. A. Strohmayer, New trends in aircraft design and their implications on structures and materials			
09:30 am–10:00 am	Keynote Lecture: Dr. S. Pappada, CETMA activities for the development of advanced manufacturing techniques for thermoplastic composite structures			
10:00 am–10:20 am	Coffee Break			
	SESSION 10 (Room 1)	SESSION 11 (Room 2)	SESSION 12 (Room 3)	
10:20 am–12:20 pm	Fracture Mechanisms of Metallic Alloys Chairperson: Zervaki Anna	Fatigue and Fracture of Engineering Materials and Structures Chairperson: Savaidis George	Design and Analysis of Components Chairperson: Yaman Yavuz	
10:20 am–10:40 am	10.1 Metallographic assessment of creep in cast tubes of heat resistant steels Zervaki A.D., Kamoutsi H., Alkhoori S.I., Polychronopoulou K., Jaffar S., Haidemenopoulos G.N	11.1 Numerical simulation of GLARE 4A fiber-metal laminates subjected to ballistic impact Bikakis G.S.E., Tsigkros N., Sideridis E.P., Savaidis A.	12.1 Design and Analysis of a Novel Mechanism for the Morphing of Trailing Edge of an Aircraft Wing Şahin H.L., Yavuz Y.	
10:40 am–11:00 am	10.2 Analysis of the critical conditions for the appearance of PLC instabilities in the Al-2.5Mg alloy. Chibane N., Ait-Amokhtar H.	11.2 Ballistic impact response of steel fiber-metal laminates Bikakis G.S.E., Tsigkros N., Sideridis E.P., Savaidis A.	12.2 Aerodynamic Modelling and Analysis of a Novel Mechanism for Chord and Camber Morphing Wing Çakır B.O., Şahin H.L., Yavuz Y.	



	SESSION 10 (Room 1)	SESSION 11 (Room 2)	SESSION 12 (Room 3)
11:00 am-11:20 am	<p>10.3</p> <p>Relation between Mechanical Properties and Casting Conditions on 356 Aluminium Alloy</p> <p>Gürsoy O., Erzi E., Dişpinar D.</p>	<p>11.3</p> <p>Ballistic impact response of 2024-T3 monolithic aluminum plates: prediction and comparison with GLARE 4A fiber-metal laminates</p> <p>Bikakis G.S.E., Tsigkros N., Sideridis E.P., Savaidis A.</p>	<p>12.3</p> <p>Parametric design and Finite Element Analysis of metallic tanks transporting dangerous goods</p> <p>Sykaras K., Malikoutsakis M., Loulas M., Mihailidis A.</p>
11:20 am-11:40 am	<p>10.4</p> <p>Shear failure of Aa2024 and AA7175 under high strain rate loading</p> <p>Gunasilan M., Longère P.</p>	<p>11.4</p> <p>Fatigue design and esting of automotive stabilizer bars</p> <p>Giannakis E., Sivena E., Malikoutsakis M., Savaidis G.</p>	<p>12.4</p> <p>In situ mechanical and electrical characterization of integrated thin film-supercapacitors in composite structures</p> <p>Petersen J., Geier S., Wierach P., Wiedemann M.</p>
11:40 am-12:00 pm	<p>10.5</p> <p>Strengthening and ductilizing of magnesium alloying with heavy rare earth elements</p> <p>Huang Y., Xu Y., You S., Kainer K.U., Hort N.</p>	<p>11.5</p> <p>Multiaxial Fatigue Life Calculation Model for Engineering Components in Rolling-Sliding Contact</p> <p>Basan R., Marohnić T.</p>	<p>12.5</p> <p>Failure Analysis of Performance Vehicle Transmission Gear</p> <p>Tsolakis A.D., Giannakopoulos K.I., Gkertzos A.</p>
12:00 pm-12:20 pm	<p>10.6</p> <p>Ultrasound Criteria of Plastic Deformation and Fracture in Structural Metals</p> <p>Lunev A.G., Nadezhkin M.V., Barannikova S.A., Zuev L.B.</p>	<p>11.6</p> <p>Selection of Fiber Orientation around Geometric Discontinuities in Design Against Failure of GFRP Laminates</p> <p>Fragoudakis Roselita</p>	<p>12.6</p> <p>Integrity Analysis of the Rainwater Pump Impeller</p> <p>Galatanu S.V., Muntean S., Marşavina L., Drăghici I.</p>
12:20 pm-13:20 pm	Lunch		

	SESSION 13 (Room 1)	SESSION 14 (Room 2)	SESSION 15 (Room 3)
13:20 pm–15:00 pm	<p>Nano-/micro-composites by design: methodologies and tools for enhanced properties against performance/reliability failure</p> <p>Chairperson: Charitidis Constantinos</p>	<p>Surface degradation (corrosion, wear, erosion) and environmental durability of materials</p> <p>Chairpersons: Lekatou Angeliki - Agathopoulos Symeon</p>	<p>Characterization Techniques of Materials Failure</p> <p>Chairperson: Atapek Hakan</p>
13:20 pm–13:40 pm	<p>13.1</p> <p>Fabrication of carbon nanotubes reinforced mortar specimens: evaluation of mechanical integrity and pressure-sensitive properties</p> <p>Karaxi E.K., Kanellopoulou I.A., Karatza A., Kartsonakis I.A., Charitidis C.A.</p>	<p>14.1</p> <p>Chemical Durability and Structure Property-Correlations in Strontium Borophosphate Glasses</p> <p>Karakassides M.A., Anastasopoulou M.D., Vasilopoulos K.C., Papayannis D.K., Koutselas I.</p>	<p>15.1</p> <p>On the precise measurement capability of the direct microscopic measurement method for wear volume characterization</p> <p>Türedi E.</p>
13:40 pm–14:00 pm	<p>13.2</p> <p>Hybrid superabsorbent polymer networks based on crosslinked poly (methacrylic acid) encapsulated with SiO₂ for novel applications</p> <p>Kanellopoulou I.A., Karaxi E.K., Karatza A., Kartsonakis I.A., Charitidis C.A.</p>	<p>14.2</p> <p>Microstructure and surface degradation properties of Al reinforced by Al₃W intermetallic compounds via different fabrication routes</p> <p>Lekatou A.G., Mpalanou M., Lentzaris K., Karantzalis A.E.</p>	<p>15.2</p> <p>Characterization of the High Temperature Oxidation Behavior of Iron Based Alloys Used as Exhaust Manifolds</p> <p>Gulsah Aktas Celik, Kahriman F., Atapek H.S., Polat S.</p>
14:00 pm–14:20 pm	<p>13.3</p> <p>Assessing the integrity of CFRPs through nanomechanical mapping: the effect of CF surface modification</p> <p>Koumoulos E.P., Kainourios P., Charitidis C.A.</p>	<p>14.3</p> <p>Solid particle erosion response of aluminum reinforced with tungsten carbide nanoparticles and aluminide particles</p> <p>Chantziara E., Lentzaris K., Lekatou A.G., Karantzalis A.E.</p>	<p>15.3</p> <p>Tribological Behavior of Heat Treated CuCrZr Alloy</p> <p>Gulsah Aktas Celik, Atapek H.S., Polat S.</p>
14:20 pm–14:40 pm	<p>13.4</p> <p>Tribological Behaviour of Electro-Brush Plated Graphene Oxide - Nickel Nanocomposite Coated 316 Austenitic Stainless Steel</p> <p>Shaojun Qi , Xiaoying Li, Dong H.</p>	<p>14.4</p> <p>Effect of environmental loading on the transport properties of CNT modified cement mortars</p> <p>Alafogianni P., Tragazikis I., Balaskas A., Barkoula N.M.</p>	<p>15.4</p> <p>Characterization of Fatigue Failed Aged Cu-Ni-Si Alloys</p> <p>Atapek H.S., Pantelakis S.G., Polat S., Chamos A.N., Aktaş Çelik G.</p>



	SESSION 13 (Room 1)	SESSION 14 (Room 2)	SESSION 15 (Room 3)
14:40 pm-15:00 pm	<p>13.5</p> <p>Enhancement of Mechanical Integrity of Advanced Composites using PMAA-Electropolymerised CF Fabrics</p> <p>Semitekolos D. A., Goulis P., Batsouli D., Koumoulos E. P., Zoumpoulakis L., Charitidis C.A.</p>	<p>14.5</p> <p>Accelerated corrosion performance of AISI 316L stainless steel concrete reinforcement used in restoration works of ancient monuments</p> <p>Tsouli E., Lekatou A.G., Siozos E., Kleftakis S.</p>	<p>15.5</p> <p>The Effect of Layer Architecture on the Tribological Behaviour of Coatings</p> <p>Gümtüş S., Polat S., Lackner J.M., Waldhauser W.</p>
15:00 pm-15:20 pm	Coffee Break		
	SESSION 16 (Room 1)	SESSION 17 (Room 2)	SESSION 18 (Room 3)
15:20 pm-17:40 pm	<p>Nano-/micro-composites by design: methodologies and tools for enhanced properties against performance/reliability failure</p> <p>Chairperson: Charitidis Constantinos</p>	<p>Fatigue of Metallic Materials</p> <p>Chairperson: Kermanidis Alexis</p>	<p>Characterization Techniques of Materials Failure</p> <p>Chairperson: Atapek Hakan</p>
15:20 pm-15:40 pm	<p>16.1</p> <p>The strategic role of Life Cycle Assessment in the problem of material criticality and the process from the raw materials to the intermetallics compounds</p> <p>Stergiou V.I., Morozinis A.K., Charitidis C.A</p>	<p>17.1</p> <p>Research of influence die geometry on fatigue strength and parameters of drawing process of EN AW-1370 wires</p> <p>Jurkiewicz B., Beata Smyrak, Tadeusz Knych, Michał Jabłoński, Małgorzata Zasadzińska</p>	<p>18.1</p> <p>Mechanical and Fractographical Characterization of Extruded Al-Mg-Si-Zr Alloys</p> <p>Kahruman F., Zeren M.</p>
15:40 pm-16:00 pm	<p>16.2</p> <p>Effect of Lignin and CNTs on the properties of melt-spun polymeric fibers</p> <p>Goulis P., Kartsonakis I.A., Mpalias K., Charitidis C.A.</p>	<p>17.2</p> <p>Local strain energy based fatigue assessment of cruciform welded joints: experimental data analysis and influence of hot-dip galvanization</p> <p>Viespoli L.M., Mutignani F, Remes H., Gulyas G., Berto F.</p>	<p>18.2</p> <p>Impact Fracture Behaviour of the Dissimilar Alloy 316L Hastelloy C276 Joint</p> <p>Tümer M., Atapek H.S., Kerimak M.Z., Uluvar F.</p>



	SESSION 16 (Room 1)	SESSION 17 (Room 2)	SESSION 18 (Room 3)
16:00 pm-16:20 pm	<p>16.3</p> <p>Plasma activation and functionalisation of carbon fibres for improved carbon fibre/ polymer matrix interfacial bonding</p> <p>Liang Y., Dong H., Li X.</p>	<p>17.3</p> <p>Low Cycle Fatigue behaviour of Al-TRIP steels</p> <p>Kermanidis A.T., Christodoulou Pl.</p>	<p>18.3</p> <p>A Fractographical Study on Dissimilar Weld Joints of SAF 2205 and Hastelloy C-276</p> <p>Çelikkol E., Tümer M., Atapek H.S., Kerimak M.Z.</p>
16:20 pm-16:40 pm	<p>16.4</p> <p>Analysis of the elastic properties of CNTs and their effect in polymer nanocomposites</p> <p>Laspalas M., Chiminelli A., Saenz C., Serrano F. Valero C.</p>	<p>17.4</p> <p>Testing of fatigue cracks under biaxial loading conditions to represent conditions of a metallic aircraft fuselage section</p> <p>Breitbarth E., Besel M., Schwinn J.</p>	<p>18.4</p> <p>Indirect determination of the mechanical properties of stochastic lattices</p> <p>Maliaris G., Stamoulis I., Sarafis I.T., Kavafaki S., Lazaridis T.</p>
16:40 pm-17:00 pm	<p>16.5</p> <p>Comparative study of deterioration of composite due to ice formation using strain, electromechanical impedance and guided waves</p> <p>Soman R., Malinowski P., Ostachowicz W.</p>	<p>17.5</p> <p>Fatigue crack growth in a Jeffcott rotor reducing the RUL considering nonlinear crack breathing and the crack - imbalance angle waves</p> <p>Palacios-Pineda L., Gómez-Mancilla J., Meda-Campaña J., Hernández-Montero F.</p>	<p>18.5</p> <p>Machine vision for defect determination during Automated Fibre Placement</p> <p>Fierro G.P.M., Meo M.</p>
17:00 pm-17:20 pm	<p>16.6</p> <p>Analysis of S0/A0 elastic wave mode conversion phenomenon in glass fibre reinforced polymers</p> <p>Wandowski T., Malinowski P., Ostachowicz W.</p>	<p>17.6</p> <p>Tensile, bend and fatigue behaviour of nanostructured HVOF and flame sprayed stellite coatings</p> <p>Koutsomichalis A., Vardavoulas M., Lontos A., Vaxevanidis N.</p>	<p>18.6</p> <p>A test method for the determination of the peel resistance of the bonded rubber lining of conveyor belt metal drums</p> <p>Papanikolaou S., Maropoulos A., Fasnakis D., Maropoulos S.</p>
17:20 pm-17:40 pm	<p>16.7</p> <p>Development of a novel on-line non-destructive inspection system for continuous production of composite materials</p> <p>Maistros George, Hartley John</p>	<p>17.7</p> <p>Fault tolerant area coverage control for multi-agent systems</p> <p>Papatheodorou Sotiris, Tzes Anthony</p>	<p>18.7</p> <p>Influence of shot peening treatment in erosion wear behavior of high chromium cast iron</p> <p>González-Suárez J., Peral-Martvnez L.B., Fernández-Pariente I.</p>
17:40 pm	End of Day 2		
20:30 pm	Conference Gala Dinner		





Day 3		Friday, June 22, 2018		
09:00 am-10:30 am	Registration			
09:00 am-09:30 am	Keynote Lecture: Dipl.Ing. J. Bachmann , Potential for the application of bio-composites containing natural fibres and bio-based thermoset resin systems			
09:30 am-10:00 am	Keynote Lecture: Dr. D. Lehmus , State of the Art and Emerging Trends in Additive Manufacturing: From Multi-Material processes to 3D printed Electronics			
10:00 am-10:15 am	Coffee Break			
10:15 am-12:15 pm	SESSION 19 (Room 1)	SESSION 20 (Room 2)	SESSION 21 (Room 3)	
	Structural Integrity of materials processed by additive manufacturing technologies Chairpersons: Diplas Spyros - Azar Amin	Failure Detection & Stress Analysis of Advanced Structural Materials Chairpersons: Mouzakis Dionysis - Stamoulis Constantinos	Advanced Manufacturing Techniques Chairperson: Katsiropoulos Christos	
10:15 am-10:35 am	High-resolution X-ray computed tomography at materials and products manufactured using conventional processing routes and additive manufacturing Invited Lecture: Prof. Zschech Ehrenfried	20.1 Composite Cylindrical Shells Under Combined Loading Charitidis P.J., Zacharopoulos D.A.	21.1 A Numerical Investigation of The Effect of Preform Length For The Fabrication of 1.5Lt PET Bottle Through The Injection Stretch Blow Molding Process Lontos A., Gregoriou A.	
	10:35 am-10:55 am	19.1 Weldability Aspects of Additive Manufactured Superalloys Andersson J.	20.2 Low-Velocity Impact Damage Assessment of Laminated Composite Structures Stamoulis K., Georgantzinou S.K., Giannopoulos G.I.	21.2 Life cycle assessment and cost analysis evaluation of a helicopter's canopy production using different manufacturing processes Loukopoulos A., Katsiropoulos Ch.V., Pantelakis Sp.



	SESSION 19 (Room 1)	SESSION 20 (Room 2)	SESSION 21 (Room 3)
10:55 am-11:15 am	<p>19.2</p> <p>Fracture toughness in additive manufacturing of superduplex stainless steel</p> <p>Eriksson M., Ren X., Akselsen O.M., Nyhus B.</p>	<p>20.3</p> <p>L-Fractional Derivative and Mechanics: Theory and Applications</p> <p>Lazopoulos A.K.,</p>	<p>21.3</p> <p>Obtaining of UV Curable PDMS by Hydrosilylation Reaction</p> <p>Jalagonia N.T., Kuchukhidze T.T.V., Darakhvelidze N.I., Sanaia E.E., Kalatozishvili L.A., Casa M., Sarno M.</p>
11:15 am-11:35 am	<p>19.3</p> <p>Method for estimating anisotropic fatigue properties of materials produced by powder bed fusion</p> <p>Even Wilberg Hovig, Amin S. Azar, Knut Sørby, Erik Andreassen</p>	<p>20.4</p> <p>Multiscale simulation of fullerene reinforced composite structures: From molecular dynamics to finite element continuum mechanics</p> <p>Giannopoulos G.I., Georgantzinou S.K., Tsiamakia A.S., Anifantis N.K.</p>	<p>21.4</p> <p>Polyamide 12/E-glass Fabric Composite Production with Dip-coating</p> <p>Bekem A., Ahmet Unal</p>
11:35 am-11:55 am	<p>19.4</p> <p>Metallurgical aspects of building multi-metal components through additive manufacturing processes</p> <p>Diplas Spyros, Amin S. Azar</p>	<p>20.5</p> <p>Experimental and Theoretical verification of a silicon micro-beam bending response</p> <p>Mouzakis D.E., Manoli Ch.</p>	<p>21.5</p> <p>Stainless steel matrix composites reinforced with ceramic particles through ingot casting process</p> <p>Kračun A., Tehovnik F., Kafexhiu F., Podgornik B.</p>
11:55 am-12:15 pm	<p>19.5</p> <p>Microstructural analysis of Additive Manufactured walls of AA5083 and AA4043 alloys produced by Cold Metal Transfer</p> <p>Martin Løvøy, Amin S. Azar, Ragnhild Aune, Spyros Diplas, Anette E. Gunnæs</p>	<p>20.6</p> <p>Acoustic Emission Testing: evaluation of damage in composite materials</p> <p>Mouzakis D.E.</p>	<p>21.6</p> <p>Application of alum-thermal and nitrogen methods for obtaining nano-composites</p> <p>Darakhvelidze Nino, Kovziridze Zviad, Nizharadze Natela, Tabatadze G., Mestvirishvili Z.</p>
12:15 pm-13:00 pm	Lunch		



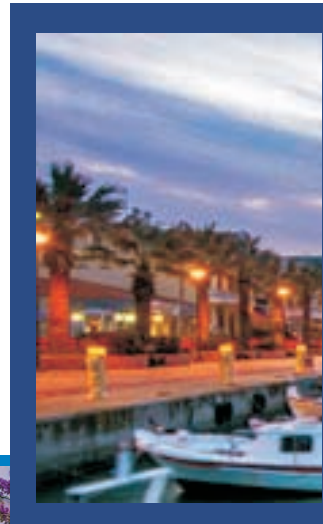
	SESSION 22 (Room 1)	SESSION 23 (Room 2)	SESSION 24 (Room 3)
13:00 pm-14:40 pm	<p>Advanced surfaces and materials for superior properties</p> <p>Chairpersons: Guagliano Mario - Berto Filippo</p>	<p>Failure Characterization of Components</p> <p>Chairperson: Dafnis Athanasios</p>	<p>Airframe damage and service life assessment in compliance with Damage tolerance philosophy</p> <p>Chairperson: Ruzek Roman</p>
13:00 pm-13:20 pm	<p>22.1</p> <p>Post-processing Additive Manufactured Parts for Enhanced Fatigue Performance</p> <p>Bagherifard S.</p>	<p>23.1</p> <p>A Non-Destructive Technique For Controlling Failure Formation in Composite Materials</p> <p>Dilman H., Frage N.</p>	<p>24.1</p> <p>Effect of interlaminar flaw on composite panel behaviour under acoustic loading</p> <p>Béhal J., Zdenek P.</p>
13:20 pm-13:40 pm	<p>22.2</p> <p>Fatigue Assessment of Semi-circular Notched Specimens Produced by Laser Engineered Net Shaping Method</p> <p>Razavi S.M.J., Bordonaro G., Ferro P., Berto F.</p>	<p>23.2</p> <p>Experimental Investigation of the Failure Modes of In-Plane Loaded Inserts in CFRP Sandwich Panels</p> <p>Richert P., Dafnis Ath., Schröder K-U.</p>	<p>24.2</p> <p>Bird and hail impact resistance analysis on jet engine composite air inlet</p> <p>Doubrava R., Oberthor M., Belský P., Raška J.</p>
13:40 pm-14:00 pm	<p>22.3</p> <p>Investigating the Hybrid Metal Extrusion & Bonding (HYB) Process for Butt Welding of an Aluminium Alloy</p> <p>Sandnes L., Grong Ø., Torgersen J., Berto F.</p>	<p>23.3</p> <p>Non-destructive Testing Ferromagnetic Structures by Magneto-Mechanical Memory (MMM) Technique</p> <p>Juraszek J.</p>	<p>24.3</p> <p>Full scale fatigue test and failures analysis of Advanced Jet Trainer wing</p> <p>Horak V., Novotny D.</p>



	SESSION 22 (Room 1)	SESSION 23 (Room 2)	SESSION 24 (Room 3)
14:00 pm-14:20 pm	<p>22.4</p> <p>Kinetic rather than thermal energy for additive manufacturing of load bearing elements: cold spray set against SLM freeform fabrication</p> <p>Bagherifard S., Monti S., Riccio M., Kondás J., Guagliano M.</p>	<p>23.4</p> <p>Mitigation of Turbine Vane Shock Waves Through Trailing Edge Cooling</p> <p>Cakir B.O., Saracoglu B.H.</p>	<p>24.4</p> <p>Thickness effect analysis on fatigue crack propagation of 7475 plate material under variable amplitude loading</p> <p>Šedek J., Ružek R.</p>
14:20 pm-14:40 pm	<p>22.5</p> <p>A Review of Hot Cracking Mechanisms in Welding</p> <p>Manitsas D., Andersson J.</p>	<p>23.5</p> <p>Failure analysis of two cold cutting tools. Case studies.</p> <p>Medrea C., Fragkos-Livanios L., Giannakopoulos K.I., Statharas D.</p>	<p>24.5</p> <p>Nondestructive Methods for Damage Assessment of Composite Sandwich Structures</p> <p>Belský P., Kadlec M.</p>

	SESSION 25 (Room 1)	SESSION 26 (Room 2)	SESSION 27 (Room 3)
14:40 pm-16:00 pm	<p>Additive Manufacturing Topology Optimization</p> <p>Chairperson: Labeas George</p>	<p>Characterization of metallic alloys</p> <p>Chairperson: Medrea Carmen</p>	<p>Material Degradation and Structural Integrity</p> <p>Chairperson: Apostolopoulos Charis</p>
14:40 pm-15:00 pm	<p>25.1</p> <p>Failure Behavior of Pa12 Based SLS Lattice Structure with Macro-Porosity</p> <p>Serap Gümüş, Lackner J.M., Polat S. , Kraschitzer W., Hanning H., Bayram A., Kaya M., Çalli M, Alkan A.</p>	<p>26.1</p> <p>Characterization of laser-borided Nimonic 80A-alloy</p> <p>Kieruj P., Makuch N., Przestacki D.</p>	<p>27.1</p> <p>Contiguous Notches Interaction on Ck45 Shaft under Reversed Bending Loading: Experimental, Metallographical and Analytical Approach</p> <p>Tsolakis A.D., Giannakopoulos K.I., Makarigakis E.</p>

	SESSION 25 (Room 1)	SESSION 26 (Room 2)	SESSION 27 (Room 3)
15:00 pm-15:20 pm	<p>25.2</p> <p>Investigation of sandwich structures with cellular cores produced by Selective Laser Melting</p> <p>Labeas George</p>	<p>26.2</p> <p>Influence of strain rate on ductile versus brittle fracture for ductile cast iron EN-GJS-500-14 in V-notch three-point bending tests</p> <p>Ahmad M., Lindkvist J., Andersson M.</p>	<p>27.2</p> <p>The reactions of the “beam-foundation” system to the sudden change of the boundary conditions</p> <p>Gordon V.A., Pilipenko O.V., Trifonov V.A.</p>
15:20 pm-15:40 pm	<p>25.3</p> <p>Design Right Once for Additive Manufacturing case studies</p> <p>Tsakiris A., Salpistis C., Mihailidis A.</p>	<p>26.3</p> <p>Microstructure characterization of Inconel 718 after laser assisted turning</p> <p>Chwalczuk T., Przestacki D., Szablewski P., Felusiak A.</p>	<p>27.3</p> <p>The size effect of rebars, on the structural integrity of reinforced concrete structures, which are exposed to corrosive environments.</p> <p>Drakakaki Arg., Apostolopoulos Ch.</p>
15:40 pm-16:00 pm	<p>25.4</p> <p>Electrical study on PLA reinforced with carbon-based particles for three dimensional printing of components and functional devices for aircraft applications</p> <p>Lamberti P., Raimo R., Spinelli G., Tucci V., Kotsilkova R., Ivanov E.</p>	<p>26.4</p> <p>Fracture analysis of a cooling water pump shaft</p> <p>Papageorgiou D.G., Kovsenoglou K.A., Kouklakis F.A., Medrea C.</p>	<p>27.4</p> <p>The use of approximate methods of seismic assessment of structures</p> <p>Basdeki M., Drakakaki Arg., Apostolopoulos Ch.</p>
16:00 pm	End of Conference		



Chios Island, Greece



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