11<sup>th</sup> International Conference on Structural Analysis of Advanced Materials

#### **ICSAAM 2024**

October 06-10, 2024

Grecian Park Hotel

Protaras (Paralimni),

Cyprus

**DETAILED PROGRAM** 



### Reception Party

ICSAAM 2024 - Reception Party Sunday Oct 6th, 2024

18:00 - 20:00pm

Location: Pavilion at Grecian Park Hotel

We look forward to welcoming all participants, colleagues and friends coming from several different countries of the world with Cyprus wines and cuisine at a spot with beautiful sea view in Protaras, Cyprus.

Dress code: Casual

• Please note: The Conference Reception is included in your fee



# Conference Main Hall (A)

G. Seferis Hall



# Opening Ceremony Monday, October 7<sup>th</sup>, 2024

- 8:15-9:00 Conference Registration
- 9:00-9:15 Welcome speech from the co-chairs of ICSAAM 2024:
- V. Drakonakis, G. Papanicolaou, G. Jiga, O. Dalverny, A. T. Marques, A. D'Amore
- 9:15-9:25 Greetings from: C. Soutis, J. Botsis, and H. Doumanidis
- 9:25-9:30 The official launch of ICSAAM 2024

October 6<sup>th</sup> to 10<sup>th</sup>

Short Program

Protaras, Cyprus

Sunday, October 6th					
Welcome Party* at the Pavilion at Grecian Park Hotel					
	Monday	Tuesday		nesday	Thursday
	October 7th	October 8th		er 9th	October 10th
	SESSION 1A	SESSION 4A	SESSI	ON 6A	SESSION 9A
09.00-09.30	ICSAAM 2024 OPENING CEREMONY	PL.4A.1	PL.	6A.1	SUMMER
09:30-10:00	PL.1A.1	PL.4A.2	PL.	6A.2	SCHOOL
10:00-10:30	PL.1A.2	PL.4A.3	PL.	6A.3	SCHOOL
10:30-11:00	PL.1A.3	PL.4A.4	PL.	6A.4	
11:00-11:15	Coffee Break	Coffee Break	Coffee	Break	Coffee Break
	SESSION 2A	SESSION 5A	SESSI	ON 7A	
11:15-11:45	PL.2A.1	PL.5A.1	PL.	7A.1	
11:45-12:10	KNL.2A.2	KNL.5A.2	KNL	.7A.2	SUMMER
12:10-12:30	P.2A.3	P.5A.3	P.7	'A.3	SCHOOL
12:30-12:50	P.2A.4	P.5A.4	P.7	'A.4	
12:50-14:00	Lunch	Lunch	Lu	nch	ICSAAM 2024 CLOSING CEREMONY
	SESSION 3A		SESSI	ON 8A	
14:00-14:25	KNL.3A.1		KNL.8A.1		
14:25-14:45	P.3A.2		P.8A.2	SUMMER	
14:45-15:05	P.3A.3	EXCURSION TO	P.8A.3	SCHOOL	
15:05-15:30	Coffee Break	NICOSIA	Coffee	Break	
15.30-15.50	P.3A.4		P.8A.4		
15.50-16.10	P.3A.5		P.8A.5		
16.10-16.30	P.3A.6		P.8A.6	SUMMER	
16:30	END OF ORAL PPTS		END OF ORAL PPTS	SCHOOL	
16:30 - 17:30	RAPIDFIRE POSTER SESSION: Main Hall				
18:00				END OF SUMMER SCHOOL	
20:00	Free Evening	**Oriental Dinner at Nicosia	*Gala	Dinner	
	Main Hall (A): G. SEFERIS	PL: Plenary Lecture		*Paid by the	
Nomenclature	Hall (B): Hosrizon Hall	KNL: Keynote Lecture P: Oral Presentation		**Paid by the excursion fe	e Conference within the
			-		

Monday Oct 7 <sup>th</sup>	Session 1A Plenary Lectures Advanced Composite Materials
Session 1A Co-Chairmen:	<ul> <li>Vassilis Kostopoulos, Professor at Applied Mechanics Laboratory, Dept of Mechanical Engineering and Aeronautics, University of Patras, Greece</li> <li>Olivier Dalverny, Professor at Laboratoire Génie de Production (LGP), École Nationale d'Ingénieurs de Tarbes – ENIT, France</li> </ul>
09:30-10:00	<b>PL.1A.1 John Botsis,</b> Professor Emeritus, Institute of Mechanical Engineering, School of Engineering, Ecole Polytechnique Federale de Lausanne, EPFL, Lausanne, Switzerland "Fracture toughness characteristics of layered composites"
10:00-10:30	PL.1A.2 Haris Doumanidis, Professor and Technical Advisor at AmaDema – Advanced Materials Design & Manufacturing ltd, Nicosia, Cyprus "Structural Analysis and Simulation of Nanostructured Bimetallic Particulates During Ball Milling Manufacturing"
10:30-11:00	PL.1A.3 George Papanicolaou, Professor Emeritus, Department of Mechanical and Aeronautics Engineering, University of Patras, Greece "Effect of Thermal-Shock Cycling and Thermal Cycling on Polymer Composites Behavior"
11:00-11:15	Coffee Break

Monday Oct 7 <sup>th</sup>	Session 2A Plenary and Oral Presentations Fracture Toughness and Damage Tolerance
Session 2A Co-Chairmen:	<ul> <li>Dionysis Mouzakis, Professor, Laboratory of Mechanics Department of Military Studies Hellenic Army Academy, Greece</li> <li>Stefanos Zaoutsos, Professor, Department of Energy Systems, University of Thessaly, Greece</li> </ul>
11:15-11:45	PL.2A.1 Kaliopi-Artemi Kalteremidou, PhD, Department of Mechanics of Materials and Constructions (MeMC), Vrije Universiteit Brussel (VUB), Brussels, Belgium.  "Acoustic emission in polymer composites: early damage detection for prediction of the structural performance"
11:45-12:10	KNL.2A.2 Athanasios Baltopoulos, Director at ADAMANT Composites, Greece "Tentative: Advanced nano-enabled composite materials for Space structures"
12:10-12:30	<b>P.2A.3 Thanasis Chatziathanasiou</b> , Researcher, The Composite Materials Group at Katholieke Universiteit Leuven, Belgium "Transverse tension of single-fibre composites coupled with in-situ synchrotron holotomography"
12:30-12:50	<b>P.2A.4 Panayiotis Tsokanas</b> , Researcher, The Composite Materials Group at Katholieke Universiteit Leuven, Belgium "Observing mode II delamination migration in fibre-reinforced composites using in-situ X-ray computed tomography"
12:50-14:00	Lunch Break

Monday Oct 7 <sup>th</sup>	Session 3A Plenary and Oral Presentations Advanced Materials and Nano-composite Applications
Session 3A Co-Chairmen:	<ul> <li>Theodora Krasia, Professor, Mechanical and Manufacturing Engineering, University of Cyprus, Cyprus</li> <li>Athanasios Baltopoulos, PhD Director at ADAMANT Composites, Greece</li> </ul>
14:00-14:25	<b>KNL.3A.1 Elias Yfantis,</b> Professor and Program Coordinator at Mechanical Engineering – University of Nicosia Director, Research Excellence Assurance – Cyprus Marine and Maritime Institute, Cyprus Innovative Composite Materials: Enhancing Sustainability and Resilience in the Maritime Industry
14:25-14:45	<b>P.3A.2 Ioanna Savva,</b> PhD, AmaDema – Advanced Materials Design & Manufacturing ltd, Nicosia, Cyprus "Exploring the world of polymer nanofibers: opportunities and challenges"
14:45-15:05	<b>P.3A.3 Thanasis Kotrotsos,</b> PhD Applied Mechanics Laboratory, Dept of Mechanical Engineering and Aeronautics, University of Patras, Greece "Development of high-sensitive thermoplastic polyurethane/SWNTs strain-sensors through electrospinning process technique"
15:05-15:30	Coffee Break - Networking

Monday Oct 7 <sup>th</sup>	Session 3A Plenary and Oral Presentations Nanomaterials and Advanced Materials	
Session 3A Co-Chairmen:	<ul> <li>Theodora Krasia, Professor, Mechanical and Manufacturing Engineering, University of Cyprus, Cyprus</li> <li>Athanasios Baltopoulos, PhD, Director at ADAMANT Composites, Greece</li> </ul>	
15:30-15:50	<b>P.3A.4 Marios Constantinou,</b> PhD, University of Nicosia, Research and Technology Building, 8 Markou Drakou, Nicosia, Cyprus "Polymer Derived Carbon Foam: Synthesis, Characterization and Application"	
15:50-16:10	<b>P.3A.5 Maria Karouzou</b> , Researcher at AmaDema – Advanced Materials Design & Manufacturing ltd, Nicosia, Cyprus "Development and Evaluation of Hydrophobic Electrospun Nanofibrous Mats for Enhancing Water Repellency in Fuel Filter Media"	
16:10-16:30	<b>P.3A.6 Costea Mihai,</b> Researcher, University Politehnica of Bucharest, Romania "The determination of equivalent moment acting in kinematic joints of an exoskeleton using rigid body dynamics analysis"	

# RAPIDFIRE POSTER SESSION - INSTRUCTIONS Main Hall – G. Seferis Monday, October 7<sup>th</sup>, 2024 at 16.30

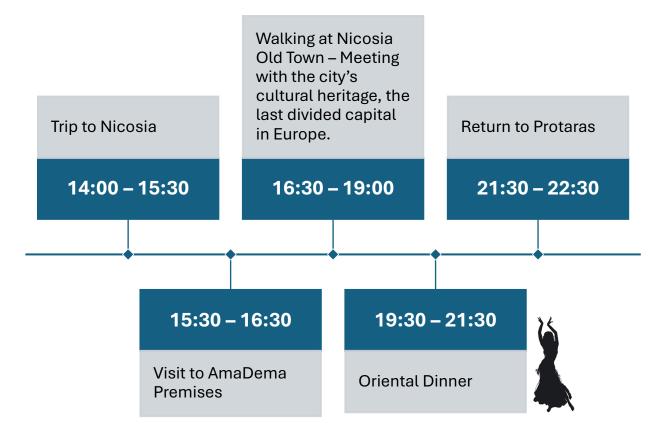
- Rapid-Fire Presentations Procedure: The Rapid-Fire Presentation format is an exciting oral presentation style. You have three-five minutes to present your paper (no longer than five minutes), followed by two minutes for Q&A. Irrespective of how complex your research, you can do this in the allotted time.
- **Presentation template:** When creating a five-minute presentation, plan to present a slide per minute. The five slides, in order, include a Title/Author/Affiliation slide, an Outline slide, a Problem Description/Motivation slide, a Proposed Approach/Alternative slide, and a Summary/Conclusion slide. The title slide names your presentation.

Monday Oct 7 <sup>th</sup>	RAPIDFIRE POSTER SESSION
Session Co-Chairmen:	<ul> <li>Ioannis Ioannou, PhD (i) AmaDema – Advanced Materials Design &amp; Manufacturing ltd, Nicosia Cyprus, and (ii) Mechanical and Manufacturing Eng. Dept. of University of Cyprus.</li> <li>Lykourgos Kontaxis, PhD, Department of Energy Systems, University of Thessaly, Greece</li> </ul>
16:30	Christos Vlassis, Mechanical Engineering and Aeronautics, University of Patras, Greece "Biodegradation of biomedical polyurethane in a body like micro-environment"
16:35	Maria Karouzou, AmaDema, Cyprus, "Sustainable Nanofibers for Sound Insulation Applications"
16:40	Gifrandy Gustiraharjo, University of Patras, Greece "Monitoring Human Cells Development on Innovative Biomaterials"
16:45	John Kapolos, Department of Food Science and Technology, University of the Peloponnese, Greece "Impact of Oil Type and Concentration on Nano-emulsion Stability and Droplet Size"
16:50	Klaudia Piekarska and Monika Sikora, Łukasiewicz Research Network -Łodz Institute of Technology, Poland "The human HaCaT keratinocyte line as a model for testing the cytotoxicity of materials useful in regenerative medicine"
16:55	<b>Ionut-Cristian Perederic</b> , University Politehnica of Bucharest, Romania, "Experimental tests for analyzing the elastic behavior of different types of plastic materials used in 3D printing"
17:00	<b>Cornelia Bandas</b> , University Politehnica of Bucharest, Romania, "One-step microwave-assisted hydrothermal synthesis of doped TiO <sub>2</sub> nanoparticles"

Tuesday Oct 8 <sup>th</sup>	Session 4A  Plenary Lectures  Fracture Toughness and Damage Tolerance
Session 1A Co-Chairmen:	<ul> <li>John Botsis, Professor Emeritus, Institute of Mechanical Engineering, School of Engineering, Ecole Polytechnique Federale de Lausanne, EPFL, Lausanne, Switzerland</li> <li>Tatjana Glaskova-Kuzmina, Associate Professor, University of Latvia, Latvia</li> </ul>
09:00-09:30	<b>PL.4A.1 Alberto D'Amore,</b> Professor, University of Campania Luigi Vanvitelli (formerly The Second University of Naples-SUN) · Engineering, Italy "Damage progression of composites subjected to variable amplitude loadings"
09:30-10:00	<b>PL.4A.2 Olivier Dalverny,</b> Professor at Laboratoire Génie de Production (LGP), École Nationale d'Ingénieurs de Tarbes –ENIT, France "Adhesion Characterisation of new Chromium Deposits for Aerospace Applications"
10:00-10:30	<b>PL.4A.3 Dionysis Mouzakis</b> , Professor, Laboratory of Mechanics Department of Military Studies Hellenic Army Academy, Greece "Ballistic impact behaviour of low-cost polymer composite multi-layered armor plates"
10:30-11:00	<b>PL.4A.4 – Panel Discussion:</b> Education of Polymer Composite Materials: Needs and Challenges <i>Prof D'Amore, Prof Dalverny, Prof Papanikolaou, Prof Kostopoulos, Prof Doumanidis, Prof Mouzakis, Prof Zaoutsos</i>
11:00-11:15	Coffee Break

Tuesday Oct 8 <sup>th</sup>	Session 5A Plenary and Keynote Presentations Coatings, Joints, and Adhesives
Session 5A Co-Chairmen:	<ul> <li>Alberto D'Amore, Professor, University of Campania Luigi Vanvitelli (formerly The Second University of Naples-SUN) Engineering, Italy.</li> <li>Aron Gabor, Professor at University of Lyon, France.</li> </ul>
11:15-11:45	<b>PL.5A.1 Stefanos Zaoutsos</b> , Professor, Department of Energy Systems, University of Thessaly, Ring road Larissas-Trikalon, Gaiopolis, Greece "A parametric dimensional analysis of a shaft exosceleton mechanism on the basis of analytical and numerical evaluation"
11:45-12:10	<b>KNL.5A.2 Peter Massanyi,</b> Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, Nitra, Slovak Republic, "ZnO nanoparticles and cell model: The effect on spermatozoa mobility and viability parameters in vitro"
12:10-12:30	P.5A.3 Alessandro De Zanet, CTIO Materials Labs, Leonardo SpA., Italy "Surface engineering to enhance interlocking in CFRP-metal joints for aviation"
12:30-12:50	<b>P.5A.4 Evanthia Pappa,</b> CTIO Materials Labs, Leonardo SpA. Italy "Specifications and mechanical performance of novel hybrid joint for aerospace applications"
12:50-14:00	Lunch Break

# EXCURSION TO NICOSIA Tuesday, October 8<sup>th</sup>, 2024



A Tour guide will escort the group during the excursion

Please note that the Excursion to Nicosia is not included to standard fee. Please find more details to buy your ticket here: <a href="https://icsaam2024.eu/product/conference-excursion/">https://icsaam2024.eu/product/conference-excursion/</a>



Wednesday Oct 9 <sup>th</sup>	Session 6A  Plenary Lectures  Advanced Engineering and Processing
Session 6A Co-Chairmen:	<ul> <li>George Papanicolaou, Professor Emeritus, Dept of Mechanical and Aeronautics Engineering, University of Patras, Greece</li> <li>Kaliopi-Artemi Kalteremidou, PhD, Department of Mechanics of Materials and Constructions (MeMC), Vrije Universiteit Brussel (VUB), Brussels, Belgium.</li> </ul>
09:00-09:30	<b>PL.6A.1 Vassilis Kostopoulos,</b> Professor at Applied Mechanics Laboratory, Dept of Mechanical Engineering and Aeronautics, University of Patras, Greece "Stepped lap repair of thick CFRP composite laminates"
09:30-10:00	PL.6A.2 Theodora Krasia, Professor at Mechanical and Manufacturing Engineering, University of Cyprus. "Tuning the mechanical properties in structure-defined hydrogels"
10:00-10:30	<b>PL.6A.3 Tatjana Glaskova-Kuzmina,</b> Associate Professor, University of Latvia, Latvia. "Tensile, thermophysical and flame-retardant properties of 3d printed parts made from polyetherimide and polyetherketoneketone"
10:30-11:00	<b>PL.6A.4 Aron Gabor,</b> Professor at University of Lyon, France. "Investigation of the cyclic shear behaviour of reinforced concrete beams using advanced measurement techniques"
11:00-11:15	Coffee Break

Wednesday Oct 9 <sup>th</sup>	Session 7A  Plenary and Oral Presentations  Advanced Manufacturing incl. Additive Manufacturing		
Session 7A Co- Chairmen:	<ul> <li>Gheorghe-Gabriel Jiga, Professor at University Politehnica of Bucharest, Romania</li> <li>Ioannis Ioannou, PhD (i) AmaDema – Advanced Materials Design &amp; Manufacturing ltd, Nicosia Cyprus, and (ii) Mechanical and Manufacturing Eng. Dept. of University of Cyprus.</li> </ul>		
11:15-11:45	<b>PL.7A.1 Claus Rebholz,</b> Professor at Mechanical and Manufacturing Engineering Dept, University of Cyprus.  "A New Recycling Technology to Produce Premixed Thermal Insulating Mortars from Polyurethane and Polystyrene Waste Foams"		
11:45-12:10	KNL.7A.2 Ioannis Ioannou, PhD (i) AmaDema – Advanced Materials Design & Manufacturing ltd, Nicosia Cyprus, and (ii) Mechanical and Manufacturing Eng. Dept. of University of Cyprus. "Stiffness and Damping Properties of CFRP cross-ply Lay-up with Nanofibrous Interlayer: A Dynamic Approach"		
12:10-12:30	<b>P.7A.3 Lykourgos Kontaxis</b> , PhD, Department of Energy Systems, University of Thessaly, Greece "Effect of printing parameters on the structural characteristics of 3D printed PLA exoprosthesis parts"		
12:30-12:50	P.7A.4 Ionut-Christian Perederic, PhD, University Politehnica of Bucharest, Romania "Tensile and compressive mechanical behavior of post-cured SLA printed resins"		
12:50-14:00	Lunch Break		

Wednesday Oct 9 <sup>th</sup>	Session 8A  Keynote and Oral Presentations  Engineering Analysis and Processing
Session 8A Co-Chairmen:	<ul> <li>Claus Rebholz, Professor at Mechanical and Manufacturing Engineering Dept, University of Cyprus.</li> <li>Katerina Sofocleous, PhD, AmaDema – Advanced Materials Design &amp; Manufacturing ltd, Nicosia, Cyprus.</li> </ul>
14:00-14:25	<b>KNL.8A.1 Konstantinos Marakkos</b> , Professor at Mechanical and Manufacturing Engineering Dept, University of Cyprus.  "Numerical simulations on the thermal insulation performance of natural and recycled textile fibers"
14:25-14:45	<b>P.8A.2 Ashok kumar Swaminathan,</b> PhD, Marine and Offshore Science, Technology, and Engineering Centre, CMMI Cyprus Marine and Maritime Institute, Larnaca 6023, Cyprus "Investigation on slamming load characteristics of a composite hull at different operational profiles"
14:45-15:05	<b>P.8A.3 Vangelis Harmandaris</b> , Professor and <b>Panayiota Katsamba</b> , Post-doctoral researcher, Computation-based Science & Technology Research Center (CASTORC), The Cyprus Institute, Cyprus "Predicting mechanical heterogeneity in glassy polymer nanocomposites: an inverse multiscale methodology"
15:05-15:30	Coffee Break - Networking

Wednesday Oct 9 <sup>th</sup>	Session 8A  Keynote and Oral Presentations  Engineering Analysis and Processing
Session 8A Co-Chairmen:	<ul> <li>Claus Rebholz, Professor at Mechanical and Manufacturing Engineering Dept, University of Cyprus.</li> <li>Katerina Sofocleous, PhD, AmaDema – Advanced Materials Design &amp; Manufacturing ltd, Nicosia, Cyprus.</li> </ul>
15:30-15:50	<b>P.8A.4 Savvas Assiotis,</b> Researcher at AmaDema – Advanced Materials Design & Manufacturing ltd, Nicosia, Cyprus. "Development and Characterization of Sustainable Sandwich Panels with Posidonia Oceanica Facesheets and Recycled Textiles Core"
15:50-16:10	<b>P.8A.5 Grigoris Petropoulos,</b> MSc, Applied Mechanics Laboratory, Dept of Mechanical Engineering and Aeronautics, University of Patras, Greece "An innovative and environmentally friendly method for recycling of GFRP structures through the combination of solvolysis and thermolysis."
16:10-16:30	<b>P.8A.6 Catalina Enache,</b> PhD, University Politehnica of Bucharest, Romania "Theoretical and experimental research on the optimal printing degree of a polylactide material"

# Summer School Thermal Analysis of Polymer Composite Materials In honor of Professor James C. Seferis

OCT 9TH 14:00-18:00

OCT 10TH 08:30-12:30



#### Subjects:

Introduction to Thermal Analysis TMA-Thermo-Mechanical Analysis DSC-Differential Scanning Calorimetry DMA-Dynamic Mechanical Analysis

(Practical approach, theory support and explanations, industrial applications, material characterization, properties inspection)

#### REGISTER HERE

\*Special prices for students



For more information contact us at icsaam2024@amdmcomposites.com



Wednesday Oct 9 <sup>th</sup>	Session 9B SUMMER SCHOOL – Thermal Analysis of Polymer Composites
Session 9B Speakers:	<ul> <li>George Papanicolaou, Dept. MEAD, UoPatras</li> <li>Ioannis Ioannou, AmaDema</li> </ul>
14:00-15:30	Introduction to Thermal Analysis of Polymer Composites
15:30-16:00	Coffee Break
16:00-17:30	TMA – Thermo-Mechanical Analysis

Thursday Oct 10 <sup>th</sup>	Session 10A SUMMER SCHOOL – Thermal Analysis of Polymer Composites
Session 10B Speakers:	<ul> <li>George Papanicolaou, Dept. MEAD, UoPatras</li> <li>Ioannis Ioannou, AmaDema</li> </ul>
09:00-10:30	DSC – Differential Scanning Calorimetry
10:30-11:00	Coffee Break
11:00-12:30	DMA – Dynamic Mechanical Analysis



## GALA DINNER Wednesday, October 9<sup>th</sup>, 2024

- Traditional Restaurant "PINIA"
- Traditional and Folklore Cyprus Live Music and Dances
- At 20:00
- Buses will transfer you from the hotel to the Restaurant (15 min ride)
- Please note: The Gala Dinner is included in your fee



#### Closing Ceremony – Thursday, Oct 10<sup>th</sup>, 2024

- 12:30-12:45 Speeches delivered by ICSAAM 2023 Co-chairmen
- 12:45-13:00 Announcement of Best Young Scientists & Honorable Mention Awards
- 13:00-13:15 Announcement of the next ICSAAM Conference
- 13:15-13:30 Speech delivered by the next ICSAAM Conference Chairman
- 13:30 Conference is Declared

