

Monday, 1st of September 2025

08:00	Registration and coffee					
09:00	Opening Ceremony					
09:15	<p>Plenary Lecture: Professor Adam Sobey, <i>Programme Director for Data-Centric Engineering at The Alan Turing Institute, UK</i></p> <p>CURRENT AND FUTURE TRENDS IN DATA-CENTRIC ENGINEERING FOR LIGHTWEIGHT STRUCTURES</p> <p>Chair: Michael Wisnom, <i>University of Bristol, UK</i></p>					
Session 1				Session 2		
AI-Driven Process Modelling and Simulation in Composites Chair: Jonathan Belnoue, University of Bristol, UK				Mechanical Behaviour and Failure Prediction with AI Chair: Navid Zobeiry, University of Washington, USA		
Time	Type of presentation	Authors	Title	Type of presentation	Authors	Title
10:10	Keynote	Arghyanil Bhattacharjee ¹ , Kamyar Gordnian ³ , Reza Vaziri ¹ , Trevor Campbell ² and Anoush Poursartip^{1,3} ¹ <i>Composites Research Network, Departments of Materials Engineering and Civil Engineering, The University of British Columbia, Vancouver, BC, Canada</i> ² <i>Department of Statistics, The University of British Columbia, Vancouver, BC, Canada</i> ³ <i>Convergent Manufacturing Technologies, Vancouver, BC, Canada</i>	AN UNCERTAINTY QUANTIFICATION FRAMEWORK FOR THERMAL MANAGEMENT IN COMPOSITES MANUFACTURING	Keynote	Wenbin Yu¹ , Banghua Zhao ¹ and R. Byron Pipes ² ¹ <i>School of Aeronautics and Astronautics, Purdue University, USA,</i> ² <i>College of Engineering, Purdue University, USA</i>	ADVANCING MULTISCALE MODELING OF COMPOSITES THROUGH ARTIFICIAL INTELLIGENCE
10:40	Oral	Salman Zafar ^{1,2} , Mustafa Unel ^{1,2} and Hatice S. Sas^{1,2,3} ¹ <i>Faculty of Engineering and Natural Sciences, Sabanci University, Orhanli-Tuzla, Istanbul, Turkey</i> ² <i>Integrated Manufacturing Technologies Research and Application Center, Sabanci University, Orhanli-Tuzla, Istanbul, Turkey</i> ³ <i>School of Mechanical, Aerospace and Civil Engineering, The University of Sheffield, UK</i>	DETECTING DEFECTS AND DISSIMILAR REGIONS IN LIQUID COMPOSITE MOLDING: A DEEP LEARNING BASED APPROACH TO RESIN FLOW MONITORING	Oral	Luca Patrignani , Silvestre T. Pinho <i>Department of Aeronautics, Imperial College London, London, UK</i>	GRAPH NEURAL NETWORKS FOR EFFICIENT PREDICTION OF MECHANICAL RESPONSE IN COMPOSITE STRUCTURES WITH MODELS USING UNSTRUCTURED MESHES
11:00	Oral	Jimmy G. Jean, Guillaume Broggi and Baris Caglar <i>Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, the Netherlands</i>	IMAGE-BASED AI MODEL FOR PREDICTION OF MICROFLOW IN PROCESSING OF COMPOSITES	Oral	Jacintha Y.Y. Loh , Vincent B.C. Tan and Tong-Earn Tay <i>Department of Mechanical Engineering, National University of Singapore, Singapore</i>	OPEN-HOLE TENSION STRENGTH PREDICTION WITH MACHINE LEARNING
11:20	Coffee Break					

Session 1				Session 2		
AI-Driven Process Modelling and Simulation in Composites Chair: Baris Caglar, TU Delft, Netherlands				Mechanical Behaviour and Failure Prediction with AI Chair: Paolo Andrea Carraro, University of Padova, Italy		
11:50	Oral	<p>S. Fernández-León^{1,2}, D. Mocerino², J. Fernández-León¹, R. Valle¹, L. Baumela¹ and C. González^{2,3}</p> <p>¹ <i>Departamento de Inteligencia Artificial, Universidad Politécnica de Madrid, E.T.S. de Ingenieros Informáticos, Madrid, Spain</i></p> <p>² <i>IMDEA Materiales, Madrid, Spain</i></p> <p>³ <i>Departamento de Ciencia de Materiales, Universidad Politécnica de Madrid, Madrid, Spain</i></p>	REINFORCEMENT LEARNING FOR RESILIENT MANUFACTURING OF STRUCTURAL COMPOSITES BY LIQUID MOULDING	Oral	<p>Kasper Foss Hansen, Dimitrios Bikos, and Soraia Pimenta</p> <p><i>Department of Mechanical Engineering, Imperial College London, London, United Kingdom</i></p>	CONVOLUTIONAL NEURAL NETWORKS FOR FAILURE PREDICTION IN TOW-BASED DISCONTINUOUS COMPOSITES
12:10	Oral	<p>Ashish Hegde, Dimitrios Zarouchas, Baris Caglar</p> <p><i>Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, the Netherlands</i></p>	GRAPH NEURAL NETWORK BASED SURROGATE FOR CURE SIMULATION OF COMPOSITES	Oral	<p>S.Hasebe¹, R.Higuchi², T.Yokozeki² and S.Takeda</p> <p>^{1,2} <i>Department of Aeronautics and Astronautics, The University of Tokyo, Japan</i></p> <p>³ <i>Aviation Technology Directorate, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan</i></p>	MACHINE LEARNING-BASED LOW-VELOCITY IMPACT DAMAGE PREDICTION FOR CARBON FIBER REINFORCED PLASTICS
12:30	Oral	<p>Siyuan Chen¹, Adam J. Thompson¹, Tim J. Dodwell^{2,3}, Stephen R. Hallett¹ and Jonathan P.-H. Belnoue^{1,4}</p> <p>¹ <i>Bristol Composites Institute, University of Bristol, UK</i></p> <p>² <i>Department of Engineering, University of Exeter, UK</i></p> <p>³ <i>digiLab, The Innovation Centre, Exeter, UK</i></p> <p>⁴ <i>National Composites Centre, Bristol, UK</i></p>	PROBABILISTIC AI FOR IMPROVED PROCESS ROBUSTNESS IN NON-CRIMP FABRIC FORMING	Oral	<p>Luan Trinh¹, Quaiyum M. Ansari² and Paul Weaver³</p> <p>¹ <i>Faculty of Engineering and Technology, Technological University of the Shannon, Midlands Midwest, Ireland</i></p> <p>² <i>Department of Aerospace and Mechanical Engineering, South East Technological University, Carlow, Ireland</i></p> <p>³ <i>Bernal Institute, School of Engineering, University of Limerick, Ireland</i></p>	MACHINE LEARNING-AIDED CLASSIFICATION OF BUCKLING BEHAVIOUR IN STIFFENED COMPOSITE CYLINDRICAL SHELLS WITH GEOMETRIC AND MATERIAL UNCERTAINTIES
12:50	Oral	<p>Julian Greif, Nils Meyer</p> <p><i>Data-driven Product Engineering and Design, University of Augsburg, Germany</i></p>	FAST PREDICTION OF WARPAGE IN INJECTION-MOLDED SHORT FIBER REINFORCED COMPOSITES BY COUPLING MACHINE LEARNING AND DIFFERENTIABLE FEM TO INCORPORATE REAL DATA	Oral	<p>Christian Düreth¹, Andreas Hornig^{1,2} and Maik Gude¹</p> <p>¹ <i>Institute of Lightweight Engineering and Polymer Technology (TUD Dresden University of Technology, Germany)</i></p> <p>² <i>Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig (ScadS.AI, TUD Dresden University of Technology, Germany)</i></p>	GAUSSIAN PROCESS REGRESSION FOR MULTI-MODAL FATIGUE CRACK GROWTH IDENTIFICATION IN TEXTILE-REINFORCED COMPOSITES
13:10	Lunch					
14:10	<p>Plenary Lecture: Professor Francisco Chinesta.</p> <p><i>Professor of computational physics at Arts et Metiers Institute of Technology, Paris, France</i></p> <p>HYBRID AI TO ENHANCE COMPOSITES SCIENCE, ENGINEERING AND TECHNOLOGY</p>					

	Chair: Reza Vaziri, The University of British Columbia, Canada		
15:00	Flash talks	D. Gray¹ , Y. Chen ¹ , A. Rhead ¹ , R. Butler ¹ <i>¹Department of Mechanical Engineering, University of Bath, UK</i>	FOURIER NEURAL OPERATOR TO PREDICT MICROSCALE STRESS AND DAMAGE FIELDS IN COMPOSITES
		R.Zammit-Mangion¹ , T.Ainsworth ² , C.Fallon ¹ , E.G.Loukaides ¹ and F.Pinto ¹ <i>¹ Department of Mechanical Engineering, University of Bath, United Kingdom</i> <i>² GKN Aerospace, Isle of White, United Kingdom</i>	ENHANCING THE RELIABILITY OF ADHESIVELY BONDED AIRCRAFT JOINTS USING MACHINE LEARNING METHODS
		Kailun Deng¹ , Hasan Caglar ² , Yifan Zhao ¹ and David Ayre ² <i>¹ Centre for Life-cycle Engineering and Management, Cranfield University, UK.</i> <i>² Composites and Advanced Materials Centre, Cranfield University, UK</i>	ARTIFICIAL INTELLIGENCE-ASSISTED STACKING SEQUENCE DESIGN IN COMPOSITE LAMINATES
		Kieran Guoite^{1,2} , Chris Dighton ¹ , Cristian Lira ¹ , Ole T. Thomsen ² , Jonathan P.-H. Belnoue ^{1,2} <i>¹National Composites Centre, Feynman Way, Bristol, United Kingdom</i> <i>²Bristol Composites Institute, University of Bristol, Queens Building, University Walk, Bristol, United Kingdom</i>	IMPLEMENTATION OF GAUSSIAN PROCESS MACHINE LEARNING FOR RESIN INFUSION SIMULATIONS
		Yan Shen¹ , Tianyou Yuan ¹ , Jun Zhou ² , Cheng Qiu ³ , Jinglei Yang ^{1,4} <i>¹Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology</i> <i>²School of Nursing, Center of Smart Health, The Hong Kong Polytechnic University, HKSAR, China</i> <i>³Institute of Mechanics, Chinese Academy of Sciences, China</i> <i>⁴HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute, China</i>	MULTIMODAL FUSION LEARNING FOR SUSTAINABLE COMPOSITE MANUFACTURING: INTEGRATING MICROSTRUCTURAL IMAGING AND MULTI-OBJECTIVE PROCESS OPTIMIZATION
		Kuthan Çelebi¹ , Oleksandr G. Kravchenko ² and Sergii G. Kravchenko ¹ <i>¹Department of Materials Engineering, The University of British Columbia, Canada</i> <i>²Department of Mechanical and Aerospace Engineering, Old Dominion University, U.S.A.</i>	A DATA-DRIVEN SURROGATE MODELLING FRAMEWORK FOR MULTI-SCALE ANALYSIS OF MORPHOLOGICALLY COMPLEX COMPOSITES
		Xin Lu¹ , Ryo Higuchi ¹ and Tomohiro Yokozeki ¹ <i>¹Department of Aeronautics and Astronautics, The University of Tokyo, Japan</i>	OPEN-SOURCE C++ USER SUBROUTINES FOR SCALABLE AND DATA-DRIVEN FRACTURE ANALYSIS OF COMPOSITE MATERIALS USING ABAQUS
		Xiaohui. Zhang¹ , Ning. Dong ² and Gerhard. Ziegmann ³ <i>¹ Institute for Polymer Materials and Plastics Technology, Clausthal University of Technology, Germany</i> <i>² Institute for Informatics, Clausthal University of Technology, Germany</i> <i>³ Institute for Polymer Materials and Plastics Technology, Clausthal University of Technology, Germany</i>	DEEP LEARNING-BASED FLOW FRONT DETECTION FOR IN-PLANE 1D PERMEABILITY MEASUREMENT
		Dhiraj Biswas ^{1,4} , Rajesh Nakka ² , Sathiskumar A. Ponnusami² , Ganapathi A. Sengodan ³ <i>¹Department of Materials, University of Oxford, United Kingdom.</i> <i>²Department of Engineering, City St George’s, University of London, United Kingdom.</i> <i>³School of Science, Engineering and Environment, University of Salford, United Kingdom.</i>	MICROSCALE TENSILE-COMPRESSIVE RESPONSE AND FRACTURE PREDICTION OF COMPOSITES USING MULTI-OUTPUT CNN MODEL
		J. Seiffert¹ , M. Ertl ¹ and K. Drechsler ¹ <i>¹Chair of Carbon Composites, Technical University of Munich, Germany</i>	DEEP LEARNING TECHNIQUES FOR IN-SITU MISALIGNMENT QUANTIFICATION IN CONTINUOUS FIBER ADDITIVE MANUFACTURING
		Mohammad N. Saquib¹ , Richard Larson ¹ , Jiang Li ² , Sergii G. Kravchenko ³ and Oleksandr G. Kravchenko ¹ <i>¹Mechanical and Aerospace Engineering Department, Old Dominion University, USA</i>	RECONSTRUCTION OF FIBER ORIENTATION MORPHOLOGY IN MOLDED DISCONTINUOUS FIBER COMPOSITES USING RESIDUAL STRESS-BASED DEEP LEARNING

		<i>²Electrical and Computer Engineering Department, Old Dominion University, USA</i> <i>³Department of Materials Engineering, The University of British Columbia, Canada</i>			
		Ji Dong¹ , Ali Kandemir ² , Ian Hamerton ² <i>¹School of Engineering Mathematics and Technology, University of Bristol, UK</i> <i>²Bristol Composites Institute, School of Civil, Aerospace and Design Engineering, University of Bristol, UK</i>			BEYOND PIXELS: NEURAL IMPLICIT REPRESENTATIONS FOR ACCURATE FIBRE ALIGNMENT IN COMPOSITES
15:40	Poster Session Followed by Coffee Break				
	Session 1			Session 2	
	AI-Driven Process Modelling and Simulation in Composites Chair: Mikhail Matveev, The University of Nottingham, UK			Mechanical Behaviour and Failure Prediction with AI Chair: Marco Petrolo, Politecnico di Torino, Italy	
16:20	Oral	Tim Newman¹ , Cristian Lira ¹ , Jamie Hartley ² , Mindaugas Max Sasnauskas ² , Arjen Koorevaar ³ <i>¹ National Composites Centre, Engineering Development, Bristol, UK</i> <i>² National Composites Centre, Manufacturing Development, Composite Moulding, Bristol, UK</i> <i>³ Polyworx BV, Advanced Computing, Nijverdal, The Netherlands</i>	DEEP MULTI-AGENT REINFORCEMENT LEARNING FOR VENT AND INLET POSITIONING AND QUANTITY IN RESIN TRANSFER MOULDING	Oral	Chaeyoung Hong ¹ and Wooseok Ji² <i>Department of Mechanical Engineering, Ulsan National Institute of Science and Technology, Republic of Korea</i> EFFICIENT TRAINING STRATEGY FOR A SCALABLE MICROMECHANICS MODEL PREDICTING LOCALIZED STRESSES BETWEEN FIBRES
16:40	Oral	Liam D. Burns , Fadi El Kalach, Saeed Faharani, and Ramy Harik <i>Clemson Composites Center, Clemson University, Greenville, SC, USA</i>	A MACHINE LEARNING APPROACH TO PROCESS PARAMETER OPTIMIZATION OF HIGH-PRESSURE RESIN TRANSFER MOLDING (HP-RTM) SYSTEMS	Oral	Mohammad N. Saquib ¹ , Richard Larson ¹ , Jiang Li ² , Sergii G. Kravchenko ³ and Oleksandr G. Kravchenko¹ <i>¹ Mechanical and Aerospace Engineering Department, Old Dominion University, USA</i> <i>² Electrical and Computer Engineering Department, Old Dominion University, USA</i> <i>³ Department of Materials Engineering, The University of British Columbia, Canada</i> FAILURE PREDICTION IN MOLDED COMPOSITES USING RESIDUAL STRESS AND DEEP LEARNING DRIVEN MICROSTRUCTURE RECONSTRUCTION
17:00	Oral	Nuri Ersoy¹ , Mehmet Can Engül, Pınar Acar ² <i>¹ Boazici University, TURKEY</i> <i>² Virginia Tech University, USA</i>	A NEURAL NETWORK APPROACH TO COMPOSITES PROCESS SIMULATIONS	Oral	J. Gerritzen¹ , A. Hornig ^{1,2,3} and M. Gude ³ <i>¹ Institute of Lightweight Engineering and Polymer Technology, TUD Dresden University of Technology, Germany</i> <i>² Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig (ScaDS.AI), TUD Dresden University of Technology, Germany</i> <i>³ Department of Engineering Science, Solid Mechanics and Materials Engineering, University of Oxford, OX1 3PJ, Oxford, United Kingdom</i> INFLUENCE OF THE SAMPLING STRATEGY FOR TRAINING DATA ON EDGE CASE PERFORMANCE OF DATA DRIVEN FAILURE CRITERION FOR FRP
17:20	Oral	Suplal Tudu and R. Velmurugan <i>Aerospace Engineering, Indian Institute of Technology Madras, India</i>	MODELLING OF CURING PROCESS OF FIBER REINFORCED POLYMER COMPOSITES IN AUTOCLAVE USING AI	Oral	Runze Li , Mário Miranda and Silvestre T. Pinho THE UNCERTAINTY QUANTIFICATION OF COMPOSITE FAILURE PREDICTIONS BASED ON BAYESIAN NEURAL NETWORKS

					<i>Department of Aeronautics, Imperial College London, London, UK</i>	
17:40				Oral	Attada Phanendra Kumar ¹ , Shailesh Garg ² , Souvik Chakraborty ² , Dineshkumar Harursampath ¹ and <u>Sathiskumar Anusuya Ponnusami</u> ³ <i>¹ Department of Aerospace Engineering, Indian Institute of Science, Bengaluru, India</i> <i>² Department of Applied Mechanics, Indian Institute of Technology Delhi, Delhi, India</i> <i>³ Department of Engineering, City St George’s, University of London, London, United Kingdom</i>	CONFORMAL PREDICTION FOR UNCERTAINTY QUANTIFICATION OF COMPOSITE THERMOMECHANICAL PROPERTIES USING RANDOMISED PRIOR WAVELET NEURAL OPERATORS
18:00	END OF THE DAY 1					
18:30	WELCOME RECEPTION: WILLS MEMORIAL HALL					

Tuesday, 2nd of September 2025

08:45	Registration and coffee					
09:15	<div>Plenary Lecture: Dr Pierre-Yves Mechin</div> <div>Composites structural analyst & materials specialist, PlyNow</div> <div>FROM MOLECULE TO STRUCTURE, COMPOSITES BEHAVIOUR AND PERFORMANCE ENHANCED BY AI</div> <div>Chair: Anoush Poursartip, The University of British Columbia, Canada</div>					
Session 3				Session 4		
AI for Intelligent Composite Manufacturing and Control				Data-Driven Surrogate Models and Accelerated Simulations		
Chair: Alex Kravchenko, Old Dominion University, USA				Chair: Wenbin Yu, Purdue University, USA		
Time	Type of presentation	Authors	Title	Type of presentation	Authors	Title
10:10	Keynote	Ramy Harik <i>Clemson Composites Center, Clemson University</i>	TOWARDS SMART AUTOMATED FIBER PLACEMENT	Keynote	Pavana Prabhakar¹ , Haotian Feng ² , Sabarinathan P Subramaniyan ³ , and Hridyesh Tewani ⁴ <i>¹ Department of Mechanical Engineering, University of Wisconsin-Madison, USA</i> <i>² Department of Civil & Environmental Engineering, University of Wisconsin-Madison, USA</i>	AI FOR THE ANALYSIS, DESIGN, AND OPTIMIZATION OF COMPOSITES
10:40	Oral	Anatoly Koptelov , Hanna Beketova, Jonathan P.-H. Belnoue, Stephen R. Hallett, Iryna Tretiak and Bassam El Said <i>Bristol Composites Institute, University of Bristol, Bristol, BS8 1TR, United Kingdom</i>	ASPECTS OF SPATIAL TIME SERIES FORECASTING FOR COMPOSITE MANUFACTURING PROBLEMS OF VARIOUS DIMENSIONALITY	Oral	M. Petrolo¹ , M. Santori ¹ , K. Johnson ² , E. Zappino ¹ and N. Zobeiry ² <i>¹ MUL2 LAB, Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Italy</i> <i>² Department of Materials Science and Engineering, University of Washington, Seattle, WA, USA</i>	ASSESSMENT OF MULTI-FIDELITY STRUCTURAL THEORIES TO TRAIN PROBABILISTIC MACHINE LEARNING FOR PROCESS-INDUCED DEFECTS
11:00	Oral	Marcello Laurenti , Irene Bavasso, Erika Palazzi, Jacopo Tirillò, Fabrizio Sarasini and Filippo Berto <i>University of Rome “La Sapienza”, Department of Chemical Engineering Materials Environment</i>	AI-DRIVEN COMPUTATIONAL FRAMEWORK FOR OPTIMIZING FDM PROCESS PARAMETERS AND ENHANCING MECHANICAL PERFORMANCE	Oral	S. Fernández-León^{1,2} , D. Mocerino ² , R. Valle ¹ , L. Baumela ¹ and C. González ^{2,3} <i>¹ Departamento de Inteligencia Artificial, Universidad Politécnica de Madrid, Spain</i> <i>² IMDEA Materiales, , Madrid, Spain</i> <i>³ Departamento de Ciencia de Materiales, Universidad Politécnica de Madrid , Spain</i>	A DEEP SURROGATE MODEL FOR ACCELERATING LCM MOULD-FILLING SIMULATIONS IN UNSTRUCTURED AND THREE-DIMENSIONAL MESHES
11:20	Coffee Break					

Session 3				Session 4		
AI for Intelligent Composite Manufacturing and Control				Data-Driven Surrogate Models and Accelerated Simulations		
				Chair: Bassam El Said, University of Bristol, UK		
11:50	Oral	<p>Jan Wolf¹, Aaron Vogel², Mathias Morgenstern² Christian Prescher³, Ulrich Burgbacher⁴, Manuel Prätorius⁴, Luis Garcia⁵, Benjamin Risse⁵, Thomas Behnisch¹ and Maik Gude¹</p> <p>¹ Institute for Lightweight Engineering and Polymer Technology, TUD Dresden University of Technology, Germany</p> <p>² SURAGUS GmbH, Germany</p> <p>³ STRUCNAMICS Engineering GmbH, Germany</p> <p>⁴ tapdo technologies GmbH, Germany</p>	TAILORING CARBON FIBERS COMBINING NOVEL INLINE SENSORS AND MACHINE LEARNING	Oral	<p>Aewis K.W. Hii, Stephen R. Hallett and Bassam El Said</p> <p><i>Bristol Composites Institute, University of Bristol, UK</i></p>	MODELLING DEFECTS AND PROGRESSIVE 3D FAILURE IN LARGE COMPOSITE COMPONENTS WITH SHELL ELEMENTS: A DATA-DRIVEN, MULTI-SCALE APPROACH
12:10	Oral	<p>Simone Bancora¹, Tim Newman¹, Paris Mulye²</p> <p>¹ National Composites Centre, United Kingdom</p> <p>²Quantiflex Simulations SAS, France</p>	USE OF DEEP REINFORCEMENT LEARNING TO ACHIEVE REAL-TIME CONTROL OF A RESIN INFUSION PROCESS	Oral	<p>Jens Wiegand¹ and Giuseppe Zumpano</p> <p>¹ COMPACT Composite Impact Engineering LTD, UK,</p> <p>² Rolls Royce PLC, UK</p>	ACCELERATING COMPOSITE IMPACT SIMULATIONS BY THE USE OF NEURAL NET`WORK BASED SURROGATE MODELS
12:30	Oral	<p>Patrick Flore, Fabian Röder, Kevin Chen, Andreas Gebhard</p> <p><i>Leibniz-Institut für Verbundwerkstoffe, Germany,</i></p>	GEOMETRY-BASED SYNTHETIC DATA AND DEEP LEARNING FOR ONLINE SURFACE INSPECTION OF FIBER-REINFORCED COMPOSITES	Oral	<p>Shuang Yan¹, Mikhail Matveev¹, Michael Causon², Marco Iglesias², Andreas Endruweit¹, and Michael Tretyakov²</p> <p>¹ Composites Research Group, Faculty of Engineering, University of Nottingham, Nottingham, UK</p> <p>² School of Mathematical Sciences, Faculty of Science, University of Nottingham, Nottingham, UK</p>	A SURROGATE MODEL FOR INVERSE PARAMETER ESTIMATION IN RESIN TRANSFER MOULDING PROCESSES
12:50	Lunch					
Session 5				Session 6		
AI in Non-Destructive Testing and Structural Health Monitoring				AI-Driven Design and Industrial Applications in Composites		
Chair: Yentl Swolfs, KU Leuven, Belgium						

13:50	Oral	<p><u>A. Tabatabaeian</u>¹, B. Jerkovic², P. Harrison¹, E. Marchiori² and M. Fotouhi³</p> <p>¹ James Watt School of Engineering, University of Glasgow, UK,</p> <p>² Institute of Computing and Information Sciences, Radboud University, the Netherlands</p> <p>³ Faculty of Civil Engineering and Geosciences, Delft University of Technology, the Netherlands</p>	DETECTION OF BARELY VISIBLE IMPACT DAMAGE IN CFRP COMPOSITE PANELS USING DEEP LEARNING MODELS AND HYBRID GLASS/CARBON SENSORS	Oral	<p><u>Joseph Kirchhoff</u>¹, Thomas O’Leary-Roseberry¹, John Yao¹, Dingcheng Luo¹, Yohannes Bekele¹, Tom Seidl², Tyler Hudson³, Andy Newman³, Wesley Tayon³, Mehran Tehrani⁴, Omar Ghattas¹</p> <p>¹ The University of Texas at Austin, USA,</p> <p>² Sandia National Labs, USA</p> <p>³ NASA Langley Research Center, USA</p> <p>⁴ The University of California at San Diego, USA</p>	MICRON-SCALE HETEROGENEOUS CHARACTERIZATION OF THERMOPLASTIC COMPOSITES VIA SEM-DIC, FINITE ELEMENTS & NEURAL OPERATORS
14:10	Oral	<p><u>Fabing Emmanuel</u>^{1,2}, Méchin Pierre-Yves¹ and Keryvin Vincent²</p> <p>¹ Dassault Systèmes, France</p> <p>² Université Bretagne Sud, IRDL, France</p>	AI BASED FIBRE MISALIGNMENT MEASUREMENT	Oral	<p><u>Göran Fernlund</u>^{1,2}, Alireza Forghani¹, Anthony Floyd¹, and Anoush Poursartip^{1,2}</p> <p>¹ Convergent Manufacturing Technologies, Canada</p> <p>² The University of British Columbia, Materials Engineering, Canada</p>	A STRUCTURED APPROACH TO MERGING AI AND ML INTO ESTABLISHED COMPOSITES PROCESS SIMULATION AND PROCESS ANALYTICS
14:30	Oral	<p><u>Jonas Naumann</u>^{1,2}, Jonas P. Appels¹, Philipp Sämann¹, Timo de Wolff² and Christoph Brauer¹</p> <p>¹ Institute of Lightweight Systems, German Aerospace Center (DLR) Stade, Germany</p> <p>² Institute of Analysis and Algebra, Technische Universität Braunschweig, Braunschweig, Germany</p>	ENHANCING COMPOSITE MICROGRAPH ANALYSIS WITH SEMANTIC SEGMENTATION	Oral	<p><u>J. Kucera</u></p> <p>National Composites Centre, UK</p>	CompoST – Composite Standard for composite data transfer and interoperability
14:50	Oral	<p><u>Mahoor Mehdikhani</u>, Rui Guo, Shailee Upadhyay, Christian Breite, and Yentl Swolfs</p> <p>Department of Materials Engineering, KU Leuven, Belgium,</p>	SEGMENTATION IN X-RAY COMPUTED TOMOGRAPHY IMAGES USING DEEP LEARNING	Oral	<p><u>Hussain Abass</u>^{1,2}, Ross Allen¹, Andrew Corbett^{1,3} and Ton Peijs²</p> <p>¹ digiLab, UK</p> <p>² WMG, University of Warwick</p> <p>³ Alan Turing Institute, UK</p>	FASTER ANALYSIS AND OPTIMISATION OF DISCONTINUOUS COMPOSITES USING MACHINE LEARNING
15:10	Coffee Break and Poster Session					
Session 5				Session 6		
AI in Non-Destructive Testing and Structural Health Monitoring				AI-Driven Design and Industrial Applications in Composites Chair: Tong-Earn Tay, National University of Singapore, Singapore		
15:50	Oral	<p><u>Umeir Khan</u>¹, Vincent K. Maes¹, Rob Hughes², Petar Zivkovic³, Jon Wright³, Turlough McMahon³, and James Kratz¹</p>	TRANSFER LEARNING FOR EFFICIENT PHOTO-INSPECTION OF IN-PLANE WAVINESS	Oral	<p>J. Kucera, K. Angelov , P. Druiff</p> <p>National Composites Centre, UK</p>	NATIONAL COMPOSITE CENTER UPCOMING PROJECTS

		¹ <i>Bristol Composites Institute, Department of Aerospace Engineering, University of Bristol, United Kingdom</i> ² <i>Department of Mechanical Engineering, University of Bristol, United Kingdom</i> ³ <i>Airbus UK, United Kingdom</i>				
16:10	Oral	Rui Guo, Mahoor Mehdikhani, Christian Breite and <u>Yentl Swolfs</u> <i>Materials Engineering, KU Leuven, Belgium</i>	A 2D PACKING GENERATOR FOR UNIDIRECTIONAL FIBRE-REINFORCED COMPOSITES BASED ON A GENERATIVE ADVERSARIAL NETWORK	Oral	<u>S. Psarras</u> ¹ , G. Sotiriadis ¹ , M. Sergolle ² , T. Balutch ² , E. Billaudeau ² and V. Kostopoulos ¹ ¹ <i>Department of Mechanical Engineering & Aeronautics, University of Patras, Greece</i> ² <i>Naval Group, Centre d'Expertise des Structures et Matériaux Navals Technocampus Océan, France</i>	ENHANCING REPAIR PATCH DESIGN FOR THICK COMPOSITE STRUCTURES IN NAVAL APPLICATION USING ARTIFICIAL INTELLIGENCE
16:30	Oral	<u>A. Gazzola</u> , M. Quaresimin, P.A. Carraro and M. Zappalorto <i>Department of Management and Engineering, University of Padova, Vicenza, Italy.</i>	DEEP LEARNING APPROACH FOR STRUCTURAL HEALTH MONITORING OF MULTIDIRECTIONAL LAMINATES VIA ELECTRICAL MEASUREMENTS	Oral	Yilun Dong ¹ , <u>Zhong Zhang</u> ¹ ¹ <i>School of Engineering Science, University of Science and Technology of China, China</i>	ARTIFICIAL NEURAL NETWORKS APPLIED TO POLYMER COMPOSITES
16:50	Oral	Mengyue He ^{1,2} , Zhifang Zhang ¹ and <u>Karthik Ram Ramakrishnan</u> ³ ¹ <i>Research Center for Wind Engineering and Engineering Vibration, Guangzhou University, Guangzhou, China</i> ² <i>College of Engineering, Shantou University, Shantou, China</i> ³ <i>Bristol Composites Institute, University of Bristol, United Kingdom</i>	SUPPORT VECTOR MACHINE ALGORITHMS FOR DELAMINATION ASSESSMENT IN VIBRATION BASED SHM	Oral	<u>Andrejs Krauklis</u> ¹ <i>Latvia University of Life Sciences and Technologies, Faculty of Forest and Environmental Sciences, Institute of Civil Engineering and Woodworking, MEI Core Group, Latvia</i>	MODULAR MATERIALS INFORMATICS FRAMEWORK FOR ASSESSING COMPOSITE MATERIAL AGEING
17:10	Oral	<u>Mihai M. Vasilache</u> ^{1,2} , Iryna Tretiak ³ , Rostand B. Tayong ¹ and Vladan Velisavljevic ¹ ¹ <i>Institute for Research in Engineering and Sustainable Environment (IRESE), School of Computer Science and Technology, University of Bedfordshire, Luton, United Kingdom</i> ² <i>GKN Aerospace Service Limited, London Luton Airport, Luton, Bedfordshire, United Kingdom</i>	USING MACHINE LEARNING CONVOLUTION NEURAL NETWORK METHODS FOR THE ULTRASOUND CHARACTERISATION OF POROSITY ACROSS CARBON FIBRE REINFORCED POLYMER LAYERS	Oral		

		³ Bristol Composites Institute, University of Bristol, United Kingdom				
17:30	END OF THE DAY 2					
19:00	GALA DINNER: THE SANSOVINO HALL AT BRISTOL HARBOUR HOTEL					

Wednesday, 3r^d of September 2025

09:00	Coffee and Pastries		
09:30	<div>Plenary Lecture: Dr Navid Zobeiry</div> <div>Associate Professor in the Materials Science & Engineering Department at the University of Washington in Seattle, USA</div> <div>Applied AI for Composites: From Accelerated Testing to Autonomous Certification and Smarter Engineering</div> <div>Chair: Carlos González, IMDEA Materials, Spain</div>		
Session 7			
Physics-Informed Neural Networks (PINNs) and Physics-Based AI			
Time	Type of presentation	Authors	Title
10:20	Oral	<div>Ehsan Ghane¹, Marina Maia², Iuri Rocha², Martin Fagerström³, and Mohsen Mirkhalaf¹</div> <div>¹ Department of Physics, University of Gothenburg, Sweden,</div> <div>² Department, Delft University of Technology, The Netherlands</div> <div>³ Department of Industrial and Materials Science, Chalmers University of Technology, Sweden</div>	HIERARCHICAL PHYSICALLY RECURRENT NEURAL NETWORKS FOR MULTI-SCALE MODELING OF WOVEN COMPOSITES
10:40	Oral	<div>Sahar Abouali, Anoush Poursartip, Reza Vaziri</div> <div>Composites Research Network, Departments of Civil Engineering and Materials Engineering, The University of British Columbia, Vancouver, BC, Canada</div>	A PHYSICS-INFORMED NEURAL NETWORK FOR INVERSE CHARACTERIZATION OF COMPOSITE DAMAGE MODELS USING FULL-FIELD EXPERIMENTAL DATA
11:00	Oral	<div>Bernabe Lorenzo Avila¹, Nils Meyer² and Dietmar Koch³</div> <div>¹ Materials Engineering, University of Augsburg, Germany,</div> <div>² Data-driven Product Engineering and Design, University of Augsburg, Germany</div> <div>³ Materials Engineering, University of Augsburg, Germany</div>	PREDICTING THERMAL BEHAVIOUR OF C/C-SIC FIBRE-PATCHED STRUCTURES USING PHYSICS-INFORMED-NETWORKS (PINNS)
11:20	Coffee break		

Session 7			
Physics-Informed Neural Networks (PINNs) and Physics-Based AI			
Chair: Adam Sobey, University of Southampton, UK			
11:50	Oral	<u>John M. Hanna</u> ^{1 2} ¹ Akhet solutions, Rennes, France ² Inria Rennes, France	APPLICATIONS OF PHYSICS-INFORMED NEURAL NETWORKS TO LIQUID COMPOSITE MOLDING
12:10	Oral	<u>Tobias Würth</u> ¹ , Niklas Freymuth ² , Gerhard Neumann ² and Luise Kärger ¹ ¹ Institute of Vehicle System Technology, Karlsruhe Institute of Technology (KIT), Germany ² Autonomous Learning Robots, Karlsruhe Institute of Technology (KIT), Germany	PHYSICS-INFORMED MESHGRAPHNETS (PI-MGNS) FOR ANISOTROPIC MATERIALS
12:30	Oral	<u>Shady Adib</u> ¹ , Ieva Misiunaite ² ¹ School of Engineering, Newcastle University, Newcastle upon Tyne, United Kingdom ² Research Laboratory of Innovative Building Structures, Department of Aeronautical Engineering, Vilnius Gediminas Technical University, Vilnius, Lithuania	AI-ENHANCED TOPOLOGY OPTIMISATION OF PLA LATTICE STRUCTURES FOR HYBRID COMPOSITE APPLICATIONS: EXPLORING PHYSICS-INFORMED APPROACHES
12:50	Closing Ceremony		
13:00	FAREWELL LUNCH		
14:00	END OF CONFERENCE.		
	OPTIONAL TOUR TO THE NATIONAL COMPOSITE CENTRE AND ISAMBARD AI		
	Start at 14:30 estimated time return time 17:00 (TBC)		