Monday, 1st of September 2025

08:00	**Registration and coffee**
09:00	**Opening Ceremony** **Location:** Lecture Theatre
09:15	**Plenary Lecture: Professor Adam Sobey,** *Programme Director for Data-Centric Engineering at The Alan Turing Institute, UK* **CURRENT AND FUTURE TRENDS IN DATA-CENTRIC ENGINEERING FOR LIGHTWEIGHT STRUCTURES** **Chair:** Michael Wisnom, *University of Bristol, UK.* **Location:** Lecture Theatre

Session 1				**Session 2**		
AI-Driven Process Modelling and Simulation in Composites **Chair:** Jonathan Belnoue, University of Bristol, UK **Location:** Lecture Theatre				**Mechanical Behaviour and Failure Prediction with AI** **Chair:** Navid Zobeiry, University of Washington, USA **Location:** Cinema Room G.H01		
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]Composites Research Network, Departments of Materials Engineering and Civil Engineering, The University of British Columbia, Vancouver, BC, Canada* *[2] Department of Statistics, The University of British Columbia, Vancouver, BC, Canada* *[3] Convergent Manufacturing Technologies, Vancouver, BC, Canada*	AN UNCERTAINTY QUANTIFICATION FRAMEWORK FOR THERMAL MANAGEMENT IN COMPOSITES MANUFACTURING	**Keynote**	**Wenbin Yu[1],** Banghua Zhao[1] and R. Byron Pipes[2] *[1] School of Aeronautics and Astronautics, Purdue University, USA,* *[2] College of Engineering, Purdue University, USA*	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] Faculty of Engineering and Natural Sciences, Sabanci University, Orhanli-Tuzla, Istanbul,Turkey* *[2] Integrated Manufacturing Technologies Research and Application Center, Sabanci University, Orhanli-Tuzla, Istanbul, Turkey* *[3] School of Mechanical, Aerospace and Civil Engineering, The University of Sheffield, UK*	DETECTING DEFECTS AND DISSIMILAR REGIONS IN LIQUID COMPOSITE MOLDING: A DEEP LEARNING BASED APPROACH TO RESIN FLOW MONITORING	**Oral**	**Luca Patrignani,** Silvestre T. Pinho *Department of Aeronautics, Imperial College London, London, UK*	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** *Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, the Netherlands*	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 *Department of Mechanical Engineering, National University of Singapore, Singapore*	OPEN-HOLE TENSION STRENGTH PREDICTION WITH MACHINE LEARNING
11:20	**Coffee Break**					
Session 1 **AI-Driven Process Modelling and Simulation in Composites** **Chair:** Baris Caglar, TU Delft, Netherlands **Location:** Lecture Theatre				**Session 2** **Mechanical Behaviour and Failure Prediction with AI** **Chair:** Paolo Andrea Carraro, University of Padova, Italy **Location:** Cinema Room G.H01		
11:50	**Oral**	S. Fernández-León[1,2], D. Mocerino[2], J. Fernández-León[1],R. Valle[1], L. Baumela[1] and **C. González**[2,3] *[1] Departamento de Inteligencia Artificial, Universidad Politécnica de Madrid, E.T.S. de Ingenieros Informáticos, Madrid, Spain* *[2] IMDEA Materiales, Madrid, Spain* *[3] Departamento de Ciencia de Materiales, Universidad Politécnica de Madrid, Madrid, Spain*	REINFORCEMENT LEARNING FOR RESILIENT MANUFACTURING OF STRUCTURAL COMPOSITES BY LIQUID MOULDING	**Oral**	**Kasper Foss Hansen**, Dimitrios Bikos, and Soraia Pimenta *Department of Mechanical Engineering, Imperial College London, London, United Kingdom*	CONVOLUTIONAL NEURAL NETWORKS FOR FAILURE PREDICTION IN TOW-BASED DISCONTINUOUS COMPOSITES
12:10	**Oral**	**Ashish Hegde**, Dimitrios Zarouchas, Baris Caglar *Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, the Netherlands*	GRAPH NEURAL NETWORK BASED SURROGATE FOR CURE SIMULATION OF COMPOSITES	**Oral**	**S.Hasebe**[1], R.Higuchi[2], T.Yokozeki[2] and S.Takeda *[1,2] Department of Aeronautics and Astronautics, The University of Tokyo, Japan* *[3]Aviation Technology Directorate, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan*	MACHINE LEARNING-BASED LOW-VELOCITY IMPACT DAMAGE PREDICTION FOR CARBON FIBER REINFORCED PLASTICS
12:30	**Oral**	Siyuan Chen[1], Adam J. Thompson[1], Tim J. Dodwell[2,3], Stephen R. Hallett[1] and **Jonathan P.-H. Belnoue**[1,4] *[1] Bristol Composites Institute, University of Bristol, UK* *[2]Department of Engineering, University of Exeter, UK* *[3] digiLab, The Innovation Centre, Exeter, UK* *[4] National Composites Centre, Bristol, UK*	PROBABILISTIC AI FOR IMPROVED PROCESS ROBUSTNESS IN NON-CRIMP FABRIC FORMING	**Oral**	**Luan Trinh**[1], Quaiyum M. Ansari[2] and Paul Weaver[3] *[1] Faculty of Engineering and Technology, Technological University of the Shannon, Midlands Midwest, Ireland* *[2] Department of Aerospace and Mechanical Engineering, South East Technological University, Carlow, Ireland* *[3] Bernal Institute, School of Engineering, University of Limerick, Ireland*	MACHINE LEARNING-AIDED CLASSIFICATION OF BUCKLING BEHAVIOUR IN STIFFENED COMPOSITE CYLINDRICAL SHELLS WITH GEOMETRIC AND MATERIAL UNCERTAINTIES

12:50	**Oral**	**Julian Greif**, Nils Meyer *Data-driven Product Engineering and Design, University of Augsburg, Germany*	FAST PREDICTION OF WARPAGE IN INJECTION-MOLDED SHORT FIBER REINFORCED COMPOSITES BY COUPLING MACHINE LEARNING AND DIFFERENTIABLE FEM TO INCORPORATE REAL DATA	**Oral**	**Christian Düreth[1],** Andreas Hornig[1,2] and Maik Gude[1] *[1] Institute of Lightweight Engineering and Polymer Technology (TUD Dresden University of Technology, Germany)* *[2] Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig (ScadS.AI, TUD Dresden University of Technology, Germany)*	GAUSSIAN PROCESS REGRESSION FOR MULTI-MODAL FATIGUE CRACK GROWTH IDENTIFICATION IN TEXTILE-REINFORCED COMPOSITES
13:10	**Lunch**					
14:10	**Plenary Lecture: Professor Francisco Chinesta.** *Professor of computational physics at Arts et Metiers Institute of Technology, Paris, France* **HYBRID AI TO ENHANCE COMPOSITES SCIENCE, ENGINEERING AND TECHNOLOGY** ***Chair:*** Reza Vaziri, The University of British Columbia, Canada **Location:** Lecture Theatre					
15:00	**Flash talks**	**D. Gray[1]**, Y. Chen[1], A. Rhead[1], R. Butler[1] *[1]Department of Mechanical Engineering, University of Bath, UK*		FOURIER NEURAL OPERATOR TO PREDICT MICROSCALE STRESS AND DAMAGE FIELDS IN COMPOSITES		
		R.Zammit-Mangion[1], T.Ainsworth[2], C.Fallon[1], E.G.Loukaides[1] and F.Pinto[1] *[1] Department of Mechanical Engineering, University of Bath, United Kingdom* *[2] GKN Aerospace, Isle of White, United Kingdom*		ENHANCING THE RELIABILITY OF ADHESIVELY BONDED AIRCRAFT JOINTS USING MACHINE LEARNING METHODS		
		Kailun Deng[1], Hasan Caglar[2], Yifan Zhao[1] and David Ayre[2] *[1] Centre for Life-cycle Engineering and Management, Cranfield University, UK.* *[2] Composites and Advanced Materials Centre, Cranfield University, UK*		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] *[1]National Composites Centre, Feynman Way, Bristol, United Kingdom* *[2]Bristol Composites Institute, University of Bristol, Queens Building, University Walk, Bristol, United Kingdom*		IMPLEMENTATION OF GAUSSIAN PROCESS MACHINE LEARNING FOR RESIN INFUSION SIMULATIONS		
		Kuthan Çelebi[1], Oleksandr G. Kravchenko[2] and Sergii G. Kravchenko[1] *[1]Department of Materials Engineering, The University of British Columbia, Canada* *[2]Department of Mechanical and Aerospace Engineering, Old Dominion University, U.S.A.*		A DATA-DRIVEN SURROGATE MODELLING FRAMEWORK FOR MULTI-SCALE ANALYSIS OF MORPHOLOGICALLY COMPLEX COMPOSITES		
		Xin Lu[1], Ryo Higuchi[1] and Tomohiro Yokozeki[1] *[1]Department of Aeronautics and Astronautics, The University of Tokyo, Japan*		OPEN-SOURCE C++ USER SUBROUTINES FOR SCALABLE AND DATA-DRIVEN FRACTURE ANALYSIS OF COMPOSITE MATERIALS USING ABAQUS		
		Xiaohui. Zhang[1], Ning. Dong[2] and Gerhard. Ziegmann[3] *[1] Institute for Polymer Materials and Plastics Technology, Clausthal University of Technology, Germany* *[2] Institute for Informatics, Clausthal University of Technology, Germany*		DEEP LEARNING-BASED FLOW FRONT DETECTION FOR IN-PLANE 1D PERMEABILITY MEASUREMENT		

		[3] Institute for Polymer Materials and Plastics Technology, Clausthal University of Technology, Germany	
		Dhiraj Biswas[1,4], Rajesh Nakka[2], **Sathiskumar A. Ponnusami[2]**, Ganapathi A. Sengodan[3] *[1]Department of Materials, University of Oxford, United Kingdom.* *[2]Department of Engineering, City St George's, University of London, United Kingdom.* *[3]School of Science, Engineering and Environment, University of Salford, United Kingdom.*	MICROSCALE TENSILE-COMPRESSIVE RESPONSE AND FRACTURE PREDICTION OF COMPOSITES USING MULTI-OUTPUT CNN MODEL
		J. Seiffert[1], M. Ertl[1] and K. Drechsler[1] *[1]Chair of Carbon Composites, Technical University of Munich, Germany*	DEEP LEARNING TECHNIQUES FOR IN-SITU MISALIGNMENT QUANTIFICATION IN CONTINUOUS FIBER ADDITIVE MANUFACTURING
		Mohammad N. Saquib[1], Richard Larson[1], Jiang Li[2], Sergii G. Kravchenko[3] and Oleksandr G. Kravchenko[1] *[1]Mechanical and Aerospace Engineering Department, Old Dominion University, USA* *[2]Electrical and Computer Engineering Department, Old Dominion University, USA* *[3]Department of Materials Engineering, The University of British Columbia, Canada*	RECONSTRUCTION OF FIBER ORIENTATION MORPHOLOGY IN MOLDED DISCONTINUOUS FIBER COMPOSITES USING RESIDUAL STRESS-BASED DEEP LEARNING
		Ji Dong[1], Ali Kandemir[2], Ian Hamerton[2] *[1]School of Engineering Mathematics and Technology, University of Bristol, UK* *[2]Bristol Composites Institute, School of Civil, Aerospace and Design Engineering, University of Bristol, UK*	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 **Location:** Lecture Theatre				**Mechanical Behaviour and Failure Prediction with AI** **Chair:** Marco Petrolo, Politecnico di Torino, Italy **Location:** Cinema Room G.H01		
16:20	**Oral**	**Tim Newman[1],** Cristian Lira[1], Jamie Hartley[2], Mindaugas Max Sasnauskas[2], Arjen Koorevaar[3] *[1] National Composites Centre, Engineering Development, Bristol, UK* *[2] National Composites Centre, Manufacturing Development, Composite Moulding, Bristol, UK* *[3] Polyworx BV, Advanced Computing, Nijverdal, The Netherlands*	DEEP MULTI-AGENT REINFORCEMENT LEARNING FOR VENT AND INLET POSITIONING AND QUANTITY IN RESIN TRANSFER MOULDING	**Oral**	Chaeyoug Hong[1] **and Wooseok Ji[2]** *Department of Mechanical Engineering, Ulsan National Institute of Science and Technology, Republic of Korea*	EFFICIENT TRAINING STRATEGY FOR A SCALABLE MICROMECHANICS MODEL PREDICTING LOCALIZED STRESSES BETWEEN FIBRES

16:40	**Oral**	**Yan Shen[1]**, Tianyou Yuan[1], Jun Zhou[2], Cheng Qiu[3,] Jinglei Yang[1, 4] *[1]Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology* *[2]School of Nursing, Center of Smart Health, The Hong Kong Polytechnic University, HKSAR, China* *[3]Institute of Mechanics, Chinese Academy of Sciences, China* *[4]HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute, China*	MULTIMODAL FUSION LEARNING FOR SUSTAINABLE COMPOSITE MANUFACTURING: INTEGRATING MICROSTRUCTURAL IMAGING AND MULTI-OBJECTIVE PROCESS OPTIMIZATION	**Oral**	Mohammad N. Saquib[1], Richard Larson[1], Jiang Li[2], Sergii G. Kravchenko[3] and **Oleksandr G. Kravchenko[1]** *[1] Mechanical and Aerospace Engineering Department, Old Dominion University, USA* *[2] Electrical and Computer Engineering Department, Old Dominion University, USA* *[3] Department of Materials Engineering, The University of British Columbia, Canada*	FAILURE PREDICTION IN MOLDED COMPOSITES USING RESIDUAL STRESS AND DEEP LEARNING DRIVEN MICROSTRUCTURE RECONSTRUCTION
17:00	**Oral**	**Nuri Ersoy** [1], Mehmet Can Engül, Pınar Acar[2] *[1] Boazici University, TURKEY* *[2] Virginia Tech University, USA*	A NEURAL NETWORK APPROACH TO COMPOSITES PROCESS SIMULATIONS	**Oral**	**J. Gerritzen[1],** A. Hornig[1,2,3] and M. Gude[3] *[1] Institute of Lightweight Engineering and Polymer Technology, TUD Dresden University of Technology, Germany* *[2] Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig (ScaDS.AI), TUD Dresden University of Technology, Germany* *[3] Department of Engineering Science, Solid Mechanics and Materials Engineering, University of Oxford, OX1 3PJ, Oxford, United Kingdom*	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** *Aerospace Engineering, Indian Institute of Technology Madras, India*	MODELLING OF CURING PROCESS OF FIBER REINFORCED POLYMER COMPOSITES IN AUTOCLAVE USING AI	**Oral**	**Runze Li,** Mário Miranda and Silvestre T. Pinho *Department of Aeronautics, Imperial College London, London, UK*	THE UNCERTAINTY QUANTIFICATION OF COMPOSITE FAILURE PREDICTIONS BASED ON BAYESIAN NEURAL NETWORKS
17:40	**Oral**	**Jia Ge[1, 2]**, Dan Sun[1] and Yan Jin[1] *[1] School of Mechanical and Aerospace Engineering, Queen's University, Ireland* *[2] Centre of Micro/Nano Manufacturing Technology (MNMT-Dublin), University College Dublin, Ireland*	TACKLING DATA SCARCITY IN COMPOSITE MANUFACTURING DEFECTS PREDICTION THROUGH VIRTUAL SAMPLE GENERATION (VSG): A CASE STUDY WITH CFRP DRILLING	**Oral**	Attada Phanendra Kumar[1], Shailesh Garg[2], Souvik Chakraborty[2], Dineshkumar Harursampath[1] and **Sathiskumar Anusuya Ponnusami[3]** *[1] Department of Aerospace Engineering, Indian Institute of Science, Bengaluru, India* *[2] Department of Applied Mechanics, Indian Institute of Technology Delhi, Delhi, India* *[3] Department of Engineering, City St George's, University of London, London, United Kingdom*	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	**Plenary Lecture: Dr Pierre-Yves Méchin** *Composites structural analyst & materials specialist, PlyNow* **FROM MOLECULE TO STRUCTURE, COMPOSITES BEHAVIOUR AND PERFORMANCE ENHANCED BY AI** **Chair:** Anoush Poursartip, The University of British Columbia, Canada **Location:** Lecture Theatre

Session 3 **AI for Intelligent Composite Manufacturing and Control** **Chair:** Oleksandr Kravchenko, Old Dominion University, USA **Location:** Lecture Theatre				**Session 4** **Data-Driven Surrogate Models and Accelerated Simulations** **Chair:** Wenbin Yu, Purdue University, USA **Location:** Cinema Room G.H01		
Time	**Type of presentation**	**Authors**	**Title**	**Type of presentation**	**Authors**	**Title**
10:10	**Keynote**	**Ramy Harik** *Clemson Composites Center, Clemson University*	TOWARDS SMART AUTOMATED FIBER PLACEMENT	**Keynote**	**Pavana Prabhakar[1],** Haotian Feng[2], Sabarinathan P Subramaniyan[3], and Hridyesh Tewani[4] [1] *Department of Mechanical Engineering, University of Wisconsin-Madison, USA* [2] *Department of Civil & Environmental Engineering, University of Wisconsin-Madison, USA*	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 *Bristol Composites Institute, University of Bristol, Bristol, BS8 1TR, United Kingdom*	ASPECTS OF SPATIAL TIME SERIES FORECASTING FOR COMPOSITE MANUFACTURING PROBLEMS OF VARIOUS DIMENSIONALITY	**Oral**	**M. Petrolo[1],** M. Santori[1], K. Johnson[2], E. Zappino[1] and N. Zobeiry[2] [1] *MUL2 LAB, Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Italy* [2] *Department of Materials Science and Engineering, University of Washington, Seattle, WA, USA*	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 *University of Rome "La Sapienza", Department of Chemical Engineering Materials Environment*	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] *[1] Departamento de Inteligencia Artificial, Universidad Politécnica de Madrid, Spain* *[2] IMDEA Materiales, , Madrid, Spain* *[3] Departamento de Ciencia de Materiales, Universidad Politécnica de Madrid , Spain*	A DEEP SURROGATE MODEL FOR ACCELERATING LCM MOULD-FILLING SIMULATIONS IN UNSTRUCTURED AND THREE-DIMENSIONAL MESHES
11:20	**Coffee Break**					
Session 3 **AI for Intelligent Composite Manufacturing and Control** **Chair:** Ramy Harik, Clemson University, USA **Location:** Lecture Theatre				**Session 4** **Data-Driven Surrogate Models and Accelerated Simulations** **Chair:** Bassam El Said, University of Bristol, UK **Location:** Cinema Room G.H01		
11:50	**Oral**	**Jan Wolf[1],** Aaron Vogel[2], Mathias Morgenstern[2] Christian Prescher[3], Ulrich Burgbacher[4], Manuel Prätorius[4], Luis Garcia[5], Benjamin Risse[5], Thomas Behnisch[1] and Maik Gude[1] *[1] Institute for Lightweight Engineering and Polymer Technology, TUD Dresden University of Technology, Germany* *[2] SURAGUS GmbH, Germany* *[3] STRUCNAMICS Engineering GmbH, Germany* *[4] tapdo technologies GmbH, Germany*	TAILORING CARBON FIBERS COMBINING NOVEL INLINE SENSORS AND MACHINE LEARNING	**Oral**	**Aewis K.W. Hii,** Stephen R. Hallett and Bassam El Said *Bristol Composites Institute, University of Bristol, UK*	MODELLING DEFECTS AND PROGRESSIVE 3D FAILURE IN LARGE COMPOSITE COMPONENTS WITH SHELL ELEMENTS: A DATA-DRIVEN, MULTI-SCALE APPROACH
12:10	**Oral**	**Simone Bancora[1],** Tim Newman[1], Paris Mulye[2] *[1] National Composites Centre, United Kingdom* *[2]Quantiflex Simulations SAS, France*	USE OF DEEP REINFORCEMENT LEARNING TO ACHIEVE REAL-TIME CONTROL OF A RESIN INFUSION PROCESS	**Oral**	**Jens Wiegand[1]** and Giuseppe Zumpano *[1] COMPACT Composite Impact Engineering LTD, UK,* *[2] Rolls Royce PLC, UK*	ACCELERATING COMPOSITE IMPACT SIMULATIONS BY THE USE OF NEURAL NET`WORK BASED SURROGATE MODELS

12:30	**Oral**	**Patrick Flore,** Fabian Röder, Kevin Chen, Andreas Gebhard *Leibniz-Institut für Verbundwerkstoffe, Germany,*	GEOMETRY-BASED SYNTHETIC DATA AND DEEP LEARNING FOR ONLINE SURFACE INSPECTION OF FIBER-REINFORCED COMPOSITES	**Oral**	Shuang Yan[1], **Mikhail Matveev[1],** Michael Causon[2], Marco Iglesias[2], Andreas Endruweit[1], and Michael Tretyakov[2] *1 Composites Research Group, Faculty of Engineering, University of Nottingham, Nottingham, UK* *2 School of Mathematical Sciences, Faculty of Science, University of Nottingham, Nottingham, UK*	A SURROGATE MODEL FOR INVERSE PARAMETER ESTIMATION IN RESIN TRANSFER MOULDING PROCESSES
12:50	**Lunch**					
	Session 5 **AI in Non-Destructive Testing and Structural Health Monitoring** **Chair:** Yentl Swolfs, KU Leuven, Belgium **Location:** Lecture Theatre			**Session 6** **AI-Driven Design and Industrial Applications in Composites** **Chair:** Pavana Prabhakar, University of Wisconsin-Madison, USA **Location:** Cinema Room G.H01		
13:50	**Oral**	**A. Tabatabaeian[1],** B. Jerkovic[2], P. Harrison[1], E. Marchiori[2] and M. Fotouhi[3] *[1] James Watt School of Engineering, University of Glasgow, UK,* *[2] Institute of Computing and Information Sciences, Radboud University, the Netherlands* *[3] Faculty of Civil Engineering and Geosciences, Delft University of Technology, the Netherlands*	DETECTION OF BARELY VISIBLE IMPACT DAMAGE IN CFRP COMPOSITE PANELS USING DEEP LEARNING MODELS AND HYBRID GLASS/CARBON SENSORS	**Oral**	**Joseph Kirchhoff[1]**, Thomas O'Leary-Roseberry[1], John Yao[1], Dingcheng Luo[1], Yohannes Bekele[1], Tom Seidl[2], Tyler Hudson[3], Andy Newman[3], Wesley Tayon[3], Mehran Tehrani[4], Omar Ghattas[1] *[1] The University of Texas at Austin, USA,* *[2] Sandia National Labs, USA* *[3] NASA Langley Research Center, USA* *[4] The University of California at San Diego, USA*	MICRON-SCALE HETEROGENEOUS CHARACTERIZATION OF THERMOPLASTIC COMPOSITES VIA SEM-DIC, FINITE ELEMENTS & NEURAL OPERATORS
14:10	**Oral**	**Emmanuel Fabing [1,2]**, Pierre-Yves Méchin [1] and Vincent Keryvin [2] *[1] Dassault Systèmes, France* *[2] Université Bretagne Sud, IRDL, France*	AI BASED FIBRE MISALIGNMENT MEASUREMENT	**Oral**	**Göran Fernlund[1,2],** Alireza Forghani[1], Anthony Floyd[1], and Anoush Poursartip[1,2] *[1] Convergent Manufacturing Technologies, Canada* *[2] The University of British Columbia, Materials Engineering, Canada*	A STRUCTURED APPROACH TO MERGING AI AND ML INTO ESTABLISHED COMPOSITES PROCESS SIMULATION AND PROCESS ANALYTICS
14:30	**Oral**	**Jonas Naumann[1,2],** Jonas P. Appels[1], Philipp Sämann[1], Timo de Wolff[2] and Christoph Brauer[1] *[1] Institute of Lightweight Systems, German Aerospace Center (DLR) Stade, Germany* *[2] Institute of Analysis and Algebra, Technische Universität Braunschweig, Braunschweig, Germany*	ENHANCING COMPOSITE MICROGRAPH ANALYSIS WITH SEMANTIC SEGMENTATION	**Oral**	**J. Kucera** *National Composites Centre, UK*	CompoST – COMPOSITE STANDARD FOR COMPOSITE DATA TRANSFER AND INTEROPERABILITY

14:50	**Oral**	**Mahoor Mehdikhani,** Rui Guo, Shailee Upadhyay, Christian Breite, and Yentl Swolfs *Department of Materials Engineering, KU Leuven, Belgium,*	SEGMENTATION IN X-RAY COMPUTED TOMOGRAPHY IMAGES USING DEEP LEARNING	**Oral**	**Hussain Abass [1,2]**, Ross Allen[1], Andrew Corbett [1,3] and Ton Peijs[2] [1] digiLab, UK [2] WMG, University of Warwick [3] Alan Turing Institute, UK	LEVERAGING UNCERTAINTY FOR HIGH STAKES COMPOSITES CHALLENGES
15:10	**Coffee Break and Poster Session**					
Session 5 **AI in Non-Destructive Testing and Structural Health Monitoring** **Chair:** Mahoor Mehdikhani, KU Leuven, Belgium **Location:** Lecture Theatre				**Session 6** **AI-Driven Design and Industrial Applications in Composites** **Chair:** Tong-Earn Tay, National University of Singapore, Singapore **Location:** Cinema Room G.H01		
15:50	**Oral**	**Umeir Khan[1],** Vincent K. Maes[1], Rob Hughes[2], Petar Zivkovic[3], Jon Wright[3], Turlough McMahon[3], and James Kratz[1] [1] *Bristol Composites Institute, Department of Aerospace Engineering, University of Bristol, United Kingdom* [2] *Department of Mechanical Engineering, University of Bristol, United Kingdom* [3] *Airbus UK, United Kingdom*	TRANSFER LEARNING FOR EFFICIENT PHOTO-INSPECTION OF IN-PLANE WAVINESS	**Oral**	**Phil Druiff** **Krasimir Angelov** **Jakub Kucera** *National Composites Centre, UK*	WRINKLE AI: FASTER DEFECT DETECTION IN NCF MATERIALS NEXTGENINFUSION: SMART CONTROL TURBO PROJECT
16:10	**Oral**	Rui Guo, Mahoor Mehdikhani, Christian Breite and **Yentl Swolfs** *Materials Engineering, KU Leuven, Belgium*	A 2D PACKING GENERATOR FOR UNIDIRECTIONAL FIBRE-REINFORCED COMPOSITES BASED ON A GENERATIVE ADVERSARIAL NETWORK	**Oral**	**S. Psarras[1],** G. Sotiriadis[1], M. Sergolle[2], T. Balutch[2], E. Billaudeau[2] and V. Kostopoulos[1] [1] *Department of Mechanical Engineering & Aeronautics, University of Patras, Greece* [2] *Naval Group, Centre d'Expertise des Structures et Matériaux Navals Technocampus Océan, France*	ENHANCING REPAIR PATCH DESIGN FOR THICK COMPOSITE STRUCTURES IN NAVAL APPLICATION USING ARTIFICIAL INTELLIGENCE
16:30	**Oral**	**A. Gazzola,** M. Quaresimin, P.A. Carraro and M. Zappalorto *Department of Management and Engineering, University of Padova, Vicenza, Italy.*	DEEP LEARNING APPROACH FOR STRUCTURAL HEALTH MONITORING OF MULTIDIRECTIONAL LAMINATES VIA ELECTRICAL MEASUREMENTS	**Oral**	Yilun Dong[1], **Zhong Zhang[1]** [1] *School of Engineering Science, University of Science and Technology of China, China*	ARTIFICIAL NEURAL NETWORKS APPLIED TO POLYMER COMPOSITES
16:50	**Oral**	Mengyue He[1,2], Zhifang Zhang[1] and **Karthik Ram Ramakrishnan[3]** [1] *Research Center for Wind Engineering and Engineering Vibration, Guangzhou University, Guangzhou, China* [2] *College of Engineering, Shantou University, Shantou, China*	SUPPORT VECTOR MACHINE ALGORITHMS FOR DELAMINATION ASSESSMENT IN VIBRATION BASED SHM	**Oral**	**Andrejs Krauklis[1]** *Latvia University of Life Sciences and Technologies, Faculty of Forest and Environmental Sciences, Institute of Civil Engineering and Woodworking, MEI Core Group, Latvia*	MODULAR MATERIALS INFORMATICS FRAMEWORK FOR ASSESSING COMPOSITE MATERIAL AGEING

		[3] *Bristol Composites Institute, University of Bristol, United Kingdom*				
17:10	**Oral**	**Mihai M. Vasilache[1,2],** Iryna Tretiak[3], Rostand B. Tayong[1] and Vladan Velisavljevic[1] [1] *Institute for Research in Engineering and Sustainable Environment (IRESE),School of Computer Science and Technology, University of Bedfordshire, Luton, United Kingdom* [2] *GKN Aerospace Service Limited, London Luton Airport, Luton, Bedfordshire, United Kingdom* [3] *Bristol Composites Institute, University of Bristol, United Kingdom*	USING MACHINE LEARNING CONVOLUTION NEURAL NETWORK METHODS FOR THE ULTRASOUND CHARACTERISATION OF POROSITY ACROSS CARBON FIBRE REINFORCED POLYMER LAYERS	**Oral**		
17:30	**END OF THE DAY 2**					
19:00	**GALA DINNER: THE SANSOVINO HALL AT BRISTOL HARBOUR HOTEL**					

Wednesday, 3rd of September 2025

09:00	**Coffee and Pastries**
09:30	**Plenary Lecture: Dr Navid Zobeiry** *Associate Professor in the Materials Science & Engineering Department at the University of Washington in Seattle, USA* **Applied AI for Composites: From Accelerated Testing to Autonomous Certification and Smarter Engineering** **Chair:** Carlos González, IMDEA Materials, Spain **Location:** Lecture Theatre

Session 7

Physics-Informed Neural Networks (PINNs) and Physics-Based AI
Chair: Carlos González, IMDEA Materials, Spain
Location: Lecture Theatre

Time	Type of presentation	Authors	Title
10:20	**Oral**	**Ehsan Ghane[1],** Marina Maia[2], Iuri Rocha[2], Martin Fagerström[3], and Mohsen Mirkhalaf[1] *[1] Department of Physics, University of Gothenburg, Sweden,* *[2] Department, Delft University of Technology, The Netherlands* *[3] Department of Industrial and Materials Science, Chalmers University of Technology, Sweden*	HIERARCHICAL PHYSICALLY RECURRENT NEURAL NETWORKS FOR MULTI-SCALE MODELING OF WOVEN COMPOSITES
10:40	**Oral**	Sahar Abouali, Anoush Poursartip**, Reza Vaziri** *Composites Research Network, Departments of Civil Engineering and Materials Engineering, The University of British Columbia, Vancouver, BC, Canada*	A PHYSICS-INFORMED NEURAL NETWORK FOR INVERSE CHARACTERIZATION OF COMPOSITE DAMAGE MODELS USING FULL-FIELD EXPERIMENTAL DATA

11:00	**Oral**	**Bernabe Lorenzo Avila[1],** Nils Meyer[2] and Dietmar Koch[3] *[1] Materials Engineering, University of Augsburg, Germany,* *[2] Data-driven Product Engineering and Design, University of Augsburg, Germany* *[3] Materials Engineering, University of Augsburg, Germany*	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 **Location:** Lecture Theatre			
11:50	**Oral**	**John M. Hanna[1 2]** *[1] Akhet solutions, Rennes, France* *[2] Inria Rennes, France*	APPLICATIONS OF PHYSICS-INFORMED NEURAL NETWORKS TO LIQUID COMPOSITE MOLDING
12:10	**Oral**	**Tobias Würth[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 ANSIOTROPIC MATERIALS
12:30	**Oral**	**Shady Adib[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** **TOUR TO THE NATIONAL COMPOSITE CENTRE AND ISAMBARD AI (PRE-BOOKED ONLY)**		

	Start at 14:30 estimated time return time 17:00 (TBC)