



ICCM 23
INTERNATIONAL CONFERENCE ON
COMPOSITE MATERIALS
BELFAST 2023
30 JULY – 4 AUGUST



PROGRAMME



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WELCOME TO ICCM23

When the city of Belfast was honoured by being selected to host the 23rd International Conference on Composite Materials (ICCM23), during ICCM21 in Xi'an, China, in 2017, no one could have foreseen the global disruption and stasis that we would all face as a consequence of a global pandemic, which necessitated postponing this conference by two years. The decision we took in February 2021 to delay the event, having already devoted significant time and resources to its planning, was a difficult one to make. Yet, we faced it with resilience and a steadfast commitment to the safety and well-being of our global community.

I am consequently doubly proud to be able to finally deliver this important conference which is the premier conference in the science and engineering of composite materials and structures. The ICCM was established in 1975 and has since been held biennially in different cities around the world. The mission of ICCM is to act as a focal point where the global community of researchers and industry practitioners can come together to exchange knowledge and information on the latest developments in the field. It is also a forum where early career researchers have the opportunity to hear from, and engage with, leading academic and industry personnel in the field.

This is the first time that the ICCM has been held on the island of Ireland and it is appropriate that Belfast, with its rich pioneering and engineering heritage, should be chosen to host ICCM23. The birthplace of Lord Kelvin and home to John Boyd Dunlop, Belfast was a global powerhouse of the late Industrial Revolution, becoming Ireland's pre-eminent industrial city, where the RMS Titanic was built in what was then the world's largest shipyard. Belfast is home to the oldest production aircraft manufacturer in the world, Short Brothers, which was founded in 1908, purchased by Bombardier in 1989, and acquired by Spirit AeroSystems in 2020. The pioneering technology for the design and manufacture of the highly-integrated resin-infused composite wing, used on the Airbus A220, was developed here. Throughout this conference, and for those fortunate enough to have reserved a place on one of our technical tours, you will have ample opportunity to learn more about the world-leading composite technologies and innovations that are being developed in this part of the world. Today, Belfast is a vibrant, modern and increasingly multicultural city with a solid high-value manufacturing base and an entrepreneurial spirit. I trust that you have booked some extra time to explore this unique city and its surroundings.

Advanced (man-made) composite materials have been around for several decades and increasingly utilised in various industries, notably aerospace, elite motorsports, luxury automobiles, wind energy, marine, and in sporting equipment. While there has been astounding headway in the scientific and engineering facets of these composites, notable challenges persist. One of the most pressing concerns involves striking a balance between continued advancements and environmental stewardship. There are ample opportunities yet to be tapped, and breakthroughs to be made, in harnessing composites to tackle the mounting need for energy. As energy generation stands as the main contributor to climate change, the potential to address this issue through further exploitation of composites offers a promising avenue towards sustainable progress. Consequently, the theme of ICCM23 is Composites at the Heart of Sustainable Energy Solutions.

Energy sustainability has become a global priority. The development of renewable energy is a major contributor to the sustainable energy hierarchy, and composites already play an important role in the development of associated technologies and products based on solar, wind, geothermal, tidal or hydropower. At the top of this energy hierarchy is energy saving and energy efficiency. Here composites will continue to play an increasingly important role. New composite materials, defined in their broadest sense, will play a pivotal role in the development of highly energy efficient technologies, products and services and further research into the material's own sustainability and recyclability suggests that the community still has a number of substantial intellectual challenges ahead.

We have over 1100 delegates registered for this conference; from academia, research institutes and industry, and presenters and authors from over 50 countries across the three ICCM world regions. This should make for an exciting and vibrant meeting of minds!

The full ICCM23 program is printed in this book and is also available on the ICCM23 app and the ICCM23 website. Here you will find information on the conference venue and the location of session rooms, exhibition area, lunch and coffee breaks, and information on our conference sponsors. The ICCM23 conference proceedings contain the full abstract, full paper or PowerPoint presentation, and are accessible through the app or website.

Throughout the conference, updates pertaining to events and practical matters will be communicated digitally through notifications on both our website and the dedicated Conference app. Please also make a habit of checking the digital notice boards located outside each session room to stay informed about any unexpected adjustments to the schedule. Should you require any support during the conference, don't hesitate to reach out to the ICCM23 team. There will be assistants readily available in every session room to provide assistance.

Finally, bringing a conference of this size and scope together, would not be possible without the support of a dedicated team. I would like to give a heartfelt thanks to my Technical Chair, Conor McCarthy, our conference partner, CPI, and the organisation support teams from Queen's University Belfast and University of Limerick. Thanks also to the UK/Ireland Local Organising Committee, the International Scientific Committee, reviewers, and student volunteers.

Brian G. Falzon
Conference Chair

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CONFERENCE CHAIR



Brian G. Falzon

DOWNLOAD THE CONFERENCE APP

The conference app is a great way to manage your schedule at a glance over the week of the conference. You can view the full programme, upload a profile photo, see the list of speakers, exhibitors and posters in the app. There is also a section for attendee networking, making notes and some key information you may need over the next 5 days.

Any updates to the programme will also be communicated through the app.



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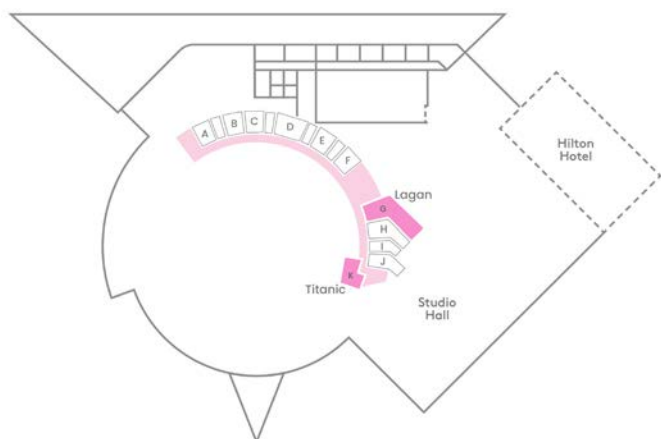
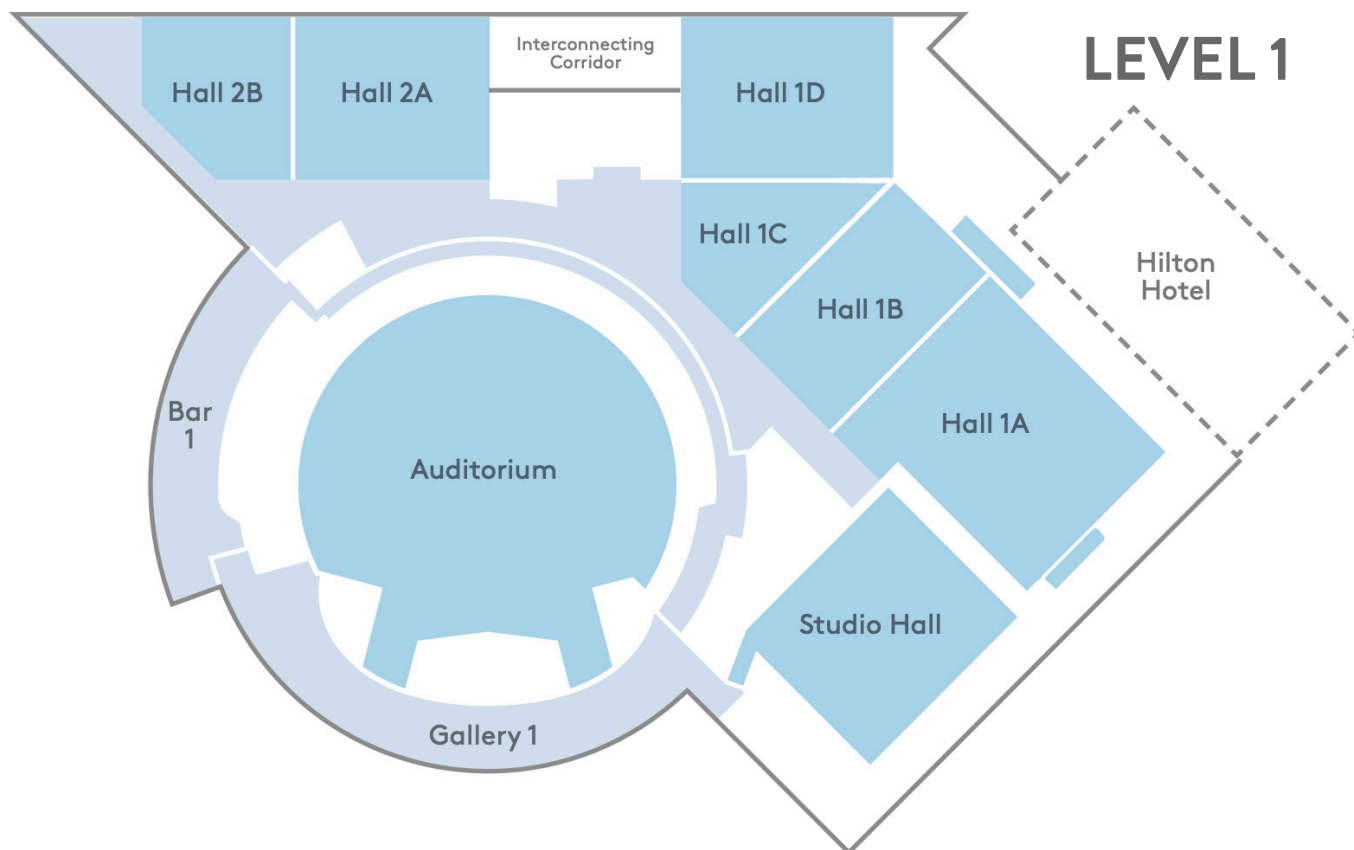
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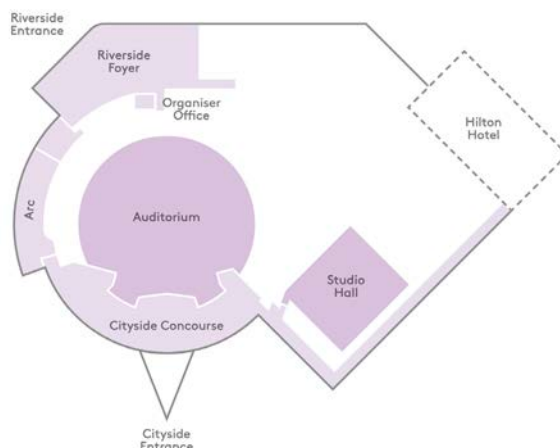
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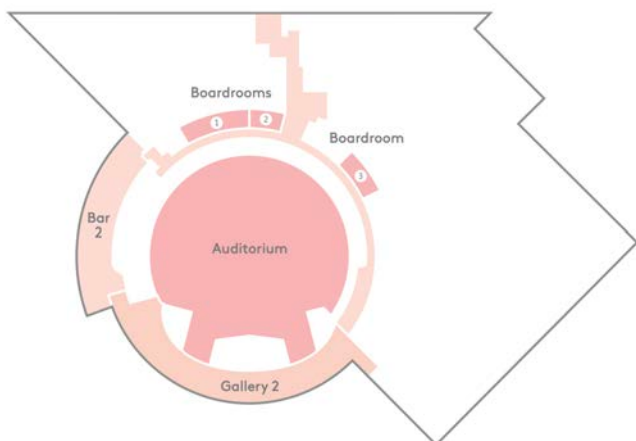
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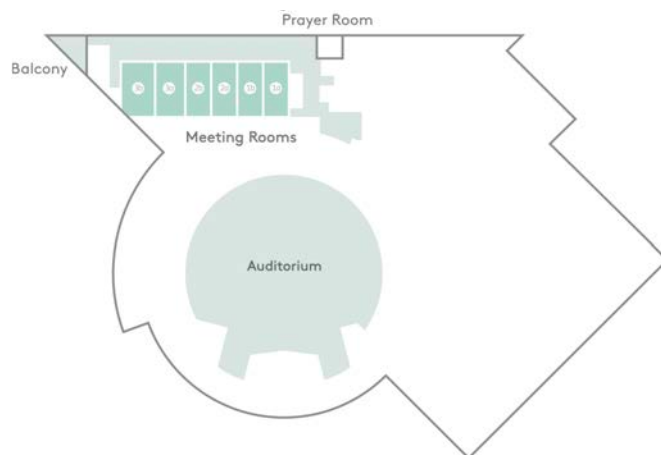
MEZZANINE LEVEL



GROUND FLOOR



LEVEL 2



LEVEL 3

GENERAL INFORMATION

REGISTRATION

Please ensure you collect your Conference Badge from the registration desks located within the Conference Venue. You are required to wear your Conference Badge at all times including the subsequent social programme.

The registration desk will be open at the times below to collect your badge and for any questions.

Sunday 30th July: 14:00 - 18:00

Monday 31st July: 7:30 - 18:30

Tuesday 1st August: 7:30 - 18:30

Wednesday 2nd August: 8:00 - 18:30

Thursday 3rd August: 8:00 - 18:00

Friday 4th August: 8:00 - 14:00

PROGRAMME

The programme was up to date at the time of print. Any updates to the programme will be communicated through the app. The most up to date version of the programme can be found online at: www.iccm23.org/programme

TECHNICAL TOURS

ICCM are hosting Technical Tours departing by coaches from the conference venue at 1:15pm for the Spirit and Artemis Technologies and NIACE and 1:45pm for Queens University tours arriving back between 4:30pm and 5:00pm on Tuesday 1st August and Thursday 3rd August.

Lunch will be available from 12.45 in Riverside Foyer for attendees of the tours. Sign up is required to attend the tours.

SPEAKER PREVIEW ROOM

A speaker preview room is available for all speakers during the conference. This is a room specifically reserved for speakers to load their presentations.

The speaker preparation room is located in boardroom 2 at the ICC and will be staffed by professional AV technicians and will be open during the following times:

Monday 31st July: 7:30 - 18:00

Tuesday 1st August: 7:30 - 18:00

Wednesday 2nd August: 7:30 - 18:00

Thursday 3rd August: 7:30 - 18:00

Friday 4th August: 7:30 - 12:00

WIFI

WIFI is available at the ICC Belfast. Free WiFi is available on 'ICC Belfast' with no password required.

DIETARY

If you have a food allergen, please speak to the ICC Belfast's Allergens Champion in the green apron throughout the lunch and coffee breaks during the conference.

The ICC Belfast operates an artisan kitchen which contains all food ingredients and all recognised allergens; therefore the ICC Belfast cannot guarantee the absence entirely of any allergen.

CONTACT INFORMATION

Emergency Services:

Call 999 for Ambulance/Police/Fire

First Aid:

The conference will have professional first aid assistance onsite – see staff at the registration desk for information.

Delegate Queries:

Can be dealt with via the registration desk in ICC Belfast, any other issues please do not hesitate to email: iccm23conferencepartners.com

We look forward to welcoming you all to Belfast! Best regards, on behalf of Conference Partners International.

Leonie Postma - Account Manager

Glen Kelly - Conference Producer

Alicia Heslop - Delegate Services Executive

SOCIAL EVENTS

Welcome Reception

Monday 31st July 2023 | 18:45 - 21:00



The ICCM23 Welcome Reception will take place at the ICC Belfast.

The welcome reception will allow you to connect and network with colleagues and friends to kick off the beginning of the 23rd International Conference on Composites Materials.

One complimentary drink is included within your attendance to the Welcome Reception.

Student Party

Tuesday 1st August 2023 | 19:15 - 23:00



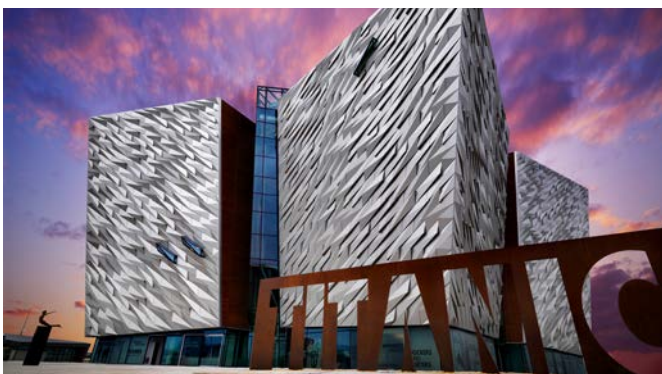
The ICCM23 Student Party will take place at Grannie Annies.

Make your way to the legendary Grannie Annies in the heart of Belfast to network together with your friends, old and new! The quirky decor of Grannie Annies, with its eclectic mix of vintage and contemporary elements, sets the perfect backdrop for a night of fun after a busy day of conference proceedings. A ticket is required to attend.

One complimentary drink and food is included with your attendance at the Student Party.

Conference Dinner

Thursday 3rd August 2023 | 19:30 - 23:00



The ICCM23 Conference Dinner will take place at the Titanic Belfast

Join new friends and colleagues at this historic Belfast venue for dinner and evening entertainment. A ticket is required to attend the dinner.

Coaches to Titanic Belfast will be provided from ICC Belfast. First Departure will be at 19.15 and the last coach will depart at 19.45. There is no return transport arranged after the event.

The dress code is smart casual/business attire.

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QUEEN'S UNIVERSITY

Queen's University Belfast is one of the top 200 universities in the world (Times Higher Education World University Rankings 2023). A member of the Russell Group UK's 24 leading research-intensive universities, Queen's is an international centre of research and education, with a student-centred ethos Queen's is ranked 18th in the world for international outlook (Times Higher Education World University Rankings 2023), 1st in the UK for entrepreneurial impact (Octopus Ventures, 2020) and 24th in the UK for Research Power (REF 2021/ Times Higher Education). Our research shapes worlds and continues to make a difference to lives and livelihoods, with 88% assessed as world leading or internationally excellent.

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NATIONAL COMPOSITES CENTRE / BRISTOL COMPOSITES INSTITUTE

The National Composites Centre (part of the High Value Manufacturing Catapult) and the Bristol Composites Institute (part of the University of Bristol) together form a world-leading composites research and development hub. Working together, with research specialisms spanning from fundamental science to industrial application, they address complex global challenges for the benefit of UK industry and society.

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Confirm Research Centre's vision is to transform and grow Irish manufacturing on a global stage by integrating intelligence within products, production systems and supply chains using intelligent, real-time orchestration and optimisation of physical (people & equipment), digital and business processes within factories and across the entire value chains. Confirm's research enables more confident decision-making throughout organisations, including design, production, quality, and maintenance; providing end-to-end visibility and traceability.

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VISIT BELFAST

Visit Belfast is the official destination marketing organisation for the Belfast city. We are a public-private sector partnership that represents over 450 tourism businesses, operators and services, dedicated to promoting Belfast as a tourist destination.

Web: www.visitbelfast.com



INSTRON

For over 75 years, Instron has supplied more than 80,000 testing systems to the world's leading manufacturers, and educational, scientific, and research institutions.

Instron is a pioneer in the field of composite materials and has been developing systems and participating in ASTM and ISO standards committees to develop new testing methods since the beginning of this industry.

Web: www.instron.com



SOMAC

SoMAC CRC (Sovereign Manufacturing Automation for Composites Cooperative Research Centre) binds 33 Australian industry and research partners in a 10 year \$250 million composites investment platform including University of New South Wales (UNSW), Deakin University, University of Sydney, University of Queensland, University of Western Australia, Royal Melbourne Institute of Technology (RMIT) and ANSTO. Established in early 2023, first projects are announced with Australian-based Gilmour and Hypersonix.

For a private briefing, contact Prof. Gangadhara Prusty: g.prusty@somac-crc.com

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EXHIBITION



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The University of Delaware's Center for Composite Materials (UD-CCM) has been internationally recognized as a center of excellence for interdisciplinary research, education, and technology transfer in the areas of materials and synthesis, multifunctional materials, processing science, mechanics and design, sensing and control, and software. Utilizing 52,000 square feet of state-of-the-art facilities and equipment valued at over \$25M, UD-CCM develops models and simulations in a "virtual manufacturing" environment for process optimization and tool design, leading to improved quality, affordability, and innovative new composite manufacturing processes.



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THE ROYAL SOCIETY

Royal Society Publishing has recently published a theme issue of Philosophical Transactions A entitled Ageing and durability of composite materials, compiled and edited by Marco Gigliotti and Jean-Claude Grandier. This issue aims to update current research in the field by clarifying the interplay between chemical and physical mechanisms involved in the degradation processes, and providing test protocols and design rules that account for ageing and durability. The articles can be accessed directly at www.bit.ly/TransA-2240.

Purchase the print issue at the reduced price of £40 per issue by contacting: sales@royalsociety.org



DYNAMIC & FATIGUE TESTING SYSTEMS

1 kN ← → 5 MN

Instron is a pioneer in the field of testing composite materials, and have been working closely with our customers and participating in ASTM and ISO standards committees to develop new testing methods since the beginning of this industry.



EXHIBITION



EXHIBITION OPENING TIMES

The ICCM 23 exhibition is located in Hall 1 BCD.

Monday 31st July: 7:30 - 18:00

Tuesday 1st August: 7:30 - 18:00

Wednesday 2nd August: 7:30 - 18:00

Thursday 3rd August: 7:30 - 18:00

Friday 4th August: 7:30 - 14:00

EXHIBITORS

- 3 Airtech Advanced Materials UK Ltd.
- 24 AMIC
- 4 BRUKER
- 13 BRUKER Nano Surfaces & Metrology
- 1 CARBON FLY, Inc.
- 6 Dia-Stron Ltd.
- 10 National Composites Centre /
Bristol Composites Institute
- 2 ICCM24 University of Delaware CCM
- 11 Netzsch Thermal Instruments UK
- 14 QQB - CCPG
- 8 Step Engineering S.R.L
- 18 Surface Measurement Systems
- 12 SoMAC
- 25 Singapore Tourism (Tues & Wed)
- 5 Visit Belfast

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- Reza Vaziri, University of British Columbia, Canada
- Martin Veidt, University of Queensland, Australia
- Bas Veldman, GKN/Fokker, Netherlands
- Riccardo Vescovini, Politecnico di Milano, Italy
- Tony Vizzini, Wichita State University, United States
- Tony Waas, University of Washington, United States
- Daniel Wagner, Weizmann Institute of Science, Israel
- Chun Wang, University of NSW, Australia
- John Wang, Defence Science & Technology, Australia
- Hao Wang, University of Southern Queensland, Australia
- Jihui Wang, Wuhan Polytechnic University, China
- Brian Wardle, Massachusetts Institute of Technology, United States
- Xinran Xiao, Michigan State University, United States
- Zhongmin Xue, Sinoma Science & Technology Co., Ltd, China
- Mostafa Yourdkhani, Colorado State University, United States
- Jianyong Yu , Donghua University, China



SCIENTIFIC PROGRAMME

Foreword by the ICCM23 Technical Chair

Welcome to the 23rd International Conference on Composite Materials. We are delighted that you have joined us and are contributing to this exciting scientific programme. The overarching theme of ICCM23 is Sustainability, and when designing this programme we thought about it in its most holistic context, to include environmental, economic and societal sustainability. Indeed, Composite materials and the wonderful structures and products comprised of them contribute to this sustainability trinity by adding significant value to renewable energy systems, state-of-the-art transport vehicles, all the way to novel medical devices, to name but a few.

The overarching design philosophy of this scientific programme was five-fold by 1. Building on the strengths of previous ICCM conferences; 2. Capturing as much of the research as possible across this wide field; 3. Showcasing excellent research, novel developments and beyond state-of-the-art industry practice; 4. Afford as much space as possible for researchers and Industry to orally present, with ample time for discussion, debate, and social interaction; and 5. Key consideration to equality, diversity and inclusion with over 50 nationalities across the three ICCM world regions represented in addition to a dedicated Women in Composites Leadership Forum, for which 407 of you have registered to attend on Wednesday at Lunchtime. Indeed, we have organised ICCM23 around 68 different composites research themes in the six overarching domains of Composites Design, Composite Materials & Structures, Composites Manufacturing & Processing, Composites Characterisation, Composites Behaviour & Life Cycle Performance and Composites Applications. You have opted to have your paper reviewed in one of these 68 domains, and each paper has been internationally peer reviewed by at least two reviewers and deemed to be of sufficiently high quality to showcase at this prestigious conference. Importantly we have organised all papers, orals, mini-orals and posters into their respective theme, and many themes run over a number of days.

Finally, I have thoroughly enjoyed designing this programme with you all over the last four years, and I would like to sincerely thank you the authors of the papers, the reviewers, ICCM Chair Brian, ICCM Executive, Plenary and Keynote speakers, Industry, the organising committees, and the conference organisers, Conference Partners, for bringing this programme to life. Finally, I urge you to think about how the wonderful research you will witness during the conference can help promote a sustainable future for us all, and most of all enjoy ICCM23!

With Warm regards,

Conor McCarthy

Technical Chair

PROGRAM COLOUR CODES

MONDAY 31st JULY

TUESDAY 1st AUGUST

WEDNESDAY 2nd AUGUST

THURSDAY 3rd AUGUST

FRIDAY 4th AUGUST

TECHNICAL CHAIR



Conor McCarthy

SCALA AND PLENARY LECTURES

The Scala lecture and all plenary lectures will be held in the main auditorium

MONDAY 31st JULY

TIME	TITLE	PRESENTER	AFFILIATION
9:15 - 10:00	SCALA Lecture: Reflection and Reset	Professor Mike Hinton	High Value Manufacturing Catapult, UK
14:00 - 14:45	The Composite Airframe: How to Keep Attractiveness?	Dr. Chantal Fualdes	Airbus

TUESDAY 1st AUGUST

TIME	TITLE	PRESENTER	AFFILIATION
8:35 - 9:20	Design of Composite Materials and Structures across the Scales: Physical and Datadriven Models	Professor Pedro Camanho	University of Porto
14:10 - 14:55	The Challenge of High Rate Composite Manufacture in Aerospace	Phillip Crothers	Boeing

WEDNESDAY 2nd AUGUST

TIME	TITLE	PRESENTER	AFFILIATION
8:35 - 9:20	Carbon Fibre Reinforced Plastics for a Sustainable Society	Dr. Kenichi Yoshioka	Toray Industries, Inc.
14:10 - 14:55	Advances in Composite Pressure Vessels for the Transport and Aerospace Markets	Kelly Prize; Professor Luke P. Djukic	Omni Tanker Pty Ltd & University of New South Wales

THURSDAY 3rd AUGUST

TIME	TITLE	PRESENTER	AFFILIATION
8:35 - 9:20	Accelerating the Role of Modeling and Simulation in Composites Manufacturing	Professor Suresh Advani	University of Delaware

FRIDAY 4th AUGUST

TIME	TITLE	PRESENTER	AFFILIATION
8:35 - 9:20	R&D Journey to a Composite Wing	Mr Mark Braniff	Spirit AeroSystems, Belfast

KEYNOTE LECTURES

MONDAY 31st JULY

TIME	TITLE	PRESENTER	AFFILIATION	ROOM
10:00 - 10:30	Blast behaviour of fibre-reinforced polymer composite structures	Professor Genevieve Langdon	University of Sheffield	Main Auditorium
10:00 - 10:30	Adaptive multi-fidelity and multiscale modeling of damage in composites	Professor Tong-Earn Tay	National University of Singapore	Studio
10:00 - 10:30	Modelling Impact and Repair of Composites for Sustainability	Professor John P. Dear	Imperial College London	Hall 2A
10:00 - 10:30	Design and Manufacturing of Carbon Fibre Reinforced Thermoplastic Composites	Professor Yingdan Zhu	Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences	Hall 2B

TUESDAY 1st AUGUST

TIME	TITLE	PRESENTER	AFFILIATION	ROOM
9:20 - 9:50	New Susceptors for induction welding of thermoplastic composites	Professor Martine Dubé	École de technologie supérieure	Main Auditorium
9:20 - 9:50	Higher expectations for composite materials in aerospace industry	Dr Sean Black	Spirit AeroSystems Inc.	Studio
9:20 - 9:50	Durability of Marine Composite Propellers	Professor Gangadhara Prusty	University of New South Wales	Hall 2A
9:20 - 9:50	Thermoplastic infusion and in-situ polymerisation of high fibre volume fraction composites	Professor Conchúr Ó Brádaigh	University of Edinburgh	Hall 2B

WEDNESDAY 2nd AUGUST

TIME	TITLE	PRESENTER	AFFILIATION	ROOM
9:20 - 9:50	Performance prediction of notched and unnotched interlock woven composites by independent mesh method and rx-fem	Professor Endel V. larve, Ph.D	University of Texas at Arlington	Main Auditorium
9:20 - 9:50	Circularity and sustainability for the composites community	Dr. Tia Benson Tolle	Boeing	Studio
9:20 - 9:50	Varicomposites: spatially and temporally variable properties for highly efficient and sustainable performance	Professor Paul Weaver	University of Limerick	Hall 2A

THURSDAY 3rd AUGUST

TIME	TITLE	PRESENTER	AFFILIATION	ROOM
9:20 - 9:50	On the way to a cost and mass effective upper stage for orbital class launch vehicles	Dipl.-Ing. Markus Quadt	ArianeGroup	Main Auditorium
9:20 - 9:50	3D and 4D x-ray imaging of composite behaviour	Regius Prof. Philip J Withers	Henry Royce Institute & University of Manchester	Studio

FRIDAY 4th AUGUST

TIME	TITLE	PRESENTER	AFFILIATION	ROOM
9:20 - 9:50	Characterization and Calibration of Progressive Damage Models for Composites: Experimental, Virtual and Machine Learning Methods	Professor Reza Vaziri	University of British Columbia	Main Auditorium
9:20 - 9:50	Novel Hybrid Composite-Metal Joints and their Application to Product Assembly and Disassembly for Circularity	Professor Conor McCarthy	University of Limerick	Hall 2A

SCIENTIFIC PROGRAM

MONDAY 31st JULY

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B
7:30 - 18:30	Registration Desk Open					
8:45 - 9:15	Opening Ceremony					
9:15 - 10:00	SCALA Lecture: Reflection and Reset, <i>Prof. Mike Hinton,</i> High Value Manufacturing Catapult, UK.					
10:00 - 10:30	BLAST BEHAVIOUR OF FIBRE-REINFORCED POLYMER COMPOSITE STRUCTURES, <i>Professor Genevieve Langdon,</i> University of Sheffield, Keynote address	ADAPTIVE MULTI-FIDELITY AND MULTISCALE MODELLING OF DAMAGE IN COMPOSITES, <i>Prof. Tong-Earn Tay,</i> National University of Singapore, Keynote address			MODELLING IMPACT AND REPAIR OF COMPOSITES FOR SUSTAINABILITY, <i>Prof. John P. Dear,</i> Imperial College London, Keynote address	DESIGN AND MANUFACTURING OF CARBON FIBRE REINFORCED THERMOPLASTIC COMPOSITES, <i>Prof. Yingdan Zhu,</i> Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Keynote address
10:30 - 11:15	Monday Morning Tea / Coffee Break, Posters and Exhibition					
11:15 - 11:25	Move to Concurrent Sessions					
11:25 - 12:45	Fatigue, fracture and damage - Session 1	Computational methods - Session 1	Bio-inspired and biocomposites - Session 1	Multifunctional composites - Session 1	Circularity of Composites - Session 1	Multi-physics composites materials & structures design - Session 1
11:25 - 11:45	SIMULATION OF THE PROGRESSIVE FAILURE OF CFRP AT ELEVATED TEMPERATURE Prof. Bodo Fiedler This study presents an approach to incorporate the temperature influence on the mechanical properties into a novel mesoscale continuum-mechanics-damage (CDM) model. The model is then utilised in LVI and Compression-After-Impact (CAI) simulations.	PHASE FIELD MODELLING OF THE HYGROSCOPIC FAILURE BEHAVIOURS OF COMPOSITE MATERIALS Dr. Wei Tan We present a numerical framework to predict the hygroscopic failure behaviours of composite materials by coupling the phase field fracture, moisture diffusion and hygroscopic expansion effect.	IMPACT RESISTANCE OF BIO-INSPIRED CARBON/EPOXY AND HYBRID CARBON-GLASS/EPOXY COMPOSITE T-JOINTS Dr. Amir Bolouri This is a novel bio-inspired design for impact resistant composite T-Joints	METAL/CARBON FIBER HYBRID COMPOSITES WITH POTENTIAL FOR INTRINSIC STRUCTURAL HEALTH MONITORING Dr. Bilal Khatri Development and characterization of metal/carbon-fiber reinforced composites that measurably respond to fatigue with applications in aviation.	EURECOMP: EUROPEAN RECYCLING AND CIRCULARITY IN LARGE COMPOSITE COMPONENTS Dr. Aikaterini-flora Trompeta	PROCESS-INDUCED DISTORTION PREDICTION FOR LAMINATED COMPOSITES Miss. Shuang Yan Process-induced distortion prediction for laminated composites
11:45 - 12:05	THREE-DIMENSIONAL ANALYTICAL MODEL FOR PREDICTING EFFECTIVE STIFFNESS OF COMPOSITE LAMINATES WITH PLY CRACKING Dr. Sota Onodera A three-dimensional effective compliance of composite laminates with ply cracks is analytically formulated based on continuum damage mechanics.	MESOSCOPIC MODELING OF CROSSLINKED THERMOSET RESIN USING DISSIPATIVE PARTICLE DYNAMICS Dr. Yoshiaki Kawagoe Curing simulation using DPD method was performed to investigate mesoscopic structure in thermoset resin	DYNAMIC BEHAVIOR OF UNIDIRECTIONAL AND CROSS-PLY FLAX/EPOXY LAMINATES MADE OF A HYBRID UD-MAT REINFORCEMENT Mr. Samer El Khoury Roupheal Impact and fatigue behavior of unidirectional and cross-ply flax fibers reinforced epoxy laminates made of a hybrid reinforcement	THIN-PLY-COMPOSITE MULTIFUNCTIONAL STRUCTURE Mr. Bruno Giuntoli Thin-ply CFRP multifunctional structures with seamless ink-jet printed PCB	IDENTIFICATION OF CIRCULAR ECOSYSTEMS FOR THE REPURPOSE OF DECOMMISSIONED LARGE-SCALE COMPOSITE STRUCTURES Prof. Robert Böhm	STIFFNESS EQUIVALENT SUBSTITUTION OF AN AIRFOIL PROFILE BY AN AUTOMATED MANUFACTURABLE CF/LM-PAEK TAILORED LAMINATE ARCHITECTURE Mr. Daniel Laesser Investigation of strategies for the automated production of airfoil profiles by pick-and-place tape laying of unidirectional thermoplastic tapes

Meeting Room 1A	Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B
Registration Desk Open					
Opening Ceremony					
Monday Morning Tea / Coffee Break, Posters and Exhibition					
Move to Concurrent Sessions					
Civil engineering & Defence - Session 1	Process modelling - Session 1	Ceramic & metal matrix structures and materials - Session 1	Ductile and pseudo-ductile composites - Session 1	Offshore, Subsea & Emerging Technologies - Session 1	Structural analysis and optimization - Session 1
<p>POWDER EPOXY BASED COMPOSITES FOR STRUCTURAL STRENGTHENING APPLICATIONS Mr. Murat Çelik</p> <p>This study investigates the potential of powder epoxy based composites in structural strengthening applications.</p>	<p>A MACHINE LEARNING BASED TOOL FOR PREDICTING GEOMETRY-INDUCED WRINKLES IN FABRIC PREFORMING Prof. Michael Sutcliffe</p> <p>A convolutional neural network is trained to rapidly predict the fabric wrinkling defects for any given tool geometry.</p>	<p>HYBRID NATURAL-FIBRE COMPOSITE SANDWICH PANEL WITH NANOCOMPOSITE REINFORCEMENT FOR FLATWISE COMPRESSION AND VIBROACOUSTIC APPLICATIONS Dr. Rita Palumbo</p> <p>Design, manufacturing, and quasi-static and dynamic characterization of hybrid biocomposite sandwich panel with nanocomposite reinforcements.</p>	<p>AUTOMATED FIBRE PLACEMENT OF CERAMIC MATRIX COMPOSITES Dr. David King</p> <p>Europe's first automated deposition of a ceramic matrix composite conducted at the National Composites Centre.</p>	<p>METAL-ORGANIC FRAMEWORKS (MOFs) INCORPORATED IN NEW SELF-HEALING SYSTEM; IMPROVING THE SERVICE LIFE OF NON-METALLIC MATERIALS Mr Nik Nor Azrizam Nik Norizam</p> <p>Metal-Organic Frameworks ability to replace rare-earth catalyst in self-healing application for feasibility of scale up for oil and gas application</p>	<p>3D TOPOLOGY OPTIMIZATION FOR COMPOSITE SANDWICH STRUCTURES BY THE COATING APPROACH Dr. Derek Harvey</p> <p>Presentation of a topology optimization approach which considers local material orientations for application to composite sandwich structures.</p>
<p>BICOMPONENT PP FIBERS FOR SUSTAINABLE MINERAL BONDED STRAIN HARDENING COMPOSITES Mrs. Mihaela-monica Popa</p> <p>The influence on the distribution and bridging effect of normal strength and composites made by LC3 binder systems is discussed.</p>	<p>PROCESS MODELING OF COMPOSITES USING A MULTISCALE FRAMEWORK Prof. Greg Odegard</p> <p>Multiscale modeling and experiments have been used to predict process-induced residual stresses and laminate strength in a carbon/epoxy composite</p>	<p>THERMOPLASTIC MONO-MATERIAL SANDWICH STRUCTURES WITH HONEYCOMB CORE Mr. Temuri Latsubaya</p> <p>In order to define the manufacturing process window of the thermoplastic mono-material sandwich panels, numerical and experimental analyses were performed. Thus, a sufficient bonding degree and core stability during the manufacturing could be achieved.</p>	<p>MODELING OF DAMAGE BEHAVIOR OF AN ENVIRONMENTAL BARRIER COATED CERAMIC MATRIX COMPOSITE UNDER THERMAL LOADINGS Dr. Thomas Vandellos</p> <p>Modeling of damage behavior of an environmental barrier coated ceramic matrix composite under thermal loadings and comparison with experimental tests</p>	<p>BRAIDED COMPOSITE PIPES INCORPORATED WITH GRAPHENE NANOPATELETS Dr. Xudan Yao</p> <p>Braided carbon fibres reinforced polymer (CFRP) composite pipes, incorporated with graphene nanoplatelets, were investigated for oil and gas industry applications.</p>	<p>A STUDY ON VIRTUAL TESTING OF COMPOSITE BOLTED JOINTS BY DAMAGE MODELING Mr. Ryosuke Hashizume</p> <p>Damage modeling for bolted joints</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B
12:05 - 12:10						
12:10 - 12:15	TRACKING DEFORMATION CAUSED BY TENSILE FATIGUE IN QUASI-UNIDIRECTIONAL GLASS-FIBRE COMPOSITES Mr. Anuj Prajapati Will present the results from the time-lapse experiment highlighting the strain hotspots and associated effect on the stiffness	RATE AND TEMPERATURE DEPENDENT VISCOELASTIC COHESIVE ZONE MODEL FOR MODE-I DELAMINATION OF COMPOSITES Dr. Ganapathi Ammasai Sengodan A cohesive zone modelling framework that accounts the effect of loading rate and temperature on the delamination behaviour of laminated composites is presented.	INFLUENCE OF WET/DRY AGEING ON MECHANICAL PROPERTIES AND DAMAGE MECHANISMS OF HEMP-REINFORCED ECOCOMPOSITES Mr. Quentin Drouhet Relationship between loss of mechanical properties and damage evolution in eco-composites as a function of the number of wet/dry cycles.	MULTIFUNCTIONAL STRUCTURAL SUPERCAPACITOR BASED ON NITROGEN DOPED GRAPHENE NANOFLEAKS DIRECTLY GROWN ON CARBON FIBRE ELECTRODES Prof. Pagona Papakonstantinou	QUANTIFYING THE DEGRADATION OF GLASS FIBER REINFORCED POLYMERS UNDER WEATHERING CONDITIONS: A MICRO-SCALE MODELLING APPROACH Mr. Michael Kucher Wind turbine blades are exposed to weathering. Due to these conditions, the material's degradation results, which have to be quantified.	COMPOSITE COATINGS WITH EMBEDDED FIBERS AND PARTICLES FOR MULTIPLE IMPACT PROTECTION Dr. Kristine Munk Jespersen Mechanisms to improve erosion resistance of coated laminates by fiber and particle reinforcements for leading edge protection
12:15 - 12:20						
12:20 - 12:25						
12:25 - 12:30	FAILURE MECHANICS OF THICK, CURVED, LAMINATED COMPOSITE STRUCTURES Assoc. Prof. Mark Battley Failure mechanics of thick, curved composite CFRP laminates for sailing yacht hydrofoils are investigated with Acoustic Emission and ultrasound scanning	DERIVATION AND VALIDATION OF A MECHANICALLY CONSISTENT CONTINUUM DAMAGE MODEL FOR BRITTLE COMPOSITE MATERIALS Dr. Jörg Hohe Derivation and Validation of a Mechanically Consistent Continuum Damage Model for Brittle Composite Materials	ELABORATION OF HYBRID BIO-COMPOSITES WITH THERMOPLASTIC MATRIX: MATERIAL FORMULATION AND MODELLING OF THE QUASI-STATIC BEHAVIOUR Mr. Wassim Guerfala Elaboration of hybrid bio-composites with thermoplastic matrix: material formulation and modelling of the quasi-static behaviour for an automotive structural application	COMPOSITE STRUCTURAL BATTERY WITH MODIFIED CARBON FIBER AS STRUCTURAL ANODE Dr. Sha Yin This work introduces a kind of composite structural battery with modified anode and studies its interfacial performance by multiphysics modeling.		ADVANCED MULTIFIELD MODELS FOR WAVE PROPAGATION ANALYSIS IN SMART COMPOSITE PANELS Mr. Jamal NAJD The study of Lamb wave propagation in laminated panels using different higher order multifield 2D finite element models.
12:30 - 12:35	THE FATIGUE DAMAGE EVALUATION OF 3D WOVEN HYBRID GLASS/CARBON FIBRE COMPOSITES Mr. Leping Wu The fatigue damage development analysis of 3D woven hybrid glass/carbon fibre composites using DIC and correlated X-ray computed tomography	MATERIALS INFORMATICS APPROACH TO PREDICTIVE MODELS FOR ELASTIC MODULUS OF POLYPROPYLENE COMPOSITES Dr. Yusuke Araki We constructed a new method to predict elastic properties of polymer composites by designing features from experimental formulation.	TOUGHENING MECHANISMS OF BIO-INSPIRED COMPOSITES Dr. Sha Yin Bio-inspired composite laminates were manufactured to mimic stomatopods and coelacanth fish, which exhibits great toughness.	NANOMATERIAL REINFORCED MULTIFUNCTIONAL ENERGY STORAGE COMPOSITES Mr. Venkatesh Gangipamula Energy storage technology is integrated within composite laminates which offer the combination of both structural load bearing and energy storage capabilities	BLADES2BUILD: RECYCLE, REPURPOSE AND REUSE END-OF-LIFE WIND BLADE COMPOSITES Dr. Ana Teresa Lima This presentation will highlight the results so far produced in the IA project Blades2Build, which will use end-of-life windmill blades in construction materials.	AN ANN MODEL FOR MATRIX SELECTION FOR COIR FIBER REINFORCED POLYMER COMPOSITES Miss. Aditi Mahajan The current ANN model will help the designers and engineers for judicious selection of matrix for coir fiber reinforced composites
12:35 - 12:40	FATIGUE MECHANISM IN GLASS FIBER COMPOSITES Prof. Bent F. Sørensen Using X-ray tomography, microscale fatigue damage was found to occur as a forward-moving damage front of fibre failures.	MODELING OF DAMAGE AND RESIDUAL LOAD-BEARING CAPACITY IN NCF COMPOSITES Dr. Aleksandr Cherniaev Modeling of impact-induced damage and residual load-carrying capacity of NCF composites	IN-SITU STUDY OF THE FRACTURE BEHAVIOUR OF BIOINSPIRED ALUMINA-BASED COMPOSITES WITH DIFFERENT COMPLIANT POLYMER PHASES Miss. Tayyaba Rabnawaz In-situ mechanical microscopy is used to observe and measure the fracture behaviour of bioinspired alumina-based composites with different polymer phases.	FIBRE-ELECTROLYTE INTERFACES IN MULTIFUNCTIONAL COMPOSITES REVEALED WITH FOCUSED ION BEAM Mr. Marcus Johansen Fibre matrix interfaces are crucial for multifunctional structural battery composites. We use Focused Ion Beam to study these interfaces		DESIGN OPTIMIZATION OF METALLIC BOSSES FOR TYPE IV HYDROGEN TANKS PRODUCED BY FILAMENT WINDING Mr. Hangtian Zhou
12:40 - 12:45	ANALYSIS OF MECHANICAL AND THERMAL BEHAVIOR OF HYBRID CARBON/GLASS THIN-PLY LAMINATES Dr. Andrejs Pupurs The study analyzes correlation between mechanical and thermal properties of hybrid carbon/glass thin-ply laminates	A STATE-BASED PERIDYNAMIC MODEL FOR PROGRESSIVE DAMAGE ANALYSIS OF CFRTP-SMC BASED ON GPU PARALLEL SCHEME Mr. Zhiyu Wang A state based peridynamic model for progressive damage analysis of CFRTP-SMC based on GPU parallel scheme	MODELLING THE THREE-POINT BENDING OF NOVEL BIOINSPIRED DENTAL CROWN COMPOSITES Miss. Tayyaba Rabnawaz This research is contributing to determine properties of economical, bioinspired composites that can be used to create new generation dental crown materials.	MULTIPHYSICS MODELLING OF STRUCTURAL BATTERY COMPOSITES, HALF-CELL REPRESENTATION OF A COATED CARBON FIBRE POSITIVE ELECTRODE Mr. Carl Larsson In this study, we establish a coupled electro-chemo-mechanical computational model for the coated carbon fibre positive electrode in a half-cell configuration.		THIN-PLY DESIGN OF CFRP COMPOSITE STRUCTURES WITH X-SHAPED JUNCTION BASED ON FINITE ELEMENT SIMULATION Dr. Jiayin Liu In this paper, a local thin-ply structure is proposed to improve the strength and stability of X-shaped junction CFRP structure
12:45 - 14:00	Lunch, Posters and Exhibition					

Meeting Room 1A	Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B
VARIABLE ANGLE TOW COMPOSITES FOR LIGHTWEIGHT AND SUSTAINABLE BRIDGE DESIGN Dr. Francesco Salvatore Liguori The use of Variable Angle Tow composites in bridges is proposed	MULTISCALE FORMING SIMULATION OF CARBON FIBER REINFORCED THERMOPLASTICS: AN APPLICATION OF SUPERCOMPUTER Prof. Qi Wu A supercomputer is used to virtually validate the multiscale simulation of the forming process of carbon fiber reinforced thermoplastic composite	NOVEL COMPOSITE SANDWICH STRUCTURES WITH INTEGRATED VACUUM INSULATION PANELS Mr. Vakhtang Latsuzbaya Research of the new sandwich structures of the cabin interior, which include highly efficient insulation.	HIGH-TEMPERATURE PERFORMANCE SIC-HFC NANOCOMPOSITE DERIVED FROM METAL-MODIFIED POLYCARBOSILANE Dr. Seong-gun Bae New concept SiC-HfC nanocomposite fiber derived from preceramic polymer	DESIGN, SIMULATION AND PROTOTYPING OF THE MULTI-FUNCTIONAL COMPOSITE STRUCTURE OF AN HYPERLOOP VEHICLE Assoc. Prof. Joël Cugnoni This work presents the design, simulation and prototyping of a fault tolerant composite structure with integrated crack monitoring systems.	TAILORING OF CONTINUOUS CARBON FIBER REINFORCED POLYMER LATTICE STRUCTURES Mr. Naruki Ichihara This paper proposed the optimization framework for lattice structures made of 3D-printed continuous carbon fiber-reinforced polymers.
			FABRICATION AND SUPERIOR PERFORMANCE OF FLATTENED NETWORK STRUCTURED TiC/Ti COMPOSITES Mr. Fengbo Sun The flattened network structured TiC/Ti composites showed superior elastic modulus and high strength		
			IMPROVING HIGH TEMPERATURE PERFORMANCE OF TITANIUM MATRIX COMPOSITES WITH TAILORED MULTI-SCALE ARCHITECTURE Prof. Lujun Huang Tailoring network architecture opens up a new horizon of research and applications of metal matrix composites		
			DEVELOPMENT OF MATERIAL PROCESS FOR HIGH-ENTROPY CERAMIC MATRIX COMPOSITES USING CALPHAD Dr. Yutaro Arai Fabrication and evaluation of high temperature degradation on refractory high entropy ceramic matrix composites		
FIRE RETARDANT AND GASEOUS HAZARDOUS SUBSTANCES EVALUATION OF THERMAL INSULATION MATERIALS FOR COMPOSITE PANELS Dr. Seunghwan Wi This study evaluated the fire performance of 5 types of organic insulation materials and 3 types of composite sandwich panels.	CREATING TRAINING DATA FOR SURROGATE MODELS USING FE DRAPING SIMULATION Ms. Sophia Keller This presentation deals with the efficient creation of training data for AI surrogate models using Finite Element draping process simulations.	SANDWICH STRUCTURES WITH GRADED CORE TOPOLOGIES FOR PIEZOELECTRIC ENERGY HARVESTING Mr. Boyue Chen Study on the effect of graded core topology design on energy harvesting performance		MARKET DRIVEN MATERIALS SELECTION FOR THERMOPLASTIC FLEXIBLE RISER PIPELINES USED IN OFFSHORE AND SUBSEA APPLICATIONS Mr Carlos-Isam Bachour This work assesses a market focused material selection for thermoplastic risers compatible with CCS technology manufactured by Automated Tape Placement.	COMPONENT TESTING OF SANDWICH STRUCTURES WITH MORE REALISTIC BOUNDARY CONDITIONS Mr. Lukas Schwan A procedure for extending component tests and a test setup with more realistic boundary conditions for sandwich structures is presented.
THERMAL PROPERTIES EVALUATION OF PCM AND BIOCHAR APPLIED INTERIOR FINISHING MATERIALS Mr. Young Uk Kim Evaluation of thermal performance of interior finishing materials according to application of Biochar and PCM	LEAST SQUARES APPROACH TO OPTIMIZE ELECTROFUSION WELDING PARAMETERS OF GLASS/PE THERMOPLASTIC COMPOSITE PIPES Mr. Ameen Al Obedan Optimization of electrofusion welding parameters using modelling and experimental data to suit joining thermoplastic composite pipes	IMPACT BEHAVIOUR OF COMPOSITES STRUCTURES FILLED WITH SHEAR THICKENING FLUIDS Mr. Haiqing Liu An innovative hybrid sandwich panel (HSP) was developed for impact mitigation with aluminium/Kevlar fabric facings and aluminium honeycomb core filled with concentrated shear thickening fluids (STFs).			STRUCTURAL OPTIMISATION OF MARINE HAT STRINGER STRUCTURES Mr. Connor Pearson Marine Hat stringer structures under a uniform pressure load have been optimised for minimum mass using a genetic algorithm and experimental validation.
	TRANSIENT THERMAL MODELING OF THERMOPLASTIC COMPOSITE FILAMENT WINDING PROCESS Mr. Kasahun Asfew A transient thermal model is built to solve a thermal problem of the thermoplastic tape winding process.	THE LOW VELOCITY IMPACT RESISTANCE OF THERMOPLASTIC COMPOSITE CORRUGATED SANDWICH PANELS Dr. Xin Pan The main content of this presentation is about the low-velocity impact resistance of fiber reinforced thermoplastic composite sandwich structure.			ENERGY DISSIPATION MECHANISM AND BALLISTIC CHARACTERISTIC OPTIMIZATION IN FOAM SANDWICH PANELS AGAINST SPHERICAL PROJECTILE IMPACT Dr. Jianqiang Deng
	PULTRUSION PROCESS SIMULATION MODELLING OF INJECTION AND IMPREGNATION CHAMBER Mr. Nik Poppe Transient FV simulations in continuous fluid dynamics covering kinetic, rheologic and thermal aspects for virtual optimisation of pultrusion tool design	ON EQUIVALENT ELASTIC PROPERTIES OF MORPHING SANDWICH PANELS WITH CELLULAR CORES AND FLEXIBLE FACESHEETS Mr. Nuhaadh Mohamed Mahid The paper compares the shell stiffness matrix of flexible sandwich panels attained through analytical and FEM-based homogenisation approaches.			MULTI-OBJECTIVE OPTIMIZATION OF FREQUENCY AND DAMPING OF VERTICAL STABILIZER SKIN STRUCTURE PLACED WITH VARIABLE-ANGLE TOWS Dr. Xianzhao Xia

Lunch, Posters and Exhibition

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	
14:00 - 14:45	THE COMPOSITE AIRFRAME: HOW TO KEEP ATTRACTIVENESS? <i>Dr. Chantal Fualdes, Airbus.</i> Plenary Lecture						
14:45 - 15:00	Move to Concurrent Sessions						
15:00 - 16:00	Fatigue, fracture and damage - Session 2	Computational methods - Session 2	Bio-inspired and biocomposites - Session 2	Multifunctional composites - Session 2	Circularity of Composites - Session 2	Multi-physics composites materials & structures design - Session 2	
15:00 - 15:20	PREDICTION OF CRACK INITIATION IN LAMINATES WITH FIBER DISCONTINUITY: A VARIATIONAL APPROACH Dr. M. J. Mohammad Fikry A variational approach for laminates with alternating materials in longitudinal direction is used to predict the crack initiation in aminates with fiber discontinuity	ON PREDICTING TRANS-LAMINAR FRACTURE OF QUASI-ISOTROPIC CARBON/EPOXY LAMINATES USING R-CURVES Dr. Xiaodong Xu The current study presents a new local-global modelling framework for the prediction of trans-laminar fracture in composite structures using R-curves	INVESTIGATION OF THE EFFECT OF STAR-LIKE POLYMERS ON BASALT FIBER BIO-COMPOSITES Miss. Rochele Pinto This work aims to fabricate and characterize a basalt fiber reinforced polymer bio-composite with improved mechanical properties due to presence of novel star-like butyl methacrylate polymer	MULTIFUNCTIONAL FIBERGLASS-REINFORCED COMPOSITES WITH LASER INDUCED GRAPHENE Prof. Henry Sodano Graphene Reinforcements are Studied for Multifunctional Composites with Embedded Sensing	SIZING SOLUTIONS FOR UPGRADING OF CARBON FIBRES WITH NANOMATERIALS SYNTHESISED FROM SOLVOLYSIS WASTES Mr. Dionisis Semitekolos Workshop - Circularity of Composites	FUNCTIONALLY GRADED COMPOSITES FOR AXISYMMETRIC MORPHING STRUCTURES Mr. Hirak Kansara An inverse design framework is proposed to form morphing structures using functionally graded composites with varying modulus profile.	
15:20 - 15:40	DAMAGE IDENTIFICATION IN 4D IMAGES OF A NANO-ENGINEERED COMPOSITE VIA A DEEP-LEARNING TOOL Dr. Mahoor Mehdikhani Dame in XCT tomograms of a nano-engineered composite is detected via a deep-learning segmentation tool.	WINDING PATTERN AND STACKING SEQUENCE EFFECTS OF FILAMENT-WOUND CYLINDERS UNDER AXIAL COMPRESSION Dr. Eduardo Menezes Numerical analyses are performed to evaluate the influence of the winding pattern in cylinders manufactures through Filament Winding.	INFLUENCE OF FLAX FIBERS ON CURING KINETICS OF BIOBASED EPOXY RESINS Mr. Jean-baptiste Jouenne Study of the impact of water presence in natural fibers on curing kinetics of biobased thermosets resins	MULTIFUNCTIONAL CARBON/EPOXY LAMINATES WITH THERMAL ENERGY STORAGE/RELEASE CAPABILITY Prof. Andrea Dorigato Preparation and characterization of carbon/epoxy laminates containing a microencapsulated PCM at different concentrations.	SOLVOLYSIS OF THE END-OF-LIFE COMPOSITE WASTES FOR GLASS AND CARBON FIBER RECOVERY Prof. Sebastian Werle This paper presents results of the solvolysis processing of two samples of composite wastes i.e., carbon fiber (CF), and glass fiber (GC) reinforced composites, as the effective recycling method to recover the continuous fibers from the polymer matrix.	NEWLY DEVELOPED ELASTOMER NANOCOMPOSITE FOR HIGH STRAIN AND HIGH STIFFNESS APPLICATION Dr. Camille Carré Processing and characterisation of a stretchable (in-plane) and stiff (out-of-plane) CNT-reinforced elastomer for step-gapless adaptive aircraft structures	
15:40 - 15:45						CREATING HIGH-VALUE BIOCOMPOSITES USING PERCEPTION DESIGN Mr. Manu Thundathil A Novel Approach For Creating High-Value Biocomposites Using Perception Design	
15:45 - 15:50	EFFECTS OF WET AGEING ON THE DAMAGE PROGRESS IN MULTIDIRECTIONAL GFRP COMPOSITES UNDER FATIGUE LOADING Mr. Dennis Gibhardt Studying changes in damage initiation and growth during fatigue loading of unaged and wet aged GFRP which effect lifetime significantly	A CONTINUUM DAMAGE MECHANICS MODEL FOR SHORT FIBER REINFORCED COMPOSITES Dr. Jörg Hohe definition, implementation and validation of a damage mechanics material model for short fiber composites	NOVEL MANUFACTURING PROCESS FOR NATURAL FIBRE COMPOSITES OUT OF BIOBASED AND BIODEGRADABLE MATERIALS Ms. Melissa Walter By transferring and combining two established processes, it was possible to manufacture biocomposites from flax fibres and agricultural residues.	MECHANICAL AND RF CHARACTERISATION OF SMA CONNECTIONS IN FUNCTIONAL COMPOSITE LAMINATES Dr. Mitch Dunn Development of a methodology for simultaneously characterising the mechanical and RF properties of an SMA connection in functional composite laminates	PATHWAYS FOR RECYCLING OF CARBON AND GLASS FIBRE COMPOSITES Dr. Christian Eitzinger Recycling pathways	4D-PRINTING OF HYBRID COMPOSITES INTEGRATION OF SHAPE MEMORY ALLOY WIRES USING SLA PRINTING TECHNIQUE Mr. Manuel Kunzler	
15:50 - 15:55						DEVELOPMENT OF NON-UNIFORM 3D WOVEN STRUCTURES TO ENABLE CHANGES IN MECHANICAL PROPERTIES FOR MARITIME STRUCTURES Mr. Callum Montgomery Development of non-uniform 3d woven structures to enable changes in mechanical properties for maritime structures	
15:55 - 16:00							

Meeting Room 1A	Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B
Move to Concurrent Sessions					
Civil engineering & Defence - Session 2	Process modelling - Session 2	Ceramic & metal matrix structures and materials - Session 2	Ductile and pseudo-ductile composites - Session 2	Offshore, Subsea & Emerging Technologies - Session 2	Structural analysis and optimization - Session 2
<p>MODELLING AND TESTING OF AN ELECTROFUSION JOINT IN THERMOPLASTIC COMPOSITE PIPES Mr. Maciej Piotr Gierulski</p> <p>This presentation deals with electrofusion welding of glass fibre reinforced polyethylene pipes to help create a fully non-metallic pipeline.</p>	<p>INFLUENCE OF DUAL-SCALE PERMEABILITY IN REACTIVE PA6 FLOW FOR LCM PROCESSES Mr. William Han</p> <p>A study of the effect of dual-scale permeabilities</p>	<p>ANALYSIS OF SANDWICH PANELS UNDER SEVERAL LOAD CASES WITH CONSIDERATION OF CORE COMPRESSION Mr. Hussam Georges</p> <p>Determination of core compression near the load application area and support points in several load cases using higher-order displacement approaches</p>	<p>PSEUDO-DUCTILITY IN LAYER-BY-LAYER HYBRID COMPOSITES THROUGH PRECISE CONTROL OF THE INTERLAYER THICKNESS Dr. Gergely Czél</p> <p>The effect of different thickness electrospun nanofibrous interleaves on the failure process of glass/carbon-epoxy hybrid laminates was studied.</p>	<p>MODELLING AND ASSESSING IMPACT DAMAGE FOR A NEW GENERATION OF ZERO-EMISSIONS MARITIME VESSELS Dr. Scott Millen</p> <p>Mesoscale and global-local modelling approaches to assess impact damage for a new generation of zero-emissions maritime vessels</p>	<p>OPTIMIZATION OF FLOATING VERTICAL AXIS WIND TURBINE STRUCTURES USING RECYCLED CARBON FIBER REINFORCED THERMOPLASTIC Mr. PENG Xue</p> <p>This work build multi-scale modeling for floating vertical axis wind turbines using heuristic algorithm and carry material and structural optimization</p>
<p>WHY ARE COMPOSITE MATERIALS NOT REPLACING METALLIC MATERIALS FOR ARMoured VEHICLE Dr. Mark French</p> <p>The design requirements and the progress made for composite armoured vehicle and the technical challenges that remain</p>	<p>NUMERICAL STUDY ON UNCERTAINTY EFFECTS IN INJECTION MOLDING Dr. Florian Wittemann</p> <p>Influence of different process and material parameters on in-mold pressure in injection molding. Interpolation scheme for fast prediction of pressure.</p>	<p>THERMAL AND STRUCTURAL OPTIMIZATION OF A 3D-PRINTED LUNAR ROVER SANDWICH PANEL Mr. David Lessard</p> <p>Multi-objective optimization (thermal, structural, weight) of a 3D-printed sandwich panel structure for a lunar rover application</p>	<p>NUMERICAL ANALYSIS OF FILLED-HOLE COMPRESSION TESTS WITH DIFFERENT MATERIALS OF INCLUSIONS. Dr. Atsushi Kondo</p> <p>Finite element analyses with consideration of contact between FHC specimens and inclusions were conducted to study on effect of materials of inclusions and clearances.s</p>	<p>VARIABLE STIFFNESS COMPOSITES FOR MORPHING AND DEPLOYABLE APPLICATION Mr. Henry Chun Hei Yu</p> <p>Variable stiffness composites for morphing applications</p>	<p>PERFORMANCE PREDICTION OF THE STRUCTURAL RESPONSE OF A LARGE-SCALE THERMOPLASTIC AM PART: MODELING AND VALIDATION Mr. George Scarlat</p> <p>The paper presents the development and validation of a predictive model for a large-scale additively manufactured structural thermoplastic component.</p>
	<p>MODELLING OF COMPOSITE BRAIDING PROCESSES INCORPORATING LARGE FIBRE DEFORMATIONS AND PROCESS PARAMETER INTERACTIONS Mr. Benjamin Gröger</p> <p>The modelling approach of a braiding process incorporating with large deformation and friction of fibres is explained.</p>		<p>CHARACTERISATION OF DAMAGE EVOLUTION OF TEXTILE CERAMIC MATRIX COMPOSITES BY IN-SITU X-RAY COMPUTED TOMOGRAPHY TEST Prof. Daxu Zhang</p> <p>Damage evolution of plain weave C/SiC composites was investigated by using in-situ X-ray CT tensile test and deep-learning based image segmentation.</p>		
			<p>VARTM EPOXY HYBRID COMPOSITES USING ALUMINIUM, GLASS FIBER AND BASALT FIBER REINFORCEMENTS Dr. Monis Kazmi</p> <p>Vacuum Assisted Resin Transfer Molding method was used to manufacture flat and curved hybrid epoxy composites using basalt fiber, glass fiber and aluminium mesh as reinforcements.</p>	<p>APPLICATION OF GLASS FIBER REINFORCED POLYMERS FOR CLOSED FISH FARMING Mr. Halvor Larsson Aga</p> <p>This study address structural strength of a closed fish farm in glass fiber reinforced polymers by uni-axial tensile tests</p>	
			<p>FEASIBILITY STUDY OF A CFRP BOSS FOR APPLICATION IN LINERLESS COMPOSITE TYPE V TANKS Mr. Andreas Scherer</p> <p>Feasibility study of a CFRP boss for a linerless composite type V pressure vessel for hydrogen and helium application</p>		
			<p>EFFECT OF FILLERS ON THE MECHANICAL PROPERTIES OF DRAWN POLYPROPYLENE FIBERS Mrs. Verena Schusser</p> <p>An investigation on the filler reinforcement of highly drawn polypropylene fibers, resulting in increased fiber mechanics at lower draw ratios</p>		

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	
16:00 - 16:05							
16:00 - 16:30	Monday Afternoon Tea / Coffee Break, Posters and Exhibition						
16:30 - 18:30	Fatigue, fracture and damage - Session 3	Computational methods - Session 3	Bio-inspired and biocomposites - Session 3	Multifunctional composites - Session 3	Circularity of Composites - Session 3	Composites performance enhancement	
16:30 - 16:50	<p>CHARACTERIZATION OF THE DAMAGE BEHAVIOR OF RECYCLED CARBON FIBER WITH X-RAY AND ACOUSTIC EMISSION TECHNIQS Mr. Christian Becker</p> <p>Outcomes of current research on the damage behaviour of rCF Rovings and the influence of missing sizing on mechanical properties.</p>	<p>A POLYGONAL GENERALIZED FINITE ELEMENT FOR UNIDIRECTIONAL COMPOSITE MICROSTRUCTURE SIMULATION Dr. Murilo Sartorato</p> <p>A polygonal generalized finite element formulation for efficient calculation of composite unidirectional composite microstructures with non-uniform distributed fibers</p>	<p>BIOBASED GLASS FIBER SIZINGS FOR DEGRADABLE COMPOSITES IN MEDICAL AND TECHNICAL APPLICATIONS Mr. Rudi Reichenbacher</p> <p>We developed novel biobased glass fiber sizings in combination with PLA and biodegradable glasses for application in degradable composites.</p>	<p>MULTIFUNCTIONAL COMPOSITES WITH EASY REPAIRING AND INTEGRATED DAMAGE SENSING CAPABILITIES Mr. Thomas Thorn</p> <p>A "new" discovery for repeatable easy repairing composites based on an "old" approach, fully compatible with current composite manufacturing and successfully overcome the conflicts between mechanical performance and new functionalities.</p>	<p>PLASMA ENHANCED SOLVOLYSIS OF CARBON FIBER REINFORCED POLYMERS Assoc. Prof. Eleftherios Amanatides</p> <p>Plasma Enhanced Solvolysis of CFRPs</p>	<p>MULTIFUNCTIONAL SHAPE MEMORY ALLOY TUFTED COMPOSITES Dr. Weeliam Khor</p> <p>New multifunctional SMA-tufted composite is proposed enabling higher interlaminar fracture toughness, damage tolerance, self-sensing and material-enabled thermography.</p>	
16:50 - 17:10	<p>PROPER TENSION-TENSION FATIGUE TESTING OF UNIDIRECTIONAL COMPOSITES Mr. Babak Fazlali</p> <p>This work examines the effect of the specimen, end tab designs, and test setup to find a proper fatigue test method.</p>	<p>A VOLUME-AVERAGED APPROACH FOR GLOBAL-LOCAL HOTSPOT ANALYSIS OF COUNTERSUNK BOLTED COMPOSITE JOINTS Mr. Omar Ahmed Imran Azeem</p> <p>Investigation of a volume-averaged approach for global-local hotspot analysis of countersunk bolted composite joints</p>	<p>DEVELOPMENT OF BIO-BASED FLAME RETARDANTS USING RECOVERED BIOPOLYMERS FROM WASTEWATER SLUDGE Dr. Nam Kyeun Kim</p> <p>We have investigated potential of the recovered biopolymer from wastewater sludge as a novel bio-based flame retardant for composites.</p>	<p>DELAMINATION TOUGHENING OF COMPOSITES USING DIFFERENT TYPES OF TUFTING MATERIALS Mr. Manatsawee Limprapuwitwattana</p> <p>A study on the delamination toughening effects caused by tufts using different materials with multifunctional properties induced by SMA wires</p>	<p>SUSTAINABLE STRUCTURAL SANDWICHES AND HOLLOW COMPOSITE PARTS FOR AUTOMOTIVE, BOAT AND AEROSPACE MARKETS Mr. Mehdi Marin</p> <p>The SUSPENS project develops a holistic approach, from bio-sourced and recycled materials to faster and low-energy processes for sustainable composite parts</p>	<p>IN-SITU MONITORING OF DELAMINATION IN CFRP LAMINATES DURING DRILLING Prof. Keiji Ogi</p> <p>The electrical impedance of CFRP laminates was monitored to estimate the critical thrust force during drilling.</p>	
17:10 - 17:15	<p>MULTISCALE APPROACH TO DETERMINE THE MECHANISMS LEADING TO SELF-HEATING OF LAMINATED COMPOSITES Prof. Nicolas Carrere</p> <p>This presentation deals with the multiscale modelling of dissipation under cyclic loading and the link to the fatigue behaviour.</p>					<p>CAPACITIV SENSING OF THE FATIGUE BEHAVIOR IN COMPOSITES BY USING CARBON FIBRE LAYERS Mr. Florian Ritter</p> <p>Monitoring of the fatigue behaviour of composites using the electrical and dielectric properties of the base materials for sensing.</p>	
17:15 - 17:20	<p>INFLUENCE OF THE STRESS RATIO ON THE VERY HIGH CYCLE FATIGUE BEHAVIOUR OF COMPOSITE MATERIALS Mr. Martin Bartelt</p> <p>Presentation about the influence of the stress ratio on the very high cycle fatigue behaviour of composite materials</p>	<p>A DUAL-SCALE THREE-PHASE FLOW-STRESS MODEL FOR PREPREG PROCESSING Mr. Shayan Fahimi</p> <p>This work introduces a multiscale, 3-phase integrated flow-stress model (3PIFS) for simulating the capillary effect and intra-tow gas transport in composite processing.</p>	<p>MECHANICAL BEHAVIOR OF FLAX FIBERS DURING CYCLIC TENSILE TESTS IN A CONTROLLED HUMID ENVIRONMENT. Mr. Erwan HUGUET</p> <p>Study of the mechanical behavior of flax fibers during a cyclic tensile test adding the impact of the relative humidity.</p>	<p>Z-DIRECTION HEAT TRANSFER IN COMPOSITES HYBRIDISED WITH LARGE DIAMETER METALLIC PINS Dr. Geoffrey Neale</p> <p>Investigation of hybridisation using large diameter (2 mm) through-thickness metallic pins in composites to facilitate improved z-direction heat transfer</p>	<p>END-OF- LIFE COMPOSITES IDENTIFICATION BY SPECTROSCOPIC TECHNIQUES Mr. Camilo Prieto</p>	<p>RGO/MXENE HYDROGEL INKS FOR EMBEDDED SENSING IN SMART FRP COMPOSITES Dr. Anchalee Duongthipthewa</p> <p>We presented L-cysteine-reduced graphene oxide/MXene inks for smart FRP composites with high sensitivities, stabilities, and wide workable ranges.</p>	
17:20 - 17:25						<p>BUILDING-BLOCK-TYPE MICROPERFORATED ACOUSTIC METACOMPOSITES FOR BROADBAND SOUND ABSORPTION Mr. Lanhe Xu</p> <p>Building-block-type microperforated acoustic metacomposites for broadband sound absorption</p>	
17:25 - 17:30							

Meeting Room 1A	Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B
			<p>INVERSE EXTRACTION OF COHESIVE THICKNESS DEPENDENT PARAMETERS TO DETERMINATION MIXED-MODE DAMAGE MODEL Mr. Mohammad Arjomandi</p> <p>There are two factor that determine the final strength of joints: the first one is type of adhesive that related to adhesive type and the other one is the thickness increasing effect.</p>		
Monday Afternoon Tea / Coffee Break, Posters and Exhibition					
Civil engineering & Defence - Session 3	Process modelling - Session 3	Ceramic & metal matrix structures and materials - Session 3	Composites General - Session 1	Tsai Award Special Session	Structural analysis and optimization - Session 3
<p>HIGH VELOCITY IMPACT BEHAVIOUR OF ADDITIVELY MANUFACTURED CELLULAR CORE BACKED KEVLAR Mr. Tom Fisher</p> <p>High velocity impact behaviour of additively manufactured cellular core backed Kevlar.</p>	<p>FLOW-INDUCED FIBRE COMPACTION IN A RESIN-INJECTION PULTRUSION PROCESS Dr. Michael Sandberg</p> <p>This paper presents new theoretical formulations and numerical analyses of fibre-deformation induced by resin flow in resin-injection pultrusion processes in resin-injection pultrusion processes</p>	<p>FLEXIBLE DESIGN AND CONTROLLABLE BENDING SURFACE OF COMPOSITE HONEYCOMB Dr. Xingyu Wei</p>	<p>INFLUENCE OF CRYSTALLIZATION CONDITIONS ON THE NANO-/MICRO- BEHAVIOR OF CARBON FIBER-REINFORCED PEEK COMPOSITE Mme. Sophie Vanpée</p>	<p>INVESTIGATION OF IMPACT RESPONSE OF 2D BIAXIAL BRAIDED COMPOSITES WITH HYBRID CONFIGURATION USING MICRO-CT Miss. Emily Bond</p> <p>An initial quantitative and qualitative investigation of hybrid configuration carbon-aramid/ epoxy 2D braided composites impact response through non-destructive micro-CT analysis.</p>	<p>CURVED GRID STIFFENER LAYOUT OPTIMIZATION FOR REDUCING THERMALLY INDUCED OUT-OF-PLANE DEFLECTION OF COMPOSITE STRUCTURES Dr. Dan Wang</p> <p>Curved Grid Stiffener Layout Optimization for Reducing Thermally Induced Out-Of-Plane Deflection of Composite Structures</p>
<p>USING AN EXPERIMENTAL INTEGRATED FRAMEWORK FOR SOFT ARMOR DESIGN Ms. Tanu Pittie</p> <p>This study combines experiments, finite element analysis and machine learning to develop a predictive framework for the analysis and design of soft armor systems.</p>	<p>MODELING OF THERMODYNAMIC BEHAVIOR OF THERMOPLASTIC COMPOSITES DURING PREHEATING IN AN INFRA-RED OVEN Miss. Eva Kobler</p> <p>A simple mathematical model predicting the temperature at the core of a continuous fiber reinforced thermoplastic composite during infrared preheating</p>		<p>EFFECT OF WATER AGEING ON FATIGUE DAMAGE OF RUBBERWOOD/RECYCLED POLYPROPYLENE COMPOSITES Dr. Mohd Nur Azmi Nordin</p> <p>A comprehensive study on the influence of hydrothermal ageing on fatigue damage of rubberwood/polypropylene composites.</p>	<p>A DAMAGE TOLERANT BIO-INSPIRED INTEGRATED COMPOSITE STIFFENER VIA AFP Mr. Adam Whitehouse</p> <p>An AFP manufactured composite stiffened panel, inspired by the branch attachment of a pine tree, achieving significantly improved damage tolerance.</p>	<p>OPTIMIZATION OF STIFFENED VARIABLE ANGLE TOW PANELS CONSIDERING THE POST-BUCKLING BEHAVIOR Mr. Kenji Asakawa</p> <p>Tow steering applied to the stiffened composite panel. Optimization of the geometry and layup path was performed.</p>
<p>PHTHALONITRILE RESIN AS AN INTERESTING BUILDING BLOCK FOR ADVANCED NEUTRONS SHIELDS Dr. Oussama Mehelli</p> <p>Phthalonitrile resin as an interesting building block for advanced neutrons shields</p>	<p>MODELLING OF AUTOCLAVE CURING OF A POROUS POLYMER Mr. Bhishm Dewangan</p> <p>This study proposes and validates a multiscale methodology to estimate the autoclave cure kinetics of a porous thermoset polymer.</p>	<p>EFFECT OF CORE ON ENERGY ABSORPTION OF 3D PRINTED SANDWICH STRUCTURE SUBJECTED TO IMPACT TEST Dr. Behnam Ashrafi</p> <p>I will start with an introduction about sandwich structure and TPMS material and their application. In the following, I'll talk about our developed design and the impact test and their results which were approached.</p> <p>THE INFLUENCE OF IMPACT DAMAGE ON THE DAMPING BEHAVIOR OF CONSTRAINED LAYER DAMPING LAMINATES Mr. Alexander Jackstadt</p> <p>In this work, the influence of low-velocity impact damage on hybrid constrained layer damping laminates is investigated.</p>	<p>STRONG, TOUGH, AND IMPACT-RESISTANT HYDROGEL COMPOSITES Prof. Canhui Yang</p>	<p>NEURAL NETWORK-ASSISTED SENSITIVITY ANALYSIS ON THE CONDUCTIVITY OF MULTIFUNCTIONAL CEMENTITIOUS COMPOSITES Mr. Arman Montazerian</p> <p>Numerical Simulation-assisted deep neural network to investigate the electrical conductivity of smart cement paste composites</p>	<p>DATA-DRIVEN TOPOLOGY OPTIMISATION FOR CRASHWORTHINESS Dr. Siamak Khosroshahi</p> <p>We have developed a data-driven topology optimisation framework to design 3D spinodal structures for maximum energy dissipation while being crushed.</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	
17:30 - 17:50		<p>DESCRIPTION OF FIBRE DISTRIBUTION WITHIN DISCONTINUOUS-FIBRE REINFORCED THERMOPLASTIC COMPOSITES USING 3D FIBRE CELLS Mr. Yuheng Zhou</p> <p>Description of Fibre Distribution Within Discontinuous-Fibre Reinforced Thermoplastic Composites Using 3D Fibre Cells</p>	<p>EVALUATION OF POST-CONSUMER RECYCLED POLYPROPYLENE-BASED COMPOSITE MATERIALS REINFORCED WITH RICE HUSK FIBERS Prof. Alicia Porras</p> <p>Mechanical, physical, and thermal effects of additive incorporation and fiber treatment in post-consumer recycled polypropylene-based composites reinforced-infill with rice husk fibers</p>	<p>IMPACT OF PROCESSING PARAMETERS ON CYCLING AND TENSILE PROPERTIES OF CARBON FIBRE FOR STRUCTURAL BATTERIES Mr. Ruben Tavano</p> <p>A study of processing parameters on cycling and tensile properties of carbon fibre for structural batteries</p>	<p>DECOMMISSIONING INVENTORY FOR WIND TURBINE BLADES INSTALLED UNTIL 2022 IN EUROPE Dr. Francisco Lahuerta</p>		
17:50 - 17:55		<p>PREDICTION ALGORITHM FOR TRANSVERSE PERMEABILITY OF UNIDIRECTIONAL FIBER REINFORCED COMPOSITE USING FLOW NETWORK Mr. Sangyoon Bae</p> <p>Proposal of a methodology and algorithm that can dramatically reduce the computational cost required to predict the permeability.</p>		<p>INTEGRATED MULTIFUNCTIONAL GLASS FIBER REINFORCED COMPOSITES: TOWARD SMART AND SUSTAINABLE LIGHTWEIGHT STRUCTURES Palak Patel</p> <p>Multifunctionalities of composite laminates, which have been demonstrated individually up to date, are integrated.</p>	<p>LIFE CYCLE ASSESSMENT OF COMPOSITES ADDITIVE MANUFACTURING USING RECYCLED MATERIALS Dr. Konstantina-Roxani Chatzipanagiotou</p> <p>LCA of composites additive manufacturing using recycled carbon fibers.</p>		
17:55 - 18:00		<p>CREATING ARTIFICIAL MICROSTRUCTURE OF THE CERAMIC FOAM USING STATISTICAL FUNCTIONS Prof. Romana Piat</p> <p>A numerical algorithm to create artificial microstructures of ceramic foam material through use of statistical correlation functions will be presented.</p>		<p>MAGNETIC-CONDUCTIVE NANOCOMPOSITES FOR REVERSIBLE BONDING BY INDUCTION HEATING Prof. Chun-Hui Wang</p> <p>On-demand reversible bonding has been developed by hybridizing magnetic and conductive nanofillers with enhanced induction heating by electromagnetic field.</p>			
18:00 - 18:10							
18.10 - 18.15						<p>OCCUPATIONAL SAFETY ASSESSMENT IN FIBER-BASED ADDITIVE MANUFACTURING USING RECYCLED MATERIALS Ms. Ioanna Gkoni</p> <p>Occupational safety in additive manufacturing technologies via exposure assessment campaigns and computational fluid dynamics simulations</p>	
18:15 - 18:30							
18:30 - 18:35							
18:45 - 21:00	Welcome Reception						

Meeting Room 1A	Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B
	<p>DECOUPLED ELECTROMAGNETIC SIMULATION OF THE INDUCTION WELDING PROCESS OF CFRTP COMPOSITES Mr. Thomas Hoffmann Introduction to a new, fast approach for the simulation of the continuous induction welding process of CFRTP organo sheets.</p>		<p>MODELLING AND SIMULATION OF REINFORCED TAPES BEHAVIOUR FOR FORMING PROCESSES Mr. Muhammad Shahrukh Saeed Modelling and simulation of reinforced tapes behaviour fro forming processes.</p>	<p>SIMULTANEOUS MONITORING ON FORMING PRESSURE AND RESIDUAL STRAIN OF CFRP USING PSFBG Mr. Changhao Chen Simultaneous monitoring on forming pressure and residual strain of CFRP using PSFBG</p>	<p>MODELLING OF COMPOSITE TANKS PRODUCED BY FILAMENT WINDING Dr. Alex Pritchard</p>
			<p>DAMAGE ASSESSMENT OF HYBRID JOINT USING 3D-DIC AND AE TECHNIQUE IN CFRP LAMINATES Mrs Isha Paliwal</p>	<p>THE EFFECTS OF OVER-EXTRUSION ON THE IN-SITU CONSOLIDATION OF ADDITIVELY MANUFACTURED COMPOSITES Mr. Nicholas Elderfield An investigation into how fiber network organization is affected by the material extrusion process, and how this influences consolidation quality.</p>	
			<p>ELECTRO-MECHANICAL PERFORMANCE AND SIMULATION OF CYLINDRICAL COMPOSITE STRUCTURAL BATTERIES WITH MULTIFUNCTIONAL SOLID-STATE ELECTROLYTES Prof. Yu Fu</p>	<p>RESIDUAL STRESSES DURING LIQUID MOULDING OF COMPOSITES USING HIGHLY REACTIVE THERMOSETS Mr. Leonardo Barcenas Residual stresses during compression resin transfer moulding of composites using highly reactive thermosets with experimental validation</p>	
			<p>LIGHTNING STRIKE PROTECTION OF AIRCRAFT THROUGH INNOVATIVE COMPOSITE JOINTS Dr. Aldyandra Hami Seno</p>		
Welcome Reception					

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
08:35 - 09:20	DESIGN OF COMPOSITE MATERIALS AND STRUCTURES ACROSS THE SCALES: PHYSICAL AND DATA-DRIVEN MODELS <i>Prof. Pedro Camanho</i> University of Porto, Portugal, Plenary Lecture						
09:20 - 09:50	NEW SUSCEPTORS FOR INDUCTION WELDING OF THERMOPLASTIC COMPOSITES <i>Prof. Martine Dubé,</i> École de technologie supérieure, Montréal, Canada, Keynote address	HIGHER EXPECTATIONS FOR COMPOSITE MATERIALS IN AEROSPACE INDUSTRY <i>Dr Sean Black,</i> Senior Vice President, Engineering and Technology, Spirit AeroSystems Inc., Keynote address			DURABILITY OF MARINE COMPOSITE PROPELLERS <i>Professor Gangadhara Prusty,</i> University of New South Wales, Sydney, Keynote address	THERMOPLASTIC INFUSION AND IN-SITU POLYMERISATION OF HIGH FIBRE VOLUME FRACTION COMPOSITES, <i>Prof. Conchúr O Brádaigh,</i> The University of Edinburgh Keynote address	
09:50 - 10:00	Move to Concurrent Sessions						
10:00 - 11:00	Fatigue, fracture and damage - Session 4	Continuous & discontinuous fiber-reinforced polymers - Session 1	Bio-inspired and biocomposites - Session 4	Multifunctional composites - Session 4	Understanding & Improving Longitudinal Compressive Strength - Session 1	Computational methods - Session 4	Multiscale modelling - Session 1
10:00 - 10:20	CRACK SHIELDING MECHANISMS OF INTERLAYERED EPOXY MATERIALS UNDER QUASI-STATIC AND FATIGUE LOADING Mr. Dharun Vadugappatty Srinivasan Crack arresting behaviour of PEI and PVDF thermoplastic interlayered epoxy materials under Mode-I fracture and fatigue loading	THERMOPLASTIC INJECTION OVERMOULDING USING DISCRETE REINFORCING ELEMENTS Dr. Andrew Parsons Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Mechanical and structural assessment of thermoplastic injection overmoulded nylon composites parts reinforced with discrete continuous fibre elements	DEVELOPMENT OF FLAME RETARDANT GREEN COMPOSITES BY NOVEL HYBRID FLAME RETARDANT APPROACH Prof. Prabhakar M.N. Flame retardancy of the Natural Fiber composites for Sub-structural components for high temperature engineering applications	RECYCLABLE STRUCTURAL SUPERCAPACITOR COMPOSITE WITH POLYMER-IONIC LIQUID ELECTROLYTE Mrs. Hanie Kazari This study demonstrates the application of structural supercapacitors which are structural components that are electrochemically active and can store energy.	AN EXPECTED THIN-PLY EFFECT ON LONGITUDINAL COMPRESSIVE STRENGTH OF CFRP Prof. Leif Asp The presentation is discussing the idea to increase compressive strength of laminated composites by reducing lamina thickness.	FIBER ORIENTATION TENSOR APPROXIMATIONS BASED ON AN IMPLICITLY DEFINED CLOSURE APPROACH Mr. Tobias Karl The presentation addresses an implicit closure approach that allows for a computationally cheap and accurate estimation of anisotropic material properties.	UNIVERSAL FAILURE CRITERIA FOR FIBROUS COMPOSITES BASED ON MULTISCALE APPROACH Prof. Young Kwon New universal failure criteria in associate with multiscale modeling are presented.
10:20 - 10:40	UTILIZING MECHANOLUMINESCENT MATERIALS FOR IMPROVING THE MODE I FRACTURE TEST Mr. Nassos Spetsieris Investigating the use of mechanoluminescent materials in the form of stress-sensing coatings to improve the mode I fracture test.	CONTINUOUS SIMULATION OF A CONTINUOUS-DISCONTINUOUS FIBER REINFORCED THERMOPLASTIC (CODICOFRT) COMPRESSION MOLDING PROCESS Mr. Louis Schreyer Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): This work presents a virtual process chain for D-LFT with co-molded continuous fiber reinforced thermoplastic (CoFRTP) tapes. The digital twin features a process simulation step, a structural simulation step and methods to transfer relevant process results.	BIOINSPIRED LAMINATED COMPOSITE CERAMIC STRUCTURES Dr. Behnam Ashrafi Exploring the dynamic toughening mechanisms of bioinspired ceramics	APPLICATION OF STRUCTURAL ENERGY STORAGE DEVICES IN AERIAL MONITORING SYSTEMS: A CONCEPTUAL DESIGN STUDY Mr. Davood Peyrow Hedayati Integration of structural energy storage devices into commercial aerial vehicles with an ambitious aim to reduce weight and improve functionality	THE ROLE OF CONSTITUENTS ON THE COMPRESSIVE STRENGTH OF COMPOSITES Dr. Soraia Pimenta Workshop - We use unit-cell FE simulations to investigate the effect of parameters often neglected by analytical models: the shear non-linearity and plasticity properties of the matrix, failure of the interface, and the transverse properties of the fibres.	CARBONIZATION UNDER CONFINEMENT: PREDICTING CHARRING BEHAVIOR OF CARBON COMPOSITE RESINS Dr. Jacob R. Gissinger The pyrolysis and carbonization processes of six different high-temperature resins under confinement are modeled using reactive molecular dynamics.	DIRECT FE2 - CONCURRENT MULTISCALE MODELLING WITH COMMERCIAL FINITE ELEMENT CODES Prof. Vincent Tan Presentation will show how multiscale FE simulations can be performed on commercial codes as a single FE analysis
10:40 - 11:00		EFFECT OF HYBRIDIZATION ON THE MECHANICAL PROPERTIES OF CONTINUOUS-DISCONTINUOUS LONG FIBER REINFORCED THERMOPLASTICS Mr. Benedikt Scheuring Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Effect of hybridization on the mechanical properties of continuous-discontinuous long fiber reinforced thermoplastics		COMPOSITE ACTUATORS MADE OF SHAPE MEMORY ALLOY WIRES AND MULTI-MATRIX FIBER REINFORCED PLASTICS Mr. Sascha Bruk Integration of SMA wire into multi-matrix composites to create actuator structures that deform locally when exposed to electrical current.	CONTINUUM DAMAGE OF LAMINATED COMPOSITES UNDER DYNAMIC LONGITUDINAL COMPRESSION Prof. Hao Cui Workshop on "Improving longitudinal compressive strength"	PROGRESSIVE DAMAGE ANALYSIS OF 3D WOVEN COMPOSITES BASED ON DECOUPLED MULTI-SCALE METHOD Mr. Chihaya Hoshikawa Numerical method simulating damage propagation process for textile composites based on decoupled multi-scale theory has been proposed.	

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic

Move to Concurrent Sessions

Nanocomposites - Session 1	Liquid composites moulding - Session 1	Advanced manufacturing and automation - Session 1	Mechanics of composites - Session 1	Structural analysis and optimization - Session 4	Composite and Hybrid Joints - Session 1	Polymer matrix composites - Session 1
<p>MICROWAVE ABSORBING PROPERTIES OF HEAT REDUCED GRAPHENE OXIDE/ FE3O4/EPOXY HYBRID COMPOSITES Prof. Hsien-Kuang Liu Combination of HRGO and Fe3O4 in a composite achieves a good matching effect that leads to better microwave absorbing properties.</p>	<p>LACTIDE IN IN SITU POLYMERISATION (ISP) DURING MONOMER INFUSION UNDER FLEXIBLE TOOLING (MIFT) Prof. John Summerscales This paper considers the difficulty of Lactide In Situ Polymerisation during Monomer Infusion under Flexible Tooling</p>	<p>STRETCH BROKEN CARBON FIBER [SBCF] FOR PRIMARY COMPOSITE STRUCTURES Prof. Douglas Cairns Stretch Broken Carbon Fibers (SBCF) offer high formability for complex shapes with no loss in mechanical properties.</p>	<p>DATA-DRIVEN FAILURE PREDICTION OF COMPOSITE MATERIALS Ms. Allyson Fontes Machine Learning tools are exploited to improve the accuracy of failure strength prediction of fiber-reinforced polymer composite materials.</p>	<p>CAPTURING THE OFF-AXIS BEHAVIOR OF THIN-PLY LAMINATES Ms. Anatoli Mitrou A discussion on ways to efficiently model fracture of thin-ply laminates at the macroscale level focusing on off-axis loading</p>	<p>DAMAGE TOLERANCE AND DURABILITY OF NOVEL INTERLOCKED HYBRID METAL-COMPOSITE JOINTS Mr. Karthik Ramaswamy This presentation discusses damage tolerance and environment durability of mechanically-interlocked and adhesively-bonded hybrid metal-composite joints.</p>	<p>CURRENT ISSUES IN FRACTURE AND FATIGUE FRACTURE TESTING OF FIBER-REINFORCED POLYMER COMPOSITES: AN OVERVIEW Dr. Andreas J. Brunner Open issues in quasistatic and fatigue fracture of FRP composites will profit from the use of digital technologies</p>
<p>ANISOTROPIC COMPOSITE AEROGELS FOR SOLAR VAPOR GENERATION Dr. Xi Shen This work reports the development of anisotropic MXene/PVA aerogels for solar-powered vapor generation.</p>	<p>TRANSVERSE LIQUID COMPOSITE MOULDING: DEVELOPMENT AND COMPARISON OF PROCESS MODELS Miss. Jeejeun Lee Simulation of transverse LCM manufacturing processes using a coupled transient model with comparison to five commonly used simplified models.</p>	<p>IN-MOULD FLOW AND FIBRE ORIENTATION ANALYSIS OF CARBON FIBRE SMC COMPOSITES Mr. Biruk Fikre Nega Experimental in-mould flow and fibre orientation analysis of carbon fibre SMC composites</p>	<p>VARIATIONAL ANALYSIS OF LAMINATES WITH OFF-AXIS MATRIX CRACKS AND DELAMINATIONS Dr. Vladimir Vinogradov An analytical model for prediction of the effective thermoelastic properties of laminates with matrix cracks and delaminations will be presented.</p>	<p>STRUCTURAL OPTIMIZATION TO DERIVE FEASIBLE AND MANUFACTURABLE TAILORED FIBER PLACEMENT (TFP) DESIGNS Mr. Vinay Nagaraj This work focuses on variable stiffness optimization of manufacturable Tailored Fiber Placement (TFP) preforms to be deployed as structural reinforcements.</p>	<p>DEVELOPMENT AND EXPERIMENTAL TESTING OF COMPOSITE/METAL JOINTS WITH TEXTILE MESOSTRUCTURE Prof. Olga Kononova The study investigates mechanical performance of novel composite/metal joints with textile mesostructure</p>	<p>SUSTAINABLE MULTIFUNCTIONAL COMPOSITES: FROM ENERGY EFFICIENT MANUFACTURING TO SMART APPLICATIONS Dr. Han Zhang An extremely energy efficient composite manufacturing method has been developed, with only 1% energy consumption compared to traditional oven curing.</p>
<p>PROCESSING, MORPHOLOGY, AND MECHANICAL PROPERTIES OF HIGH VOLUME FRACTION ALIGNED CARBON NANOTUBE/ AEROSPACE-GRADE EPOXY NANOCOMPOSITES Dr. Ashley Kaiser Process-structure-property study of dense aligned carbon nanotubes/aerospace-grade epoxy nanocomposites presents nanotube confinement effects on epoxy infiltration, morphology, and thermal/mechanical properties.</p>	<p>EFFECT OF VISCOSITY DEVELOPMENT IN THE INFUSION PROCESS OF COMPOSITES Dr. Mohammad Tahir Effect of viscosity changes in the infusion process of fibre reinforced composite material will be presented.</p>	<p>NOVEL PROCESS FOR THE WET FILAMENT WINDING Mr. Benedikt Bergmann A new material and process combination for cost-efficient, clean and fast wet winding is introduced.</p>	<p>EFFECT OF INTERFACIAL PROPERTIES ON LOCAL STRESS CONCENTRATION FACTORS IN UNIDIRECTIONAL FIBRE-REINFORCED COMPOSITES: NUMERICAL ANALYSIS Mr. Camilo Rojas Numerical study into the change of the stress concentration factor and local stress concentration factor for multiple interfacial properties</p>	<p>RANDOM VIBRATION FATIGUE ANALYSIS OF A MULTI-MATERIAL BATTERY PACK STRUCTURE Mr. Hye-gyu Kim The fatigue life was evaluated for a multi-material battery pack structure which consists of composite and metal under random vibrations.</p>	<p>A SEMI-ANALYTICAL METHOD FOR MEASURING THE STRAIN ENERGY RELEASE RATES OF ELLIPTICAL CRACKS Mr. Mohammad Burhan A new test method for the interface characterization of hybrid materials</p>	<p>FRACTURE PROPERTIES AND TOUGHENING MECHANISMS OF CTBN RUBBER MODIFIED EPOXY SYNTACTIC FOAMS Dr. Sammy He The epoxy matrix in densely packed syntactic foams was modified using CTBN rubber in an attempt to increase fracture toughness.</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
11:00 - 11:30	Tuesday Morning Tea / Coffee Break, Posters and Exhibition						
11:30 - 13:10	Fatigue, fracture and damage - Session 5	Continuous & discontinuous fiber-reinforced polymers - Session 2	Bio-inspired and biocomposites - Session 5	Multifunctional composites - Session 5	Understanding & Improving Longitudinal Compressive Strength - Session 2	Computational methods - Session 5	Multiscale modelling - Session 2
11:30 - 11:50	<p>COMPRESSIVE FATIGUE OF CARBON FIBERS/EPOXY LAMINATE: AN APPROACH COMBINING RESIDUAL STRENGTH AND SELF-HEATING</p> <p>Mr. Otávio Zimmermann de Almeida</p> <p>A modified residual strength model is identified with help of self-heating data. This model is compared to a S-N curve</p>	<p>TAILORED FIBER PLACEMENT ON NONWOVENS MADE OF RECYCLED CARBON FIBERS</p> <p>Dr. Kai Uhlig</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): The presented work addresses a technology to produce CoDiCoFRP with a substantial content of recycled carbon fibers</p>	<p>LARGE-SCALE NON-PLANAR MULTINOZZLE ADDITIVE MANUFACTURING OF THERMOSETTING MATERIALS</p> <p>Mr. Jean-Francois Chauvette</p> <p>We developed a non-planar additive manufacturing method for 3D printing thermosetting materials using a multinozzle printhead and a 6-axis robot</p>	<p>VERTICALLY ALIGNED CARBON NANOTUBES (VACNT'S) ENABLE MULTIFUNCTIONAL COMPOSITE STRUCTURES</p> <p>Dr. Kevin Retz</p> <p>NAWA Technologies has developed the process to fabricate and design with Vertically Aligned Carbon Nanotubes to create multifunctional composite structures</p>	<p>ACCURATE COMPRESSION STRENGTH PREDICTIONS OF COMPOSITES FOR WIND TURBINE BLADES</p> <p>Assoc. Prof. Lars Pilgaard</p> <p>Workshop on realistic fiber orientation mapping and non-linear finite element modelling for compression strength predictions of unidirectional pultruded carbon fiber profiles.</p>	<p>PHASE-FIELD BASED FRACTURE MODELING AT MICROSCALE: A CASE STUDY ON PEEK REINFORCED COMPOSITES.</p> <p>Mr. Simone Sangaletti</p> <p>Micromechanical analysis of PEEK composites by means of phase-field fracture modeling</p>	<p>MULTI-SCALE PROGRESSIVE DAMAGE MODELLING OF COMPOSITE STRUCTURES USING PARAMETRIC FAILURE MANIFOLDS</p> <p>Dr. Bassam El Said</p> <p>Novel multiscale modelling framework using precomputed parametric manifolds to predict damage initiation and progression in composites on the structural scale</p>
11:50 - 12:10	<p>INTERFACIAL TOUGHENING ENHANCEMENT OF HYBRID METAL-COMPOSITE JOINTS USING 3D PRINTED PINS</p> <p>Miss. Tiana Bagnato</p> <p>Understanding the interfacial fatigue performance of 3D printed hybrid titanium micro pinned joints and their identified toughening mechanisms</p>	<p>PACKING SIMULATION APPLIED TO THERMOPLASTIC COMPOSITE WASTES.</p> <p>Mr. Awen Bruneau</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Packing simulation applied to thermoplastic composite wastes.</p>	<p>DEVELOPMENT OF A NOVEL ABRADABLE COMPOSITE FOR THE 3D PRINTING OF MICRO-SCAFFOLDS</p> <p>Mr. David Brzeski</p> <p>Development of a novel abrasible composite for the 3d printing of micro-scaffolds</p>	<p>ON THE FEASIBILITY OF THERMOPLASTIC MATERIALS FOR MULTIFUNCTIONAL ENERGY STORAGE SOLUTIONS</p> <p>Dr. Alexander Beutl</p> <p>Thermoplastic materials are investigated as component for electrolyte systems eligible for multi-functional energy storage solutions</p>	<p>COMPRESSIVE FAILURE OF BORON-CARBON FIBRE HYBRID COMPOSITES: A DETAILED EXPERIMENTAL STUDY</p> <p>Dr. Tomas J Katafiasz</p> <p>Workshop - The presentation highlights how the compressive performance of CFRP can be improved through hybridisation with boron fibres.</p>	<p>A SEMI-ANALYTICAL CONTINUUM DAMAGE MECHANICS MODEL FOR VARIABLE ANGLE TOW COMPOSITE LAMINATES.</p> <p>Mr. Dario Campagna</p> <p>A semi-analytical and computational continuum damage mechanics model for non-linear analysis of variable angle tow laminates.</p>	<p>A MULTI-SCALE MODELLING FRAMEWORK FOR SHELL ELEMENTS: APPLICATIONS TO THE NONLINEAR ANALYSES OF COMPOSITE STRUCTURES</p> <p>Dr. Aewis K.W. Hii</p> <p>A multiscale nonlinear FE2 framework that uses shell elements at the macroscale, and high-fidelity solid elements at the mesoscale.</p>
12:10 - 12:30	<p>DETECTING DEBONDED REGIONS THROUGH THE FACE SHEETS OF SANDWICH STRUCTURES USING MIRROR ASSISTED IMAGING TECHNIQUES</p> <p>Ms. Hiu Ling Leung</p> <p>Detecting debonded regions and characterising internal fracture behaviour through the face sheets of sandwich structures using mirror-assisted imaging techniques</p>	<p>STUDY ON MECHANICAL CHARACTERISTICS OF GLASS FIBER REINFORCED POLYCARBONATE LFT FOR CODICO STRUCTURES</p> <p>Mr. Christoph Schelleis</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Study on Mechanical Characteristics of Glass Fiber Reinforced Polycarbonate LFT for CoDiCo Structures</p>	<p>INDUCED ANISOTROPY IN POLYMER NANOCOMPOSITES BY FUSED FILAMENT FABRICATION</p> <p>Dr. Noa Lachman</p> <p>nted here is an insight and possible applications into the inherent anisotropy of the Fused Filament Fabrication additive manufacturing process.</p>	<p>EFFECTS OF CARBON-FIBRE & COPPER Z-PINS ON THE FAULT CURRENT RESPONSE OF COMPOSITE LAMINATES</p> <p>Ms. Mudan Chen</p> <p>Effects of Carbon-fibre & Copper z-pins on the fault current response of composite laminates</p>	<p>STRAIN RATE DEPENDENCY OF COMPRESSIVE RESPONSE OF HYBRID COMPOSITES</p> <p>Mr. James Pheysey</p> <p>Investigation of the strain rate and temperature dependence of a short fibre PEEK/CF composite and a hybrid PEEK/CF composite combining UD and short fibres with strain rates ranging from 0.01 to 1350/s and temperature ranging from -50 to +85°C.</p>	<p>INFLUENCE OF PARTICLE SHAPE AND CLUSTER FORMATION ON ELASTIC PROPERTIES OF PARTICLE REINFORCED COMPOSITES</p> <p>Mr. Pascal Alexander Happ</p> <p>Numerical evaluation of particle shapes and particle clusters observed in a scanning electron analysis considering particle reinforced composite materials.</p>	<p>EFFICIENT NONLINEAR MULTISCALE SPECTRAL GFEM APPLIED TO COMPOSITE AEROSPACE STRUCTURES</p> <p>Dr. Jean Bénézech</p> <p>An efficient nonlinear geometric framework coupled with MS-GFEM to assess the large displacement behaviour of large-scale composite parts is proposed.</p>
12:30 - 12:50	<p>TWO-DIMENSIONAL MODE-II DELAMINATION GROWTH IN COMPOSITE LAMINATES</p> <p>Mr. Congzhe Wang</p> <p>Experimental investigation of two-dimensional Mode-II delamination growth in composite laminates</p>	<p>INTERPHASE PERFORMANCE DEPENDING ON THE FIBER SIZING</p> <p>Dr. Christina Scheffler</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Study to evaluate how the fiber-matrix-interaction is affected if chemically compatible and non-compatible sizings are applied.</p>	<p>MULTIMATERIAL POLYMER BASED MICROCOMPOSITES FOR DENSE METAL STRUCTURES BY ADDITIVE MANUFACTURING</p> <p>Prof. Gianluca Cicala</p> <p>The presentation will focus on the comparison of metal FFF vs traditional metal AM to show the potentials of polymer microcomposites</p>	<p>COUPLED ELECTRICAL POTENTIAL AND I N-PLANE LOAD RESPONSE IN STRUCTURAL BATTERIES</p> <p>Dr. Johanna Xu</p> <p>In this study, a method for in-tandem characterization of structural batteries under combined electrochemical and mechanical loads is presented.</p>	<p>MEASURING COMPRESSIVE BEHAVIOR OF COMPOSITES BY FLEXURAL TESTS</p> <p>Prof. Michael Wisnom</p> <p>Workshop - Understanding and improving longitudinal compressive strength: Sandwich beams with deep cores give high and reliable compressive failure strains</p>	<p>POSTBUCKLING ANALYSIS OF VARIABLE ANGLE TOW SHELL STRUCTURES USING A HYBRID-TREFFTZ FINITE ELEMENT</p> <p>Dr. Giovanni Zucco</p> <p>This work presents a novel finite element for the postbuckling analysis of variable angle tow shell structures.</p>	<p>TOWARD A PERMEABILITY PREDICTION TOOL FROM MULTISCALE MODELLING OF TRANSVERSE CRACKS ACCUMULATION IN LAMINATES</p> <p>Mr. Jean Vereecke</p> <p>Multiscale modelling method of transverse cracks accumulation in laminates for permeability prediction tool</p>

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic
Tuesday Morning Tea / Coffee Break, Posters and Exhibition						
Nanocomposites - Session 2	Liquid composites moulding - Session 2	Advanced manufacturing and automation - Session 2	Mechanics of composites - Session 2	Structural analysis and optimization - Session 5	Composite and Hybrid Joints - Session 2	Polymer matrix composites - Session 2
<p>CHARACTERIZATION OF POLYCARBONATE 3D PRINTING FILAMENTS INFUSED WITH CARBON FROM COCONUT SHELL POWDER</p> <p>Prof. Vijaya Rangari</p> <p>Carbon nanoparticles were synthesized from waste coconut shell powder and used as a filler in PC matrix to enhance the mechanical and thermal properties of the extruded 3D printing filaments.</p>	<p>CAPILLARY PRESSURE ESTIMATION FOR DIFFERENT FIBROUS REINFORCEMENT/LIQUID COUPLES; APPLICATION TO LIQUID COMPOSITE MOLDING</p> <p>Dr. Monica Francesca Pucci</p> <p>An overview of studies carried out on capillary effects during LCM processes and on how to consider them is presented.</p>	<p>SUPERVISED LEARNING FOR ROBOTIC DRAPING TASKS IN COMPOSITE PREFORMING</p> <p>Moritz Lennartz</p> <p>We present an approach to flexibly automate composite production using Cobots in preforming tasks - including robot tools and learning algorithms.</p>	<p>MICROMECHANICAL JUSTIFICATION OF THE INTERACTIVE TERM IN THE TSAI-WU FAILURE CRITERION</p> <p>Dr. Wenxuan Qi</p> <p>Micromechanical finite element analysis of unidirectional fiber reinforced composites was carried out to justify the interactive term in Tsai-Wu criterion</p>	<p>TOPOLOGICAL OPTIMISATION OF LARGE, ADDITIVELY MANUFACTURED COMPOSITE STRUCTURES WITH A GRADED LATTICE CORE</p> <p>Mr. Alex Moss</p> <p>This research aims to provide a new and improved paradigm for the design and manufacture of large composite structures</p>	<p>EFFECTS OF CNT ADDED WOVEN CF HEATING ELEMENT ON RESISTANCE WELDING BEHAVIOR OF CF/PPS LAMINATES</p> <p>Assoc. Prof. Daiki Tanabe</p> <p>This study aims to reveal that the effects of CNT added resistance heating element on resistance welding behavior of CF/PPS.</p>	<p>INNOVATIVE METHOD TO PROTECT PIPELINES MADE OF COMPOSITES WHEN EXCAVATING TO BUILD A CROSSING PIPELINE</p> <p>Dr. Mahmoud Dweib</p> <p>A method to protect existing composite pipe when excavating to build a new crossing pipeline</p>
<p>THERMOELECTRIC MICRO- / NANO-CEMENTITIOUS COMPOSITES FOR POTENTIAL THERMAL ENERGY HARVESTING,</p> <p>Miss. Ioanna Vareli</p> <p>In this study, three types of nano- and micro-carbon materials are introduced into cementitious matrix resulting in a new class of thermoelectric material.</p>	<p>IN SITU STRAIN SENSING DURING THE MANUFACTURE OF FIBRE REINFORCED COMPOSITES USING OPTICAL FIBRES</p> <p>Dr. Neha Chandarana</p> <p>This paper presents distributed measurement of the strains induced by braiding and liquid resin infusion and resin infusion using embedded optical fibres.</p>	<p>AUTOMATED PREFORMING WITH A SMART MOULD APPROACH FOR EFFICIENT LIQUID RESIN INFUSION IN AEROSPACE APPLICATIONS</p> <p>Mr. Florian Helber</p> <p>Automated preforming with a smart mould approach for efficient liquid resin infusion in aerospace applications</p>	<p>THE INFLUENCE OF TAPE GEOMETRY ON THE MECHANICAL PERFORMANCE OF BOLTED CFRTP-SMC JOINTS</p> <p>Mr. Xiaohang Tong</p> <p>This work focuses on the influence of tape geometry on the mechanical performance of bolted CFRTP-SMC joints</p>	<p>FEASIBLE REGION OF LAMINATION PARAMETERS FOR DOUBLE-DOUBLE LAMINATE</p> <p>Dr. Kai Zhao</p> <p>Feasible Region of Lamination Parameters for Double-Double Laminate</p>	<p>INFLUENCE OF VOIDS ON THICK DCB JOINT BEHAVIOR</p> <p>Mr. Jialiang Fan</p> <p>Study the influence of voids on the fracture behavior of the thick DCB joints.</p>	<p>OPTIMIZATION OF THERMOELECTRIC PROPERTIES OF CARBON NANOTUBE (CNT) VEIL BY DEFECT ENGINEERING</p> <p>Miss. Chongyang Zeng</p> <p>I will give a presentation about the optimization of carbon nanotube-based thermoelectrical materials</p>
<p>EFFECT OF CARBON NANOFILLERS ON THE MICROSTRUCTURAL AND THERMOMECHANICAL PROPERTIES OF BIODERIVED POLY(ALKYLENE FURANOATE)-BASED FILMS</p> <p>Dr. Giulia Fredi</p> <p>Adding carbon nanotubes (CNTs) to bioderived poly(decylene furanoate) enhances its mechanical properties and crystallization kinetics</p>	<p>SATURATED AND UNSATURATED STOKES-DARCY FLUID FLOW SIMULATIONS WITHIN 3D INTERLOCK FABRICS WITH CAPILLARY EFFECTS</p> <p>Mr. Morgan Cataldi</p> <p>Permeability tensor prediction for 3D woven fabrics through Stokes-Darcy fluid flow simulation with Z-set software</p>	<p>CLEAN JOINING TECHNOLOGIES FOR FUTURE MULTI-MATERIAL DESIGNED PARTS USING PULSED LASER</p> <p>Mr. Thomas Kuntze</p> <p>This work is about production of complex components from an eco-balanced perspective: reducing material variety, improving separability and avoiding contamination.</p>	<p>LIFECYCLE METRIC INTEGRATION IN LAMINATION PARAMETERS DESIGN SPACE FOR STRUCTURAL OPTIMIZATION OF COMPOSITE STRUCTURES</p> <p>Dr. Julien van Campen</p> <p>Study to include lifecycle metrics in lamination parameter design space to integrate LCA in structural optimisation.</p>	<p>NUMERICAL INVESTIGATION OF THE VIBRATION BEHAVIOR OF A COMPOSITE DRILL TUBE</p> <p>Mr. Moritz Kurkowski</p> <p>Influence of fiber angle, fiber material and fiber volume content on the vibration behavior of a composite drill tube</p>	<p>CLINCHING AND RESISTANCE SPOT WELDING OF THERMOPLASTIC COMPOSITES WITH METALS USING INSERTS AS JOINING INTERFACES</p> <p>Ms. Juliane Troschitz</p> <p>To use established joining technologies (clinching or resistance spot welding) for composite-metal joints, embedded inserts are applied as joining interfaces.</p>	<p>3D PRINTABILITY OF POLYMER BLENDED/ GRAPHENE COMPOSITES FOR STRAIN SENSORS APPLICATIONS</p> <p>Mr. Liam O'Connor</p> <p>The study looks at combining thermoplastic polyurethane, nylon-11 and graphene nanoplatelets for strain sensor applications</p>
<p>GNPS/EPOXY NANOCOMPOSITES FOR JOULE HEAT THERMOSETS CURING AND REPAIR OF CARBON FIBRE REINFORCED POLYMERS</p> <p>Dr. Cristina Valles</p> <p>The potential of GNPS/Epoxy Nanocomposites for Joule Heat Thermosets Curing and Repair of Carbon Fibre Reinforced Polymers is studied</p>	<p>AN IN-SITU PRESSURE EVALUATION TOOL FOR 3D-WOVEN COMPOSITES MANUFACTURED BY RESIN TRANSFER MOLDING.</p> <p>Dr. Corentin Tuloup</p> <p>Development and testing of a new technology to measure hydrostatic pressure within a 3D-woven preform manufactured by RTM.</p>	<p>THE EFFECT OF STITCH REMOVAL ON IN-PLANE FORMING INDUCED DEFECTS FOR NON-CRIMP FABRIC</p> <p>Dr Adam Joesbury</p> <p>Systematic study of the influence NCF stitch removal has on defect types that occur during dry fabric forming processes.</p>	<p>MECHANICAL PERFORMANCE OF CARBON NANOTUBE FILM UNDER HIGH-SPEED IMPACT LOADING</p> <p>Mr. Wenqi Wang</p> <p>This study focuses on experimental and simulation of CNT film in high-speed dynamic loading, aiming to reveal the potential application of such composites in ballistic resistance conditions.</p>	<p>ASSESSMENT OF FIBER REINFORCED POLYMERS FOR A GILSON MAST STRUCTURE ON STEEL DECK SHIPS</p> <p>Mr. Ebubekir Akarsu</p> <p>First steps of design process associated with a composite Gilson Mast attached to steel deck are reported.</p>	<p>ANALYSIS AND OPTIMIZATION OF JOINT FORMATION IN HYBRID COMPRESSION MOLDING</p> <p>Mr. Julian Lueckenkoetter</p> <p>The process-integrated joint formation of a spray-based adhesion promoter in the impact extrusion process is analyzed and characterized.</p>	<p>ENERGY EFFICIENT MANUFACTURING OF HIGH PERFORMANCE COMPOSITES BASED ON RECYCLED CARBON FIBRE</p> <p>Dr. Shanshan Huo</p> <p>Polymer matrix composites</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
12:50 - 12:55	<p>CHARACTERIZATION OF THE DYNAMIC TOUGHNESS OF COMPOSITE MATERIALS BY A MICROSCOPIC APPROACH Mr. Bastien Lammens</p> <p>Experimental set-up with high-speed camera to evaluate dynamic toughness using digital image correlation and non-singular terms of Williams series</p>		<p>RECYCLING INDUSTRIAL WASTE COMPOSITES AND HDPE THERMOPLASTICS TO USE IN 3D PRINTING OF COMPOSITES Dr. Pouyan Ghabezi</p> <p>Recycling of composite waste materials to use them as feedstock in 3D printing of fibre reinforced composites</p>			<p>SIMULATING THE EFFECT OF RELATIVE DENSITY ON COMPRESSION STRENGTH AND FAILURE MODES OF CERAMIC FOAM Mr. Vinit Vijay Deshpande</p> <p>Analysing effect of relative density on compression failure of porous ceramics through microstructure reconstruction, statistical size effect and failure modes.</p>	
12:55 - 13:00	<p>EFFECTS OF MODE MIXITY ON MICROSCOPIC DAMAGE PROCESS OF ADHESIVELY BONDED CFRP JOINTS Dr. Sota Oshima</p> <p>The effects of mode mixity on microscopic damage in adhesively CFRP joints were studied by in situ observation.</p>	<p>ON A MULTIPLE CRACK ORDER PARAMETER PHASE-FIELD MODEL ACCOUNTING FOR MECHANICAL JUMP CONDITIONS Dr. Andreas Prah</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): On a multiple crack order parameter phase-field model accounting for mechanical jump conditions</p>	<p>ADDITIVE MANUFACTURING OF CONTINUOUS CARBON FIBER/THERMOSET COMPOSITES Prof. Kelvin Fu</p> <p>3D printing of continuous carbon fiber/thermoset composites</p>	<p>DAMAGE SENSING CAPABILITIES OF MULTIFUNCTIONAL TRUSS LATTICES ENABLED VIA DLP 3D PRINTING Dr. Andreas Schiffer</p> <p>The piezoresistive and mechanical characteristics of DLP 3D printed octet and kelvin lattice structures are examined.</p>	<p>CHARACTERISATION OF HIGHLY-ALIGNED, DISCONTINUOUS, FIBRE COMPOSITES FOR COMPRESSIVE PERFORMANCE Mr. Ian Lee</p> <p>Workshop - The presentation reviews a novel four point bending test methodology for the characterisation of highly aligned discontinuous fibre composite tapes in compression.</p>	<p>ENVELOP ENRICHMENT METHOD TO APPLY PERIODIC BOUNDARY CONDITIONS ON NON-PERIODIC UNIT CELLS Mr. Florian Vazeille</p> <p>This work aim to provide a simple and embedded solution to homogenize non-periodic RVE using envelope enrichment method</p>	<p>COMPARISON OF MICROMECHANICS THEORIES FOR MODELING CHOPPED CARBON FIBER POLYMER MATRIX COMPOSITES Dr. Evan Pineda</p> <p>This presentation will focus on comparison of several micromechanics theories for modeling chopped carbon fiber reinforced polymer matrix composites.</p>
13:00 - 13:05	<p>EXPERIMENTAL INVESTIGATION ON FATIGUE AND TENSILE BEHAVIORS OF ADHESIVE AND HYBRID COMPOSITE-STEEL JOINTS Prof. Heoung-Jae Chun</p> <p>Comparative evaluation of tensile and fatigue properties of adhesively bonded and hybrid joints</p>		<p>ADDITIVE MANUFACTURING OF A NON-PLANAR MULTIFUNCTIONAL SANDWICH PANEL Ms. Juliette Pierre</p> <p>This work presents non-planar additive manufacturing of sandwich panels featuring high acoustic and load-bearing performances for aerospace applications.</p>			<p>AUTOMATED RITZ METHOD FOR THE ANALYSIS OF LAMINATED ANISOTROPIC PLATES Prof. Husain Al-Gahtani</p>	
13:05 - 13:10	<p>STRESS- AND STRAIN-BASED FATIGUE LIFE CALCULATION FOR SHORT-FIBER-REINFORCED POLYMERS Mr. Dario Kaylani</p> <p>Approaches for lifetime assesment of short fiber reinforced polymers via an integrative simulation chain considering local anisotropic material properties</p>		<p>EPOXY-BASED BLENDS FORMULATION FOR LIQUID CRYSTAL DISPLAY (LCD) PRINTING Dr. Claudio Tosto</p> <p>Formulation of Dual Curing epoxy-acrylate blends for Liquid Crystal Display (LCD) printing.</p>				
13:10 - 14:10	Lunch, Posters, Exhibition and Depart for Tours						
14:10 - 14:55	<p>THE CHALLENGE OF HIGH RATE COMPOSITE MANUFACTURE IN AEROSPACE, <i>Phillip Crothers, Boeing,</i> Plenary Lecture</p>						
14:55 - 15:00	Move to Concurrent Sessions						
15:00 - 16:00	Fatigue, fracture and damage - Session 6	Continuous & discontinuous fiber-reinforced polymers - Session 3	Modernising Composites Regulations - Session 1	Multifunctional composites - Session 6	Understanding & Improving Longitudinal Compressive Strength - Session 3	Computational methods - Session 6	Multiscale modelling - Session 3

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic
<p>STRUCTURE AND PROPERTIES OF POLYIMIDE NANOCOMPOSITES WITH NANODIAMOND Prof. Seira Morimune-Moriya Strong reinforcement effects of nanodiamond on polyimide nanocomposites were revealed.</p>	<p>SIMULATION OF FIBER ORIENTATION DURING COMPRESSION MOLDING PROCESS OF CFRTF-SMC Mr. ZIHAO Zhao This study is about the fiber orientation simulation of compression molding process of CFRTF-SMC</p>	<p>A NOVEL PROCESS FOR FORMING FIBRE METAL LAMINATES Mr. Zerong Ding Development of a novel process for forming high-strength alloys and fibre-reinforced polymers in one shot to manufacture ultra-high-strength FML components</p>	<p>ASSESSMENT OF MECHANICAL PROPERTIES OF AGED COMPOSITE LAMINATES IN SALTWATER ENVIRONMENT Dr. Pouyan Ghabezi Evaluation of degradation process and mechanical properties of composite materials aged in marine environment at elevated temperature</p>	<p>TARGET-ORIENTED PREFORM PRODUCTION OF GEOMETRICALLY COMPLEX COMPONENTS CONSIDERING MEASURED AND SIMULATED DRAPE BEHAVIOR Gero Förster Realization of preforms for optimal lightweight structural design with uninterrupted load-adapted fiber paths by means of tailored fiber placement.</p>	<p>EXPERIMENTAL EVALUATION OF ADHESIVELY BONDED LARGE COMPOSITE JOINTS UNDER MIXED MODE LOADING Mr. Teodor Gheorghe This experimental study focuses on the demonstration of feasibility of using full composite joints, tested under real loading conditions.</p>	<p>SHAPE MEMORY EPOXY RESIN AND ITS COMPOSITES WITH NARROW TRANSITION TEMPERATURE Dr. Lan Luo Shape memory epoxy resin and its composites with narrow transition temperature</p>
<p>DESIGN OF HIGH MECHANICAL PERFORMANCE CARBON NANOTUBE STRUCTURE: MACHINE-LEARNING ASSISTED HIGH-THROUGHPUT MOLECULAR DYNAMICS SIMULATION APPROACH Assoc. Prof. Go Yamamoto We explore the relationship between geometrical parameters and mechanical properties of CNTs using machine-learning assisted high-throughput molecular dynamics simulation technique.</p>		<p>PARAMETERS AFFECTING THE BIFURCATION POINT OF UNSYMMETRIC LAMINATES Mr. Emad Fakhimi This study focuses on the temperature at which the stable cured shapes of the unsymmetric laminates is developed.</p>	<p>DEVELOPMENT OF NON-CRIMP FABRICS FROM RECYCLED CARBON FIBRES Mr. Carsten Uthemann Presentation on the development of non-crimp fabrics made from recycled carbon fibres and the achievable mechanical composite properties</p>		<p>EFFECTS OF COMPOSITE OVERLAMINATION PATCHES TO IMPROVE FATIGUE LIFE OF WELDS Ms. Lourdes Blanco Study focused on the compare non-reinforced to composite reinforced HSLA welds. The objective is to optimize life cycle of ship</p>	<p>CERAMIFIABLE EPOXY COMPOSITES WITH ENHANCED THERMAL CONDUCTIVITY Prof. Yucai Shen Novel epoxy composites with multi-functions</p>
<p>SILICA COATED CELLULOSE NANOCRYSTALS AS ADDITIVES FOR POLYMER NANOCOMPOSITES Dr. Nicole Christine Jankovic The coating of cellulose nanocrystals with silica for enhanced polymer composite reinforcement</p>		<p>FORM CLOSURE CREATED BY INJECTION OVERMOLDING OF THERMOPLASTIC AIRCRAFT COMPONENTS - A CHALLENGING APPROACH Mr. Robin Fachtan Development of a strategy for enhanced bonding strength of injection molded elements by form-closure in a thermoplastic overmolding process</p>	<p>PROGRESSIVE PSEUDOGRAIN DAMAGE MODEL OF SHORT-FIBER REINFORCED PLASTICS FOR PREDICTING THEIR FATIGUE LIFE Mr. Jewook Yang A progressive pseudograin damage model is proposed to predict the fatigue life of short fiber-reinforced plastics (SFRPs).</p>		<p>DETECTING CRACK EXTENSION USING ALIGNED GRAPHENE IN SINGLE LAP JOINT Prof. JIA-LIN TSAI The crack initiation in SLJ was detected using the aligned graphene embedded within the epoxy adhesive</p>	<p>DESIGNING NEW COMPOSITE SOLID POLYMER ELECTROLYTES FOR LI BATTERIES Ms. Natália Magalhães Development of solid-state polymer composite electrolytes based on epoxy resin and inorganic fillers, for structural battery applications.</p>
<p>TOOL CONDITION MONITORING OF AN AUTOMATED ROBOTIC DRILLING PROCESS Mr. Stephen Lee Tool condition monitoring of an automated robotic drilling using real-time sensor data feedback and predicting drilling-induced damage on composite panel</p>		<p>EVALUATION ON JOINING BEHAVIOR OF UD-CF/EPOXY LAMINATES AND ALUMINUM PLATE USING ULTRASONIC HEATING Associate Prof. Daiki Tanabe This study aims to development ultrasonic joining of UD-CF/Epoxy and aluminum plate using phenoxy polymer as the energy director.</p>	<p>PHYSICAL AGING DURING CURE OF THERMOSETS: EFFECT OF TEMPERATURE Ms. Sherry Kiafar Investigation of the effect of aging temperature on thermoset polymers during cure</p>			
<p>Lunch, Posters, Exhibition and Depart for Tours</p>				<p>Early Career Researcher workshop by Elsevier Composites Journals</p>		
<p>Move to Concurrent Sessions</p>						
<p>Nanocomposites - Session 3</p>	<p>Liquid composites moulding - Session 3</p>	<p>Advanced manufacturing and automation - Session 3</p>	<p>Mechanics of composites - Session 3</p>	<p>Process modelling - Session 4</p>	<p>Composite and Hybrid Joints - Session 3</p>	<p>Polymer matrix composites - Session 3</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A	
15:00-15:05	ASSESSING THE FATIGUE RESPONSE OF GLASS FIBER REINFORCED SUSTAINABLE POLYMER MATRIX COMPOSITES Dr. Jayaram Pothnis The paper discusses fatigue and fracture behavior of glass fiber reinforced sustainable matrix composites for structural applications in offshore wind and tidal power platforms.	MICROSTRUCTURE GENERATION OF CONTINUOUS-DISCONTINUOUS FIBER REINFORCED POLYMERS VIA GENERATIVE ADVERSARIAL NETWORKS BASED ON CT-IMAGES Ms. Juliane Blarr Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Microstructure generation of continuous-discontinuous fiber reinforced polymers via generative adversarial networks (GAN) based on computed tomography images	WELCOME & BACKGROUND AND AIMS OF WORKSHOPS / INTRODUCTION TO SPEAKERS Prof. Janice Barton 'CerTest - SCIENTIFIC FOUNDATIONS FOR A NOVEL FRAMEWORK FOR PERFORMANCE VALIDATION OF COMPOSITE AEROSTRUCTURES RELYING LESS ON PHYSICAL TESTING AND ADOPTING DIGITAL TWINNING' Prof. Ole Thomsen	FLAME-RESISTANT MULTIFUNCTIONAL NANOCOMPOSITE FABRIC FOR FIRE PROTECTION OF ULTRAHIGH MOLECULAR WEIGHT POLYETHYLENE LAMINATES Dr. Michael Jakubinek Novel carbon nanotube-based fabrics with high nanotube content (>50wt%) applied to UHMWPE laminates are shown to provide flame protection.	IMPACT RESPONSE OF AUTOMATED FIBRE PLACEMENT ADVANCED PLACED PLY COMPOSITES Dr. Francisca Martinez Hergueta This presentation showcases the improved impact performance and damage tolerance of novel interlaced AP-PLY architectures manufactured by Automated Fiber Placement.	LOW-VELOCITY IMPACT DAMAGE SIMULATION USING COHESIVE ZONE MODEL AND LARCO5 CRITERION WITH EFFICIENT SEARCH ALGORITHM Mr. Peyman Shabani Simulation of low-velocity impact damage in composite laminates using cohesive zone model and LaRC05 criterion with an efficient search algorithm	ESTIMATION OF THE HYGRO-ELASTIC PROPERTIES OF A CARBON/EPOXY COMPOSITE TAKING INTO ACCOUNT HYGROMECHANICAL COUPLINGS Ms. Melissa Said Estimation of the hygro-elastic properties of a carbon/epoxy composite taking into account hygromechnical couplings	
15:05-15:10								
15:10-15:15								
15:15-15:20								
15:20-15:25	THE EFFECT OF FATIGUE DAMAGE ON VISCOELASTIC PROPERTIES OF ANGLE-PLY GFRP LAMINATES Mr. Seyed Shayan Khalooei Tafti Application of DMA testing and TTSP on fatigue-damaged GFRP material to model the effect of fatigue damage on FRP composites' viscoelastic properties	GENERATION AND ANALYSIS OF DIGITAL TWINS FOR CODICOFRP ACCOUNTING FOR FIBER LENGTH AND ORIENTATION DISTRIBUTION Ms. Celine Lauff Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Generation of Representative Microstructures for CoDiCoFRP and Analysis of the Computed Effective Properties accounting for Fiber Length and Orientation Distribution	'CerTest: ENHANCED PERFORMANCE AND PRODUCTIVITY THROUGH INTEGRATION OF MULTI-SCALE MODELLING, HIGH-FIDELITY EXPERIMENTATION AND BAYESIAN LEARNING' Prof. Richard Butler and Dr. Andrew Rhead	SENSING CAPABILITIES AND GAUGE FACTOR OF A MULTISCALE MULTIPHASE GRAPHENE-BASED COMPOSITE Mr. Nathan Hostettler A clever way to integrate graphene into polymer composite for self-sensing and damage tracking applications	IMPROVING THE COMPRESSIVE PERFORMANCE OF ADVANCED GRID STRUCTURES Prof. Gangadhara Prusty Automated fiber placement-based manufacturing method is proposed here to improve the compressive performance of the grid stiffeners	TOWARDS AN AUTOMATED PROCEDURE FOR HIGH-QUALITY CONFORMAL MESHES FOR COMPLEX WOVEN COMPOSITES Dr. Michael Ballard Assessing the relationship between mesh refinement and the accuracy of the quantities of interest for simulations of 3D textile composites.	ANALYSIS OF THE IN-PLANE SHEAR BEHAVIOR OF BIAxIAL NON-CRIMP-FABRIC AT MESOSCOPIC SCALE Mr. Ruo Chen Zheng Introduce a mesoscopic model of biaxial non crimp fabric, present experimental tests and numerical results	
15:25-15:30								
15:30-15:35								
15:35-15:40								
15:40-15:45	INVESTIGATIONS ON INTERACTIVE FAILURE MODES OF A LAMINATED COMPOSITE USING SYNCHROTRON RADIATION CT AND FEA Mr. Chaeyoung Hong Investigations on interactive failure models of laminated composite using synchrotron radiation computed tomography and finite element analysis	MODELING A TWO-STAGE THERMOSET CONSIDERING GLASS FIBRE SIZING USING MOLECULAR DYNAMICS Dr. Colin Denniston Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): All-atom molecular dynamics modelling of a two-stage thermoset with a glass fibre sizing	DEVELOPING COMPOSITE (AND OTHER ADVANCED MANUFACTURED) PRODUCT CERTIFICATION - A REGULATOR PERSPECTIVE Dr. Simon Waite	FIBRE-REINFORCED COMPOSITE SOLID ELECTROLYTES FOR STRUCTURAL BATTERIES Dr. Dorsa Safanama High modulus fibres are infused within a Li+-ion conducting polymer matrix to develop multifunctional composite solid electrolytes for structural batteries.	DIGITAL TWIN SIMULATION ON AXIAL COMPRESSION OF UD CFRP AND KEY PARAMETERS ON COMPRESSIVE STRENGTH Assoc. Prof. Masahito Ueda Axial compressive failure was revealed by the digital twin simulation.	DEVELOPMENT AND IMPLEMENTATION OF A PLANE-STRESS INVARIANT-BASED STRAIN RATE-DEPENDENT INELASTIC DEFORMATION MODEL FOR COMPOSITE MATERIALS. Mr. Khizar Rouf This research work focuses on the development and implementation of a plane-stress invariant-based strain rate-dependent inelastic deformation model for composite materials.	MICROMECHANICS OF CARBON AND HOLLOW GLASS FIBRE HYBRID COMPOSITE LAMINA Mr. Giuseppe Romano RVEs for Fibre-level Carbon and Hollow Glass hybrid composites are being developed to predict the micro-stresses and specific elastic properties.	
15:45-15:50								
15:50-15:55								
15:55-16:00								
16:00-16:30	Tuesday Afternoon Tea / Coffee Break, Posters and Exhibition							
16:30-18:00	Fatigue, fracture and damage - Session 7	Continuous & discontinuous fiber-reinforced polymers - Session 4	Modernising Composites Regulations - Session 2	Multifunctional composites - Session 7	Understanding & Improving Longitudinal Compressive Strength - Session 4	Computational methods - Session 7	Multiscale modelling - Session 4	
16:30-16:50	CORRELATING CRACK DENSITY, STIFFNESS DEGRADATION AND DISSIPATED ENERGY DURING FATIGUE LOADING OF ±45° GFRP LAMINATES Ms. Maria Gfrerrer Dr. Andreas J. Brunner The work focuses on the correlation of crack density, stiffness degradation and dissipated energy during fatigue loading of GFRP laminates	CHARACTERIZATION AND SIMULATION OF THE INTERFACE BETWEEN CONTINUOUSLY AND DISCONTINUOUSLY FIBER REINFORCED THERMOPLASTICS Mr. Nicolas Christ Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): Characterization of Co-DiCo interface with climbing drum peel test with humidity effects and numerical verification	SESSION 1 QUESTIONS & PANEL DISCUSSION Prof. Janice Barton	FACILE FABRICATION OF FLAME-RETARDANT GRAPHENE/SPONGE COMPOSITE FOR PRESSURE SENSING AND ELECTROMAGNETIC INTERFERENCE SHIELDING Dr. Teklebrahan Gebrekristos Weldemhret Multifunctional foam composites integrate both unique properties (i.e., porous structure, lightweight, flexibility, etc.) and the capability to increase efficiency.	CARBON NANOTUBE-GRAFTED QUARTZ FIBERS AS PIEZORESISTIVE REINFORCEMENT ELEMENTS Dr. David Anthony Tensile hierarchical bundle tests with in situ electrical conductivity measurements, showed high linear piezoresistive sensitivity with low absolute nanotube loading.	COMPARISON OF DAMAGE CHARACTERISTICS OF CO-CURED AND RIVET CONNECTED EVTOL WING UNDER BIRD-STRIKE Mr. Eray Kayar Comparison of Smooth Particle Hydrodynamic Explicit Simulation Cases of Bird Strike on Composite Wing Leading Edge of an eVTOL	ACCELERATING MULTISCALE SIMULATIONS WITH SURROGATE MODELS BASED ON RECURRENT NEURAL NETWORKS Mr. Moises Zarzoso A surrogate model based on neural networks, able to capture the diffuse damage, is implemented for continuous carbon fibre composites.	

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic
<p>LOOKING BEYOND ELECTROSTATIC DISSIPATION: GRAPHENE-POLYMER COMPOSITES WITH ELECTRICAL FUNCTIONALITY Prof. Ian Kinloch</p> <p>Processing-structure-property relationships are compared and contrasted in order to get EMI shielding, out-of-autoclave curing and deformed conductors in GNP-polymer composites.</p>	<p>STUDY OF THE FLUID-STRUCTURE INTERACTION OF A MAT REINFORCEMENT WITH A THERMOPLASTIC RESIN Mr. Gautier Allusse</p> <p>Study of a reinforcement compressibility and its impact on transverse permeability when subjected to the viscous pressure of thermoplastic matrices.</p>	<p>BEHAVIORAL INVESTIGATION ON UD-CF/PEEK ROD BY COMPRESSIVE PREPREG TAPE PULTRUSION PROCESS Mr. Takeshi Eguchi</p> <p>Laboratory-scale compressive prepreg tape pultrusion process was developed, and the UD-CF/PEEK rods are shown extremely high dense and high strength.</p>	<p>EXPERIMENTAL PARAMETER IDENTIFICATION FOR 3D NONLINEAR VISCOELASTIC MATERIAL MODEL Ms. Liva Pupure</p> <p>This study aims to analyze the nonlinear viscoelasticity for the 3D material model required for implementation in the FEM code</p>	<p>WARPAGE AND INTERFACIAL STRENGTH PREDICTION MODEL FOR THERMOPLASTIC COMPOSITE OVERMOULDING Mr. William Darby</p> <p>The warpage and interfacial strength model will use Molde3D, degree of healing and fibre migration in the overmould region model.</p>	<p>ULTRASONIC WELDING OF FLAX/POLYPROPYLENE THERMOPLASTIC COMPOSITE WITHOUT ENERGY DIRECTOR : LAP-SHEAR CHARACTERIZATION AND TEMPERATURE DISTRIBUTION Mr. Oussama Elogri</p> <p>The effect of welding parameters on interface temperature and mechanical properties for ultrasonic welding of flax/polypropylene composite without energy director</p>	<p>ON THE UNDERSTANDING OF REACTIVE DILUENT ROLE ON IR WELDING OF ACRYLIC-BASED GLASS FIBRE COMPOSITES Dr. Masoud Bodaghi</p> <p>IR Welding of acrylic-based fibre composites</p>
<p>ELECTROPHORETIC DEPOSITION OF CARBON NANOTUBES: TOWARDS ROLL TO ROLL MANUFACTURING AND NOVEL MULTIFUNCTIONAL COMPOSITE SENSORS Prof. Erik Thostenson</p> <p>Tailoring of carbon nanocomposite film morphology deposited using electrophoretic deposition and applications of novel flexible multifunctional composite sensors are discussed.</p>	<p>A NOVEL EXPERIMENTAL APPROACH TO QUANTIFY DUAL-SCALE FLOW IN LIQUID COMPOSITE MOLDING Mr. Benedikt Neitzel</p> <p>A novel optical methodology using photo-reactive resin is presented, to quantify dual-scale flow holistically in fully cured samples.</p>	<p>INCREMENTAL FORMING OF COMPOSITES Prof. Patrick Fairclough</p> <p>The creation of composites from CAD/CAM models without the use of moulds based on robotics and incremental forming.</p>	<p>STRESS TRANSFER IN DISCONTINUOUS ALIGNED THERMOPLASTIC COMPOSITE TAPES - AN EXPERIMENTAL AND NUMERICAL STUDY Mr. Hussain Abass</p> <p>An study of the stress-transfer mechanism of discontinuous thermoplastic tape composite to develop an accurate mechanical model</p>	<p>INFLUENCE OF FIBRE REINFORCEMENT ON THE DEVELOPMENT OF INTERFACE MORPHOLOGY DURING COMPOSITE INJECTION OVERMOULDING Mr. Ruairaidh MacLennan</p> <p>A micro-scale CFD model is implemented with the goal of understanding the role of fibre reinforcement on the development of interface morphology</p>	<p>THE INFLUENCE OF INTERFACE SPECIFICATIONS ON IN- AND OUT-OF-PLANE LOADED HYBRID JOINTS Mr. Thomas Wolfsgruber</p> <p>Advanced surface specifications affect the load bearing capacity and stiffness of in- and out-of-plane loaded hybrid joints with optimised geometries.</p>	<p>TIME-DEPENDENCY OF FLEXURAL PROPERTIES IN BIAXIALLY ORIENTED POLYPROPYLENE LAMINATES Miss. Anna Kandinskaja</p> <p>Flexural properties time-dependency study in biaxially oriented polypropylene laminates</p>
<p>ULTRASONICATION-ASSISTED FABRICATION OF HIGH-PERFORMANCE CARBON NANOTUBE COMPOSITES Prof. Weibang Lyu</p> <p>Effectively strengthening CNT composites through the ultrasonication-assisted de-bundling of CNTs</p>	<p>GAP FORMATION AND RESIN FLOW IN BENT PREFORMS FOR RESIN TRANSFER MOLDING Dr. Andreas Endrueweit</p> <p>This presentation discusses modelling of gap formation and numerical simulation of resin flow in Resin Transfer Moulding with bent preforms</p>	<p>CHARACTERIZATION OF DRIVING MECHANISMS INVOLVED IN DECONSOLIDATION OF THERMOPLASTIC COMPOSITE LAMINATES Dr. Arthur Levy</p> <p>Continuous thickness measurement and in-situ micro tomography in synchrotron were used to investigate void and defect appearance during deconsolidation</p>	<p>TRANSVERSE ZIGZAG DAMAGE MODE AND STITCH CRACKING IN ANTISYMMETRIC ANGLE-PLY LAMINATES Dr. Jeffrey Chambers</p> <p>Experimentally observed transverse zigzag damage interaction mode</p>			
					<p>FEATURES OF NEAR-INFRARED RING HEATER AND SERVO-PRESS IN CF/PEEK RIVET FASTENING Mr. Takeshi Eguchi</p> <p>This study is discussed on features of near-infrared ring heater and servo-press in CF/PEEK rivet fastening and the joining strength.</p>	<p>EFFECT OF MELT SPINNING ON POLY-ETHER-ETHER-KETONE INTEGRITY AND CONSEQUENCES ON COMMINGLED PREFORM CONSOLIDATION Dr. Olivier DE ALMEIDA</p> <p>Role of the sizing agent applied onto spun PEEK yarns and its consequence on the consolidation of commingled C/PEEK preforms</p>

Tuesday Afternoon Tea / Coffee Break, Posters and Exhibition

Nanocomposites - Session 4	Liquid composites moulding - Session 4	Advanced manufacturing and automation - Session 4	Moulding and Printing	Process modelling - Session 5	Composite and Hybrid Joints - Session 4	Polymer matrix composites - Session 4
<p>CEMENT-BASED COMPOSITES CONTAINING FUNCTIONALIZED CARBON NANOMATERIALS Dr. Luca Lavagna</p> <p>Functionalization of carbon fibers, carbon nanotubes and graphene improves both mechanical and electrical properties of cement-based composites.</p>	<p>FABRICATION OF POLYAMIDE 6-BASED CFRP WITH WATER RESISTANCE VIA T-RTM PROCESS AND FLUORINATED POLYDOPAMINE COATING Seung Mo Son</p> <p>Fabrication of polyamide 6-based CFRP with water resistance via T-RTM process and fluorinated polydopamine coating.</p>	<p>BRAID-TRUSION OF HOLLOW GLASS FIBER / POLYETHYLENE TEREPHTHALATE THERMOPLASTIC COMPOSITES Miss. Maissaloun El-Jakl</p> <p>The presentation will include a description of the Braid-trusion process, the consolidation methods used, the results of the characterization of the composites and a conclusion of the work.</p>	<p>CHARACTERIZATION AND IMPROVEMENT OF SMA-POLYMER INTERFACE IN ACTIVE HYBRID COMPOSITES Mrs. Julia Jungbluth</p> <p>We present a new approach to characterize the load transfer capability of the interface between surface structured SMA wires and the surrounding polymer matrix in an active hybrid composite.</p>	<p>A COMPREHENSIVE FRAMEWORK FOR CHARACTERIZATION AND SIMULATION OF FORMING PROCESS Dr. Alireza Forghani</p> <p>This paper provides an overview of a physics-based Forming Characterization, Simulation and Validation Framework</p>	<p>TESTING OF WIND TURBINE BLADE SPAR CAP TO WEB JOINT SUBCOMPONENT SUBJECTED TO MULTIAXIAL LOADING Dr. Tobias Laux</p> <p>Wind turbine blade spar-cap-to-web T-joint subcomponent multiaxial experiment: experimental set-up, testing strategy, and experimental results.</p>	

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
16:50 - 17:00	<p>TENSILE AND SHEAR RESPONSES OF CARBON FIBER FABRIC COMPOSITES AT DIFFERENT LOADING RATES Mr. Taeseong Choi</p> <p>In this presentation, the rate-dependent mechanical behavior of a carbon fiber fabric reinforced epoxy polymer (CF/EP) composite material is investigated.</p>	<p>FATIGUE DAMAGE CHARACTERIZATION OF NON-CRIMP FABRIC REINFORCED REACTIVE THERMOPLASTIC COMPOSITES AT ROOM AND LOW TEMPERATURES Mr. Erli Shi</p> <p>Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): This study investigated the low temperature fatigue behavior of NCF glass fiber reinforced reactive thermoplastic composites.</p>	<p>OVERVIEW OF CURRENT PROCESSES AND FUTURE DEVELOPMENTS IN COMPOSITES CERTIFICATION - A WIND TURBINE INDUSTRY PERSPECTIVE Dr. Christopher Harrison</p>	<p>PEEK COMPOSITE 2D AUXETIC STRUCTURES ENABLED VIA ADDITIVE MANUFACTURING FOR MULTIFUNCTIONAL APPLICATIONS Prof. S Kumar</p> <p>Multifunctional performance of additive manufacturing-enabled PEEK nano composite 2D auxetic structure</p>	<p>AN INDUSTRY PERSPECTIVE ON THE ENHANCEMENT OF THE COMPRESSION STRENGTH PROPERTIES OF COMPOSITE MATERIALS Dr. Mark Harriman</p> <p>Solvay will provide a historical perspective of the key principles and challenges governing compression performance of composite systems, and discuss the current challenges relating to the enhancement of this important property for the composites industry</p>	<p>NUMERICAL IMPACT DAMAGE MODELLING IN COMPOSITE STRUCTURES USING STRAIN RATE DEPENDENT CONSTITUTIVE MODELS Mr. Jakov Ratkovic</p> <p>Numerical methodology for impact damage prediction.</p>	<p>HIGH THROUGHPUT MODELLING OF POLYMERS WITH COMPUTATIONAL CHEMISTRY AND MACHINE LEARNING Mr. Matthew Bone</p> <p>Development of new polymer coatings for wind turbine blades through molecular dynamics simulation and neural networks</p>
17:00 - 17:05							
17:05 - 17:10							
17:10 - 17:15	<p>CRITICALITY OF DELAMINATION FLAWS IN FIBRE REINFORCED COMPOSITES Mr. James A. Quinn</p> <p>An investigation into the effect (criticality) of delamination flaws on the mechanical performance of fibre-reinforced polymer composites</p>	<p>MULTISCALE BEHAVIOR OF LOCALLY REINFORCED COMPOSITE STRUCTURES PRODUCED BY TAILORED FIBER PLACEMENT Workshop - Continuous-Discontinuous fiber reinforced polymers (CoDiCoFRP): RVE model of the TFP structure and the obtaining of local FVC, local fiber orientation, stiffness and strength reductions</p>	<p>VVUQ FRAMEWORK TO ASSESS CREDIBILITY OF SIMULATION OF COMPOSITE STRUCTURES' Dr. Ludovic Barriere</p>	<p>IMPACT AND COMPRESSION AFTER IMPACT PERFORMANCE OF A NOVEL MULTIFUNCTIONAL INTER-WOVEN WIRE FABRIC COMPOSITE Mr. Minqiang Jiang</p>	<p>BIO-INSPIRED MULTIDIRECTIONAL LAMINATES FOR IMPROVED COMPRESSIVE PERFORMANCE Dr. Torquato Garulli</p> <p>The presentation addresses the design and experimental assessment of a novel microstructure to improve compressive performances of multidirectional carbon fibre reinforced plastics.</p>	<p>EFFICIENT DAMAGE SIMULATION METHOD FOR TEXTILE COMPOSITE USING FIBER-BUNDLES / MATRIX-RESIN SEPARATED MODEL Dr. Akinori Yoshimura</p> <p>Novel efficient damage simulation method for textile composite is presented. It achieves decreased calculation cost and much easier meshing process.</p>	<p>SHELL-BASED COMPUTATIONAL HOMOGENISATION OF DAMAGE IN COMPOSITE MATERIALS Mr. Elias Börjesson</p> <p>Shell-based computational homogenisation for analysis of damage in fibre composite materials</p>
17:15 - 17:20							
17:20 - 17:25							
17:25 - 17:30	<p>INFLUENCE OF DAMAGES ON THE FATIGUE LIFE OF LAMINATE USING THERMAL MEASUREMENTS AND RESIDUAL STRENGTH Mr. Kilian Demilly</p> <p>Influence of delamination and matrix failure on the fatigue behaviour of a carbon-epoxy laminate using self-heating protocol and Sendeckyj's approach</p>	<p>REGULATORY BARRIERS ACROSS TO EFFICIENT VALIDATION AND CERTIFICATION OF COMPOSITES ACROSS SECTORS AND APPLICATIONS Enrique Garcia</p>	<p>AN AIRBUS PERSPECTIVE ON CHALLENGES IN CERTIFICATION FOR FUTURE AIRFRAMES Prof. Linden Harris</p>	<p>DETERMINATION OF THE LONGITUDINAL COMPRESSIVE STRENGTH OF UD PLYS CONSIDERING DIFFERENT CLASSICAL AND INNOVATIVE TESTS Dr. Frédéric Laurin</p> <p>The consistency of compressive and bending tests on carbon/epoxy laminated composites has been demonstrated by analyzing them with a micro-mechanical model to determine the longitudinal compressive strength</p>	<p>FREE-EDGE EFFECTS SURROUNDING CIRCULAR HOLE IN COMPOSITE LAMINATES UNDER TEMPERATURE CHANGE AND BIAXIAL TENSION Dr. Navid Kharghani</p> <p>Investigation of free-edge effects surrounding circular hole in composite laminates under the combination of biaxial tension and temperature change</p>	<p>NUMERICAL ANALYSIS OF DAMAGE PROPAGATION FOR DISCONTINUOUS CFRTP Dr. Keita Goto</p> <p>In this study, the mechanical properties of a discontinuous CFRTP are evaluated based on multiscale numerical analyses.</p>	
17:30 - 17:35							
17:35 - 17:40							
17:40 - 17:45	<p>INFLUENCE OF DAMAGES ON THE FATIGUE LIFE OF LAMINATE USING THERMAL MEASUREMENTS AND RESIDUAL STRENGTH Mr. Kilian Demilly</p> <p>Influence of delamination and matrix failure on the fatigue behaviour of a carbon-epoxy laminate using self-heating protocol and Sendeckyj's approach</p>	<p>REGULATORY BARRIERS ACROSS TO EFFICIENT VALIDATION AND CERTIFICATION OF COMPOSITES ACROSS SECTORS AND APPLICATIONS Enrique Garcia</p>	<p>AN AIRBUS PERSPECTIVE ON CHALLENGES IN CERTIFICATION FOR FUTURE AIRFRAMES Prof. Linden Harris</p>	<p>DETERMINATION OF THE LONGITUDINAL COMPRESSIVE STRENGTH OF UD PLYS CONSIDERING DIFFERENT CLASSICAL AND INNOVATIVE TESTS Dr. Frédéric Laurin</p> <p>The consistency of compressive and bending tests on carbon/epoxy laminated composites has been demonstrated by analyzing them with a micro-mechanical model to determine the longitudinal compressive strength</p>	<p>FREE-EDGE EFFECTS SURROUNDING CIRCULAR HOLE IN COMPOSITE LAMINATES UNDER TEMPERATURE CHANGE AND BIAXIAL TENSION Dr. Navid Kharghani</p> <p>Investigation of free-edge effects surrounding circular hole in composite laminates under the combination of biaxial tension and temperature change</p>	<p>NUMERICAL ANALYSIS OF DAMAGE PROPAGATION FOR DISCONTINUOUS CFRTP Dr. Keita Goto</p> <p>In this study, the mechanical properties of a discontinuous CFRTP are evaluated based on multiscale numerical analyses.</p>	
17:45 - 17:50							

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic
<p>STRENGTH AND LIFE ENHANCEMENTS OF VERTICALLY-ALIGNED CARBON NANOTUBE (VACNT)-REINFORCED COMPOSITE AEROSTRUCTURES Dr. Richard Li</p> <p>Using a building-block approach, vertically-aligned carbon nanotube (VACNT) reinforcement technology is evaluated for its efficacy in enhancing the through-thickness properties of composite laminates necessary for reducing the weight, improving the damage tolerance and extending the fatigue life of composite airframe structures.</p>	<p>UNDERSTANDING LINEAR AND RADIAL FLOW FOR IN-PLANE PERMEABILITY DETERMINATION IN THE ACCURACY OF LCM SIMULATION Miss. Joana M. Malheiro</p> <p>Permeability determination through linear and radial flow for the accurate simulation of the manufacturing process of FRCP by LCM.</p>	<p>PERFORMING OF THICK NON-CRIMP FABRIC LAMINATES USING DOUBLE DIAPHRAGM FORMING Mr. Guy Lawrence</p> <p>An investigation of the significance of inter-ply slip on the formability of thick multi-ply NCF laminates during double diaphragm forming.</p>	<p>MECHANICAL AND FIRE CHARACTERISTICS OF POLYPROPYLENE COMPOSITES USING AMMONIUM POLYPHOSPHATE AND CHICKEN FEATHER FIBRES Prof. Debes Bhattacharyya</p>		<p>OPTIMISING DIMENSIONS, DISTRIBUTION AND MATERIAL OF HEATING ELEMENT TO IMPROVE QUALITY OF RESISTANCE WELDING COMPOSITE Dr Yunhao Liang</p> <p>This work proposes an ideal that the resistance welding is operated under a printed heating element with altered resistance distribution.</p>	
<p>FABRICATION AND EVALUATION OF POLYURETHANE NANOCOMPOSITES WITH PLASMA-MODIFIED CARBON NANOTUBES Mr. Hikaru Fukuda</p> <p>Plasma modification of carbon nanotubes were conducted to introduce isocyanate groups on the surfaces. The polyurethane nanocomposites with plasma-modified carbon nanotubes were prepared by in-situ polymerization, and the structure and the properties of the nanocomposites were evaluated.</p>	<p>MANUFACTURING TECHNIQUES FOR PRODUCTION OF SUSTAINABLE RECYCLATE NATURAL FIBER COMPOSITES Mr. Bharath Ravindran</p> <p>Detailed exploration of the processing of recycle natural fiber-reinforced composites to ensure a sustainable production that leads to the conception of closed loops in which resources are in the circular concept.</p>	<p>CFRP CONICAL GRID SHELL STRUCTURE WITH EMBEDDED FOS Dr. Giovanni Totaro</p> <p>The presentation includes the design approach, manufacturing process and test results of an efficient composite lattice structure with embedded optic fibers</p>	<p>HEAVILY LOADED EXTREME LIGHTWEIGHT COMPONENTS MADE BY TAILORED FIBER PLACEMENT PLACEMENT - COMPUTATIONAL DESIGN Dr. Tales de Vargas Lisboa</p> <p>Modelling and improvement of TFP structures considering VA concept</p>	<p>DEVELOPMENT OF A COUPLED DIFFUSION-CRYSTALLIZATION-DEGRADATION MODEL DURING WELDING OF PAEK COMPOSITES Dr. Theo Baumard</p> <p>The influence of crystallization and degradation on PEEK diffusion in welding processes is modelled based on FSC and rheology characterization.</p>	<p>RADICALLY IMPROVING THE FRACTURE TOUGHNESS OF BONDED THERMOSET JOINTS Mr. Thomas Maierhofer</p> <p>Fusion bonding was investigated for joining thermoset composites. It was observed that the joint's fracture toughnesses are radically improved.</p>	<p>SCALABLE PRODUCTION AND THERMOELECTRICAL MODELLING OF INFUSIBLE MULTIFUNCTIONAL GNPS-MODIFIED COMPOSITES FOR STRUCTURAL APPLICATIONS Dr. Azadeh Mirabedini</p> <p>The development of infusible multifunctional nanocomposites to be employed as an advanced matrix into FRPs to introduce multifunctionalities.</p>
		<p>MODEL-DRIVEN DESIGN OF AN INDUCTION COIL FOR LOCAL COMPOSITE CURING APPLICATIONS Mr. James Uzzell</p> <p>Parametric modelling design of an electromagnetic induction coil for improved in-plane heating uniformity in composite laminates</p>			<p>A NOVEL FIBER-REINFORCED COMPOSITES MANUFACTURING SYSTEM DEVELOPMENT: MULTI-DROP FILLING PROCESS Mr. Seung In Kang</p> <p>A novel fiber-reinforced composites manufacturing systems development: multi-drop filling process</p>	<p>STATIC AND FATIGUE BEHAVIOR OF HYBRID COMPOSITE JOINTS Dr. Lulu Liu</p> <p>Oral presentation will be given regarding the static and fatigue behavior of composite hybrid joints</p>
<p>INTEGRATED THERMAL ENERGY STORAGE IN GRAPHENE-BASED COMPOSITE EVAPORATOR FOR HIGH-EFFICIENCY WATER GENERATION Dr. Kit-ying Chan</p> <p>This work provides an effective strategy to prolong the duration of water generation under practical intermittent sunlight conditions.</p>	<p>DETECTION OF RACE-TRACKING AND OTHER DEFECTS IN RESIN TRANSFER MOULDING Dr. Mikhail Matveev</p> <p>Detection of race-tracking in other defects is investigated numerical and experimentally. Recommendations on the minimal number of sensors are provided.</p>		<p>AN INVESTIGATION INTO FLAT GLASS FIBRES FOR INJECTION MOULDED POLYAMIDE 6,6 COMPOSITES Mr. Andrew Carlin</p> <p>An investigation into flat glass fibres for injection moulded polyamide 6,6 composites</p>		<p>INTRODUCTION OF DEBONDING CAPABILITY IN METHACRYLATE ADHESIVE FOR METAL-COMPOSITE JOINTS USED IN AUTOMOTIVE APPLICATIONS Mrs. Sandra Roche</p> <p>Adhesive metal-composite joints with debonding on demand capability to facilitate recycling, repair and reuse.</p>	
		<p>FABRICATION OF POLYMER-DERIVED CERAMIC BASED ON 3D/4D PRINTED PRECURSOR Mr. Siyao Chen</p>	<p>INFLUENCE OF HEATING TIME DURING MOLTEN STATE TESTING OF THERMOPLASTIC COMPOSITES USING BIAS EXTENSION TEST Mrs. Ramak Hossein Abadi</p> <p>This study investigates the influence of heating time during the molten state testing of thermoplastic composites using bias extension test.</p>			

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
17:50 - 17:55	<p>ACOUSTIC EMISSION MONITORING IN COMPOSITES DURING CRYOGENIC THERMAL CYCLING Mr. Huw Edwards</p> <p>Acoustic emission monitoring for microcrack detection during thermal cycling to screen materials for suitability in composite cryogenic hydrogen storage tanks.</p>						<p>MULTI-SCALE MODELLING THE EFFECT OF VOIDS ON SHORT BEAM SHEAR STRENGTH OF COMPOSITES Ms. Fen Huang</p> <p>Multi-scale Modelling the Effect of Voids on Short Beam Shear Strength of Composites</p>
17:55 - 18:00	<p>INFLUENCE OF CREEP LOAD ON AGING AND FRACTURE MECHANIC BEHAVIOUR OF SHORT FIBRE REINFORCED PEEK Dr. Gabriel Stadler</p> <p>Determination of the effect of creep load on the fracture mechanical and ageing behaviour in high load areas of sfr PEEK.</p>		<p>OFFSHORE WIND TURBINE BLADE CERTIFICATION - CHALLENGES AND OPPORTUNITIES Dr Stephen Randall</p>				
18:00 - 18:05							
19:00 - 23:00	Student Party						
19:15 - 22:30	ICCM VIP Dinner (Invitation Only)						

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic
<p>ENHANCED MECHANICAL PROPERTIES OF CFRP COMPOSITES VIA A HYDROXYLATED MXENE/CF CORE-SHELL STRUCTURE Mr. Yi Hu</p> <p>A core-shell structure is constructed by assembling the hydroxylated MXene nanoparticles onto carbon fiber to enhance mechanical properties of composites</p>	<p>ERRORS IN SURFACE ENERGY ESTIMATION OF FIBRES FOR LIQUID COMPOSITE MOULDING PROCESSES AND POTENTIAL ORIGINS Dr. Pierre-Jacques Liotier</p> <p>Evaluation of the error in surface energy and its components associated to the measurement of an alleged equilibrium contact angle deriving from static or quasi-static data with two different tensiometers</p>					
<p>FABRICATION OF STRUCTURE CONTROLLABLE NANOCOMPOSITE WITH CNT AEROGEL BY REACTIVE INFILTRATION OF POLYAMIDE 6 Ms. Suyeon Lee</p> <p>Fabrication of structure controllable nanocomposite with CNT aerogel by reactive infiltration of polyamide 6</p>	<p>INFLUENCE OF INTRA-YARN PERMEABILITY ON MESO-SCALE PERMEABILITY OF PLAIN WEAVE AND 3D FABRICS Dr. Louise Brown</p> <p>In the present work, the key parameter to identify the influence of intra yarn permeability on the meso-scale permeability has been investigated with the systematic study of weft and warp yarn spacing on the plane weave as well as the position of binder yarn and number of in-plane yarn layers on 3D weave fabric.</p>					
Student Party						
ICCM VIP Dinner (Invitation Only)						

Time	Main Auditorium	Studio	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
08:35 - 09:20	CARBON FIBRE REINFORCED PLASTICS FOR A SUSTAINABLE SOCIETY , <i>Dr. Kenichi Yoshioka</i> , Toray Industries, Inc., Plenary Lecture					
09:20 - 09:50	PERFORMANCE PREDICTION OF NOTCHED AND UNNOTCHED INTERLOCK WOVEN COMPOSITES BY INDEPENDENT MESH METHOD AND RX-FEM , <i>Prof. Endel V. Jarve, Ph.D</i> University of Texas at Arlington, Arlington, TX, Keynote address	CIRCULARITY AND SUSTAINABILITY FOR THE COMPOSITES COMMUNITY , <i>Dr. Tia Benson Tolle</i> , Boeing, USA, Keynote address		VARICOMPOSITES: SPATIALLY AND TEMPORALLY VARIABLE PROPERTIES FOR HIGHLY EFFICIENT AND SUSTAINABLE PERFORMANCE , <i>Prof. Paul Weaver</i> , University of Limerick, Ireland, Keynote address		
09:50 - 10:00	Move to Concurrent Sessions					
10:00 - 11:00	Fatigue, fracture and damage - Session 8	Computational methods - Session 8	Structural design criteria, safety and reliability - Session 1	Understanding & Improving Longitudinal Compressive Strength - Session 5	Life Cycle Assessment for Composite Materials - Session 1	Hybrid & metacomposites - Session 1
10:00 - 10:20	THE EFFECT OF GRAPHENE AS A MULTIFUNCTIONAL ADDITIVE FOR CARBON-FIBER COMPOSITES IN CRYOGENIC ENVIRONMENTS Mr. Eduardo Szpoganicz Investigation of essential properties of modified carbon-fiber composite materials in cryogenic environments for hydrogen storage vessel and aerospace applications	NUMERICAL MODELLING AND TESTING OF A PROTECTIVE STRUCTURE FOR BATTERY PROTECTION Mr. Emilio Gomez Ulloa Numerical modelling and testing of a composite structure for thermal and crashworthiness applications in EVs packs	APPLICABILITY OF HISTORICAL LAMINATE STRENGTH DATA FOR PREDICTING KNOCKDOWNS FOR WRINKLES IN COMPLEX PARTS Dr. Vincent Karel Maes Exploring the viability of using historical data of wrinkle impact on coupon strength for predicting real part performance.	HIERARCHICAL COMPOSITES WITH HIGH CNT LOADING MADE BY CONTINUOUS WET POWDER IMPREGNATION Prof. Alexander Bismarck High CNT loading hierarchical composites with improved matrix dominated properties	LESSONS LEARNED WHEN ASSESSING EMERGING COMPOSITE MATERIALS USING LIFE CYCLE ASSESSMENT Mrs. Frida Hermansson This presentation will be about assessing emerging composite materials using LCA, applied to the case of carbon fiber composites	JOINING OF CFRP-TUBES TO TITANIUM FITTINGS BY CONTINUOUS ULTRASONIC WELDING Dr. Moritz Liesegang Tubular Ti6Al4V/CF-PEEK joints were manufactured by orbital ultrasonic welding and investigated considering the welding process, mechanical joint properties and microstructure
10:20 - 10:30	FLEXURAL FATIGUE ENHANCEMENT OF CARBON/EPOXY COMPOSITES THROUGH NANOCCLAY/ GRAPHENE NANOPARTICLES Dr. Mahesh Hosur The presentation is on improving fatigue performance of carbon/fiber reinforced composites under flexural loading through the inclusion of nanoclay and graphene nanoplatelets.	STRUCTURAL OPTIMISATION FOR DAMAGE TOLERANCE Mr. Rui Costa Methodology for robust design of skin-stiffener runout structures through structural optimisation while accounting for tolerance of kissing bond defects	CLOSED FORM SOLUTION FOR FAILURE PRESSURE IN BEND-FREE PRESSURE VESSELS Dr. Shahzad Daghighi Closed-form solution for failure pressure in bend-free variable angle tow composite vessels is developed and used in the design methodology.	THE EFFECT OF NACRE-INSPIRED COATING ON THE COMPRESSION BEHAVIOUR OF CARBON FIBRE COMPOSITE Dr. Rupam Gogoi The presentation explains the ordered assembly of nanoparticles on the surface of carbon fibre that mimics the structure of natural nacre and its effect on the possible improvement of the compressive properties of composites.	CHEMICAL RECYCLING OF BIO-BASED EPOXY THERMOSETS: AN LCA STUDY Mrs. Lorena Saitta The proposed work aims to provide an analysis of the environmental impacts caused by the chemical recycling of epoxy composites.	IN SITU SYNCHROTRON MICROTOMOGRAPHY REVEALS PLY THICKNESS AND NANOREINFORCEMENT EFFECTS ON HYBRID COMPOSITE PROGRESSIVE DAMAGE Dr. Reed Kopp Ply thickness and interlaminar nanoreinforcement effects on progressive damage in composite laminates studied via in situ SRCT with edge-notched tension.
10:30 - 10:40	MULTIFUNCTIONAL 3D WOVEN COMPOSITES BASED ON METAL FILAMENTS Dr. Raj Ladani This study presents the experimental and finite element modelling analysis on the modes I and II interlaminar fracture toughness and electrical properties of 3D woven composites reinforced with steel and copper z-filaments.	MODELLING OF DAMAGE IN IMPACT OF COMPOSITE STRUCTURES USING HIGHER ORDER ELEMENTS Mr. Jagan Selvaraj An accurate and computationally efficient numerical method for modelling damage in composite structures by overcoming limitations present in linear elements.	BAYESIAN CALIBRATION OF A FINITE ELEMENT C-SPAR MODEL USING DIGITAL IMAGE CORRELATION Dr. Carl Scarth Bayesian calibration of a Finite Element model using DIC, while quantifying uncertainty in model inputs, modelling discrepancies, and measurement errors.	EFFECT OF PLY-SCALE DEFECTS ON THE COMPRESSIVE FAILURE OF CARBON-FIBRE REINFORCED POLYMERS Dr. Declan Carolan Using deliberate defects to understand the compression of composite laminates		TRANSLAMINAR FRACTURE TOUGHNESS CHARACTERIZATION IN FIBER-HYBRID THIN-PLY COMPOSITES: EFFECT OF HYBRIDIZATION Mr. Guillaume Broggi Investigation of the hybridization effect with respect to the ply-thickness effect in carbon-carbon hybrid thin-ply using a J-integral data reduction method.
11:00 - 11:30	Wednesday Morning Tea / Coffee Break, Posters and Exhibition					
11:30 - 13:10	Fatigue, fracture and damage - Session 9	Computational methods - Session 9	Structural design criteria, safety and reliability - Session 2	Understanding & Improving Longitudinal Compressive Strength - Session 6	Life Cycle Assessment for Composite Materials - Session 2	Hybrid & metacomposites - Session 2
11:30 - 11:50	CONTROLLING DYNAMIC BRITTLE FAILURE OF POLYMERIC COMPOSITES BY MULTIAXIAL LOADING Dr. LongHui Zhang Controlling brittle failure of polymeric composites	MACHINE LEARNING-ASSISTED TWO-STEP HOMOGENIZATION FRAMEWORK OF SHORT FIBER-REINFORCED PLASTICS Mr. Jae-hyuk Choi We propose a machine learning-assisted two-step homogenization framework for short fiber-reinforced plastics.	DESIGN, MANUFACTURING, TESTING AND OPTIMIZATION OF BOLT LOADED VARIABLE-AXIAL COMPOSITE LAMINATES Dr. Axel Spickenheuer Application of a variable-axial fiber design to improve failure initiation and energy absorption of bolt loaded composite laminates	OVERBRAIDING OF PULTRUDED RODS FOR HIERARCHICAL COMPOSITES Dr. Laura Pickard Workshop - Understanding and improving longitudinal compressive strength	LCA OF CARBON FIBERS: AN ANALYSIS OF AVAILABLE DATA SETS Prof. Veronique Michaud	A FUNDAMENTAL NUMERICAL STUDY OF WEIBULL MODULUS ESTIMATION USING SINGLE HYBRID COMPOSITE TESTS Dr. Meisam Jalalvand This is about a new method to estimate Weibull Modulus of UD laminates using single small coupon size test samples

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan
Move to Concurrent Sessions					
Recycling and sustainability - Session 1	Liquid composites moulding - Session 5	Damage tolerance - Session 1	Additive manufacturing - Session 1	Renewable Energy - Session 1	Composites Manufacturing and Processing - Session 1
<p>LIFE CYCLE ASSESSMENT OF CARBON FIBRE REINFORCED POLYMERS IN AEROSPACE APPLICATIONS. Mrs. Chizoba Josphine Ogugua This work provide insight into how the LCA of lightweight structures should be carried out including all possible system boundaries and data representativeness</p>	<p>EFFECT OF DIE COATED WITH HEAT INSULATION ON SURFACE ROUGHNESS IN THERMOSET COMPRESSION MOLDING Dr. Atsushi Mizutani Verification of Surface Roughness Reduction Effect by Insulating Coating Layer on Mold Surface in Thermosetting Compression Molding</p>	<p>TRANSLAMINAR FRACTURE ANALYSIS IN HYBRID FIBRE-REINFORCED COMPOSITES THROUGH 4D IN-SITU SYNCHROTRON TOMOGRAPHY Mr. Sina AhmadvashAghbash Elaborates on translaminar fracture in (non-)hybrid thin-ply through SRCT data. Additionally, fibre-by-fibre hybridisation effect on translaminar fracture toughness is evaluated.</p>	<p>IN-SITU MIXING AND PRINTING OF CONTINUOUS CARBON FIBRE REINFORCED THERMOSET COMPOSITES Prof. Simon Bickerton A novel 3D printer has been developed to deposit continuous carbon fibre reinforced epoxy, trials of the prototype device will be presented.</p>	<p>INFUSION AND POLYMERIZATION OF THICK GLASS/ELIUM® ACRYLIC THERMOPLASTIC RESIN COMPOSITES Dr. Nihad Siddig Accelerating Wind Energy circular economy by manufacturing eco-designed and fully recyclable wind turbine blades, replacing thermosetting resins by recyclable thermoplastic resins.</p>	<p>CURE PATH SENSITIVITY OF SNAP-CURE PRE-PREGS FOR LAYER-BY-LAYER MANUFACTURING Mr. Robin Hartley This presentation will establish the relation between interfacial partial degree of cure and fracture toughness for a layer-by-layer manufacturing process</p>
<p>PARAMETER OPTIMISATION OF COMBINED PYROLYSIS AND OXIDATION FOR RECYCLING OF CFRP COMPOSITES Dr. Ali Hadigheh This paper investigates thermal degradation mechanism during recycling of CFRP composites under combined pyrolysis and oxidation.</p>	<p>INFLUENCE OF THE SURFACE ENERGY OF A BASALT FIBER ON CAPILLARY WICKING AND IN-PLANE PERMEABILITY Mr. Romain Ravel Study of the influence of the surface energy of a basalt fiber on the capillary pressure and permeability characterization</p>	<p>DAMAGE OF COMPOSITE SANDWICH STRUCTURES UNDER IMPACT Mr. George Iven Damage resulting from high-velocity impact of composite sandwich structures with toughened matrices. Highlighting the need for holistic design of structures.</p>	<p>MESOSCALE FULL-FIELD MEASUREMENTS FOR 3D PRINTED COMPOSITES UNDER DELAMINATION Ms. Alessandra Lingua Digital image correlation highlights the local damage mechanisms under mode I delamination for high-performance composites manufactured by fused filament fabrication.</p>	<p>COMPOSITE STRUCTURES IN LIGHTWEIGHT PHOTOVOLTAIC MODULES FOR VEHICLE INTEGRATION Mr. Rik Van Dyck Progress in weight reduction of photovoltaic modules for vehicle integrated applications</p>	<p>CONTINUOUS MANUFACTURING OF HYBRID AND RECYCLABLE FIBRE REINFORCED THERMOPLASTIC PROFILES WITH THERMOPLASTIC TOP LAYER COATING Mr. Niklas Lorenz A combination of pultrusion and extrusion process is investigated to functionalise thermoplastic pultruded profiles by inline application of thermoplastic coating.</p>
<p>LIFE CYCLE ASSESSMENT FOR COMPOSITE MATERIALS AND PROCESSES: RAISING OUR GAME Ms. Amy Fitzgerald Exploring the current landscape of LCA for composites focussing on data accuracy and how to deal with uncertainty and variation.</p>	<p>CORRELATION OF THE PERMEABILITY OF CARBON/CARBON COMPOSITES WITH THE POROSITY DURING THE CARBONIZATION PROCESS Ms. Tania Lavaggi The permeability of Carbon/Carbon composites is measured for the characterization of the optimal parameters for the densification process.</p>	<p>CONCURRENT TOUGHENING AND SELF-HEALING OF FIBER-COMPOSITE LAMINATES VIA 3D-PRINTED COPOLYMER INTERLAYERS Mr. Jack Turicek Fiber-reinforced polymer composites containing 3D printed thermoplastic interlayers that toughen and also enable repeated self-repair of interlaminar delamination.</p>	<p>LOW COST RAPID PROTOTYPING MANUFACTURING PROCESS FOR TAILORED FIBER PLACEMENT COMPONENTS Mr. Simon Konze Process for production of high quality complex shaped FRP prototypes with the aid of FFF printing and casted silicone molds.</p>	<p>MODE-I FRACTURE RESPONSE OF AN ADHESIVE-BONDED THERMOPLASTIC COMPOSITE AT LOW TEMPERATURE Mr. MILOŠ ŽIVKOVIC DCB testing and microscopic analysis of a unidirectional non-crimp fabric glass fiber reinforced acrylic composite bonded with a methacrylate adhesive</p>	<p>SIMULTANEOUS FORMING OF HYBRID COMPONENT CONSISTING OF ALUMINIUM SHEET AND CFRP BY CO-BONDING PRESSING PROCESS Ms. Shuang Wu Characterization of mechanical properties of a hybrid profile, which made of aluminium sheet and CFRP in a simultaneous forming process</p>
Wednesday Morning Tea / Coffee Break, Posters and Exhibition					
Recycling and sustainability - Session 2	Liquid composites moulding - Session 6	Damage tolerance - Session 2	Additive manufacturing - Session 2	Renewable Energy - Session 2	Composites Manufacturing and Processing - Session 2
<p>RECYCLING OF GLASS FIBRE THERMOSET COMPOSITES BY COLD INCORPORATION INTO A SUSTAINABLE GEOPOLYMER MATRIX Yixue Zhang Recycling and valorization of glass fibre thermoset composite waste by cold incorporation into a sustainable inorganic polymer matrix</p>	<p>TRANSVERSE PERMEABILITY OF ROVING-BASED FIBROUS MEDIA: INFLUENCE OF RESIN RICH LAYERS Mr. Onur Yuksel Influence of resin rich layers on transverse permeability of roving based fibrous structures</p>	<p>INFLUENCE OF DELAMINATION INTERFACE LOCATION ON COMPRESSION STRENGTH OF FULLY ISOTROPIC LAMINATES AFTER IMPACT Dr. Christopher York Low velocity impact damage experiments using circular and rectangular test apertures are compared for laminates with precisely matched stiffness properties.</p>	<p>3D PRINTING OF A GEOMETRY OPTIMIZED SANDWICH PANEL FOR A LUNAR ROVER'S FRAME Mr. Olivier Duchesne We developed a 2D cellular material optimization algorithm for 3D printing lighter structures</p>	<p>BIPOLAR PLATE USING HORIZONTALLY ALIGNED CNT FOR HIGH-PERFORMANCE VANADIUM REDOX FLOW BATTERIES Mr. Jae-Moon Jeong Bipolar plate using horizontally aligned CNT for high-performance Vanadium redox flow batteries</p>	<p>CONE STRUCTURES MADE USING 4D PRINTING OF COMPOSITES Prof. Suong Van Hoa It will be shown that cone shaped structures can be made without the need to use a mold with a cone shape. This is done using the technique of 4D printing of composites.</p>

Time	Main Auditorium	Studio	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
11:50 - 11:55	FAST EVALUATION OF THE FATIGUE PROPERTIES OF DIFFERENT CARBON COMPOSITE LAMINATES THROUGH HEAT BUILD-UP PROTOCOL Mr. Cédric Bain Application of fast prediction of different carbon fiber reinforced plastic laminated composites through self-heating and comparison to fatigue tests.	PROBABILISTIC SENSITIVITY STUDIES OF COMPOSITE DAMAGE MODELS Mr. David Riha Probabilistic sensitivity studies and model calibrations were performed to quantify uncertainties when predicting progressive damage of composite coupon experiments.	A STUDY ON THE EFFECT OF DELAMINATION DEFECTS ON DAMAGE MECHANISMS IN COMPOSITE TAPERED LAMINATES Dr. Lu Jin Analysis systematically of a research on damage characteristic in composites tapered laminates under cyclic loading with different stress ratio	COMPUTATIONALLY EFFICIENT FE MICROMECHANICAL MODELLING OF UNIDIRECTIONAL COMPOSITES UNDER LONGITUDINAL LOADING Dr. Dimitrios Bikos Workshop - Understanding and improving longitudinal compressive strength	QUALITY ASSESSMENT OF LIFE CYCLE INVENTORY DATA FOR COMPOSITES Mr. Badr Moutik Workshop - Life Cycle Inventory data quality for composites". The main objectives of the study: • To review several LCA data quality assessment methods. • To review the quality of composite materials data in the LCI databases and literature. • To consider the implication of composites DQA on composites comparative LCA product results. • To assess and integrate the DQA in the proxy selection methodology in LCI composite dataset.	THE SIMULATED LIGHTNING STRIKE INVESTIGATION ON NOVEL HYBRID LAMINATES COMPRISING POLYANILINE-BASED ELECTRICAL CONDUCTIVE MATRIX Dr. Yu Zhou A conductive polymer based hybrid laminate as a potential lightning strike protection for aircraft
11:55 - 12:10						
12:10 - 12:15	IDENTIFICATION OF SUBSURFACE DAMAGE IN MULTIDIRECTIONAL COMPOSITE LAMINATES USING FULL FIELD IMAGING Mr. Rafael Ruiz Iglesias It is a project which develops a novel full-field imaging methodology which combines TSA and DIC to identify damage as it evolves by creating non-adiabatic conditions in the composite laminate under cyclic loading.	COMPRESSIVE RESPONSE OF SELF-HEALING POLYMER FOAMS WITH BILAYERED CAPSULES: COUPLED DIFFUSION AND STRESS SIMULATIONS Dr. Tao Liu Modelling on self-healing materials	IMPROVED STRENGTH OF BOLTED JOINTS IN PULTRUDED FRP LAMINATES BY INTEGRATION OF LOCAL TEXTILE REINFORCEMENTS Mr. Simon Boysen Presentation of locally reinforced pultruded laminates by textile semi-finished products from the TFP process	NUMERICAL STUDY ON EFFECT OF FIBER WAVINESS ON MECHANICAL PROPERTIES OF UNIDIRECTIONAL COMPOSITE LAMINATES Mr. Takayu Nishioka This study investigates the effect of fiber waviness on the mechanical properties of unidirectional composite laminates by using an eXtended Finite Element Method (XFEM).	LCA ANALYSIS OF RECOVERING AND REUSING PROCESS SCRAPS IN CLOSED LOOP. A CASE STUDY Dr. Angela Daniela La Rosa The analysis aims to provide information on environmental and economic benefits of recycling the rejected parts of a production process	NUMERICAL SIMULATION OF THE BEARING FAILURE MECHANISM OF THIN-PLY FIBRE METAL LAMINATES Dr. Benedikt Koetter The study shows the results of the numerical FEM simulations of the bearing failure mechanisms of Thin-Ply Fibre-Metal-Laminates.
12:15 - 12:20						
12:20 - 12:30						
12:30 - 12:35	FIBRE BRIDGING EFFECTS IN COMPOSITE FRACTURE Mr. Orkid Ramekaj Large-scale fibre-bridging effects were characterised. A numerical model was implemented to explore these effects.					
12:35 - 12:40	INVESTIGATING THE GROWTH OF MATRIX CRACKS UNDER BIAXIAL STRAIN CONTROL FATIGUE USING CRUCIFORM SPECIMENS Prof. Christian Berggreen In this work, a cruciform specimen with a large biaxial gauge zone is used for studying the growth of matrix cracks under a stress state normally seen in structures.		BIAXIAL FAILURE ANALYSIS OF UNIDIRECTIONAL COMPOSITES Dr. Lei Wan A 3D high-fidelity FE model to reveal failure mechanisms of kinking under longitudinal compression and assessment of conventional failure criteria.	INVESTIGATION OF COMPOSITES UNDER COMPRESSION AT ISD: PAST, PRESENT AND FUTURE Dr. Nabeel Safdar This talk presents the research carried out at Institute of Structural Analysis, Leibniz University Hanover over previous years for compression failure of unidirectional fiber reinforced polymer laminates using numerical and experimental approaches.	ENVIRONMENTAL PRODUCT DECLARATION (EPD) AND THE BENEFIT FOR COMPOSITE MATERIALS Mr. Sebastiano Greco	MICROMECHANICS OF HYBRID COMPOSITE LAMINA WITH NATURAL AND SYNTHETIC FIBRES Mr. Nenglong Yang Investigating the effect of natural fibre-based yarn level hybridisation on the homogenised properties and stress distribution of 2D woven composites
12:40 - 12:45						
12:45 - 12:50						
12:50 - 12:55			PROBABILISTIC EVALUATION OF FILAMENT-WOUND COMPOSITE PRESSURE VESSELS UNDER MATERIAL UNCERTAINTY Dr. Carlos Cimini Junior Investigation surrounding probabilistic structural design of composite pressure vessels used in automotive applications			MULTI-OBJECTIVE MECHANICAL OPTIMISATION OF LATTICE STRUCTURES Miss. Athina Kontopoulou Through this study, the geometric characteristics of lattice topologies are optimised to achieve improved compressive and out-of-plane shear stiffnesses.

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan
<p>INVESTIGATION OF THE MECHANICAL- AND MOLECULAR PROPERTIES OF POLYPROPYLENE RECYCLAT Mr. Dominik Spancken Recyclates can be used successfully in highly stressed components and save 1.3 kilograms of CO2 per kilogram of material</p>	<p>NUMERICAL INVESTIGATION OF THE MOLD FILLING BEHAVIOR OF SANDWICH PARTS IN RESIN TRANSFER MOLDING Ms. Sarah Dietrich Mold filling simulations of Sandwich components considering the fluid-structure interaction between resin, fiber semi-finished product and foam core</p>	<p>A NEW METHOD OF UNDERWATER COMPOSITE IMPACT TESTING Mr. Rowan Caldwell A proposed methodology for the standardised underwater impact testing of composite laminate materials and preliminary impact results for carbon/ epoxy laminates.</p>	<p>MECHANICAL, SELF-SENSING, AND BIOLOGICAL CHARACTERIZATION OF 3D-ARCHITECTED MULTIFUNCTIONAL PEEK AND PEEK COMPOSITE SCAFFOLDS Mr. Johannes Schneider Additive manufacturing enabled three-dimensional cellular composites for biomedical applications</p>	<p>THERMAL MODEL TO AID THE DESIGN OF COMPOSITE STRUCTURES FOR HYDROGEN STORAGE Mr. Victor Kees Poorte A methodology to quantify the thermomechanical loading of a hydrogen storage vessel, evaluate refuelling time, including concrete examples.</p>	<p>ULTRASONIC WELDING OF CF/PEKK TO CF/EPOXY USING MACHINE LEARNING Dr. Vedant Modi Joining of dissimilar materials is optimised through machine learning</p>
<p>NEW CONCEPTS TO REDUCE THE ENVIRONMENTAL IMPACT OF FLOOR PANELS IN CIVIL AIRCRAFTS Mrs. Rebecca Emmerich New concepts for the use of recycled Carbon fibers in aircraft sandwich panels using the design for recycling method</p>	<p>ON THE TEXTILE-BASED COMPOSITE MESO-STRUCTURE SPATIAL VARIABILITY CHARACTERIZING AND GEOMETRIC MODELLING VIA VOLUME IMAGING Dr. Bin Yang</p>	<p>TOWARDS ANALYTICAL MODELLING OF COMPRESSION-AFTER-IMPACT STRENGTH Dr. Anton Köllner Developing analytical models to study the nonlinear buckling responses of damaged composite laminates towards damage tolerant design</p>	<p>DESIGN PROCESS FOR 4D PRINTED MOISTURE ACTUATED FLAX FIBRE REINFORCED POLYLACTIC ACID COMPOSITES. Mr. Charles de Kergariou Design Process for 4D printed moisture actuated flax fibre reinforced polylactic acid composites.</p>	<p>3D BULK CLOSED-CELL THERMOELECTRIC FOAMS FOR STRUCTURAL ELEMENTS OF LARGE-SCALE ENERGY HARVESTING SYSTEMS Mr. Wonvin Kim Fabrication of 3d bulk closed-cell thermoelectric foams for structural elements of large-scale energy harvesting systems</p> <p>FROM STEEL TO COMPOSITE: COST AND WEIGHT REDUCTIONS USING FILAMENT WINDING FOR WAVE ENERGY CONVERTERS Mr. Diogo Vale GFRP replaces steel for a key component in a wave energy converter, aiming to reduce cost and mass by 50%.</p>	<p>OUT-OF-OVEN MANUFACTURING FOR NATURAL FIBRE COMPOSITES WITH INTEGRATED DEFORMATION SENSING Miss. Yushen Wang This study develops an extremely energy efficient out-of-oven manufacturing method to fabricate natural fibre composites with integrated multi-functionalities.</p>
<p>THE CASE FOR SOLVOLYSIS IN COMPOSITE RECYCLING Dr. Callum Branfoot In this presentation we examine the strengths and weaknesses of solvolysis, and what industrial solvolysis may look like.</p>		<p>DAMAGE TOLERANCE OF DOUBLE-DOUBLE LAMINATES Prof. José Daniel D. Melo Damage resistance and damage tolerance of double-double carbon fiber reinforced laminate are evaluated and compared to the same properties of legacy laminate of equivalent in-plane stiffness.</p>	<p>IMPROVEMENT OF MECHANICAL PROPERTIES OF 3D-PRINTED CONTINUOUS FLAX FIBRE/POLY (LACTIC) ACID COMPOSITES BY IMPREGNATED-FILAMENT WITH SURFACE-TREATMENT Mr. Junming Zhang A research about the improvement of mechanical properties of 3d-printed continuous flax fibre/poly(lactic) acid composites by impregnated filament with surface treatment.</p>		<p>ON PROCESSING AND CHARACTERIZATION OF ALUMINIUM ALLOY-BASED TITANIUM DIBORIDE COMPOSITES. Dr. Jimmy Karloopia On processing and characterization of Aluminium alloy-based Titanium diboride composites</p>
		<p>NUMERICAL MODELLING OF THERMOPLASTIC COMPOSITE FUSELAGE PANELS VIA EXPERIMENTAL BUILDING BLOCK APPROACH Mr. Thomas Zaragkas Numerical and experimental investigation of thermoplastic composite fuselage panels at material, non specific and element level</p>	<p>DEVELOPMENT OF DCAFF (DISCONTINUOUS ALIGNED FIBRE FILAMENT) FOR 3D PRINTING Mr. Narongkorn Krajangsawasdi DcAff, a novel composite 3D printing material for the printing without headache</p>		<p>EMBEDDABLE FIBER-OPTIC-BASED SHAPE SENSOR FOR IN-SITU CONSOLIDATION MONITORING Assoc. Prof. Shu Minakuchi Presenting the first real-time measurement of ply deformation during autoclave consolidation of laminate with ply gap</p>
			<p>ADDITIVE MANUFACTURING OF THERMOSETTING COMPOSITES VIA REACTIVE EXTRUSION Prof. Mehran Tehrani Low energy and fast additive manufacturing of highly loaded thermosetting composites is demonstrated</p>		<p>COMBINING FUSED GRANULAR FABRICATION AND AUTOMATED FIBER PLACEMENT FOR THE RAPID PRODUCTION OF COMPLEX SANDWICH-STRUCTURES Mr. Fynn Atzler By combining fused granular fabrication of PEEK and automated fiber placement, aerospace-grade structures can be manufactured rapidly and cheaply.</p>
			<p>DEVELOPMENT OF A MANUFACTURING PROCESS FOR CONTINUOUS FIBRE REINFORCED PRINTING FILAMENTS Mr. Daniel Beermann The project is focused on the development of a manufacturing process for continuous fibre reinforced printing filaments via melt impregnation.</p>		<p>ENHANCING CARBON FIBRE PRODUCTION EFFICIENCY THROUGH LIFE CYCLE ANALYSIS Mr. Thomas Groetsch Using life cycle analysis techniques to uncover potential improvements of carbon fiber manufacture in early research stages</p>
<p>INFLUENCE OF RESIN'S CHEMISTRY ON THE BULK PROPERTIES OF CFRPS PROCESSED WITH RECYCLED CARBON FIBERS Dr. Souvik Chakraborty Influence of matrix chemistry in reuse of rCF as CFRPs with minimal downsizing.</p>			<p>FDM 3D PRINTING IN HIGH-PRESSURE OXYGEN AND PURE NITROGEN ATMOSPHERES & EVALUATION OF MECHANICAL PROPERTIES Mr. Yousuf Pasha Shaik Composites manufacturing by FDM 3D printing in autoclave high pressures of oxygen and nitrogen atmospheres and evaluation of their mechanical properties</p>		<p>PREDICTION OF PROCESS-INDUCED DEFORMATIONS USING DEEP LEARNING INTERFACED FINITE ELEMENT CONSTITUTIVE MODELS Mr. Aravind Balaji Prediction of Process-Induced Deformations using Deep Learning Interfaced Finite Element Constitutive Models</p>

Time	Main Auditorium	Studio	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A		
12:55 - 13:00			<p>FAILURE PREDICTION OF INJECTION-MOULDED SHORT-FIBRE COMPOSITES: CHARACTERISATION AND PREDICTION FROM COUPONS TO COMPONENTS Mr. Yuki Fujita</p> <p>Failure of injection-moulded polyamide-based SFRP components was accurately predicted by accounting for the finite fracture toughness of the materials</p>			<p>BIOINSPIRED MECHANICAL METAMATERIAL COMPOSITES BY ADDITIVE MANUFACTURING Dr. Sha Yin</p> <p>A strong and tough additive-manufactured dual-phase mechanical metamaterial composites inspired by precipitation hardening mechanisms observed in biological materials as well as engineering alloys</p>		
13:00 - 13:05			<p>DRAPABILITY EVALUATION OF ADHESIVE-BONDED NCF BY MEANS OF LOW-FIDELITY SIMULATION Mr. Rico Hubert</p> <p>The main learnings and approaches relevant to the scientific body will be presented.</p>	<p>BICONTINUOUS SILICA-EPOXY NANOCOMPOSITES Mr. Charles Shaw</p> <p>This presentation introduces monolithic mesoporous silica (silica aerogel) as a 3D continuous reinforcement for conventional thermoplastic resins.</p>		<p>LOW VELOCITY IMPACT BEHAVIOR OF THERMOPLASTIC GLASS FIBER COMPOSITES STRENGTHEN WITH STAINLESS STEEL MESH LAYERS Mr. Sepanta Mandegarjan</p> <p>The current paper investigates the response of hybrid woven glass fiber composites reinforced with metal mesh under low velocity impact.</p>		
13:05 - 13:10			<p>INTERACTIVE AND MODEL BASED DEVELOPMENT OF AN STRUCTURAL AND AERODYNAMIC COMPOSITE VANE FOR JET ENGINES Dr. Sebastian Spitzer</p> <p>The development process for a structural composite vane of a jet engine, based on model, method and date, is described</p>			<p>VIBRATION ISOLATOR OF QUASI-ZERO STIFFNESS METAMATERIALS WITH HIGH LOAD-CARRYING CAPACITY AND SELF-SENSING Mr. Hyunsoo Hong</p> <p>Vibration Isolator of Quasi-zero Stiffness Metamaterials with High Load-carrying Capacity and Self-sensing</p>		
13:10 - 14:10		Women in Composites Leadership	Lunch, Posters and Exhibition					
14:10 - 14:55	<p>KELLY PRIZE; ADVANCES IN COMPOSITE PRESSURE VESSELS FOR THE TRANSPORT AND AEROSPACE MARKETS, <i>Professor Luke P. Djukic,</i> Omni tanker Pty Ltd & University of New South Wales, Sydney, Australia, Plenary Lecture</p>							
14:55 - 15:00	Move to Concurrent Sessions							
15:00 - 16:00	Fatigue, fracture and damage - Session 10	Multiscale modelling - Session 5	Structural design criteria, safety and reliability - Session 3	Understanding & Improving Longitudinal Compressive Strength - Session 7	Nanocomposites - Session 5	Hybrid & metacomposites - Session 3		
15:00 - 15:20	<p>A METHOD FOR THE CALCULATION OF THE DYNAMIC FRACTURE TOUGHNESS BASED ON CRACK TIP KINEMATICS Mr. Georgios Kotsinis</p> <p>A method to obtain the fracture toughness of adhesive joints under high strain load rates is presented alongside experimentation</p>	<p>MORPHOLOGY ANALYSIS AND SHAPE OPTIMAL OF CFRTCP-SMC BASED ON MONTE-CARLO SIMULATION Mr. RUOCHEN</p> <p>XU Analyze morphology and tape shape of CFRTCP-SMC material by Monte-Carlo Simulation</p>		<p>MICROSTRUCTURAL ORIGINS OF THE COMPRESSION STRENGTH OF CARBON FIBRE Prof. Russell Varley</p> <p>This presentation will describe our latest work in controlling the microstructure of carbon fibre for enhanced compression strength and our subsequent efforts to translate this improvement to unidirectional composite materials.</p>	<p>HYBRID, MULTIFUNCTIONAL 3D PRINTED NANOCOMPOSITE STRAIN SENSORS Mr. Aaron Soul</p> <p>Using hybrid fillers to optimise the conductive network within nanocomposite filaments to produce 3d printed crush/strain sensors.</p>	<p>ELECTROMAGNETIC SHIELDING EFFECTIVENESS OF HYBRID FIBRE REINFORCED COMPOSITES SUBJECTED TO LOW VELOCITY IMPACT Mr. Mateusz Siwak</p> <p>Electromagnetic Shielding Effectiveness of Hybrid Fibre Reinforced Composites Subjected to Low Velocity Impact</p>		
15:20 - 15:40	<p>EXPERIMENTAL STUDY ON MODE-I DELAMINATION OF THERMOPLASTIC COMPOSITES USING DIGITAL IMAGE CORRELATION AND ACOUSTIC EMISSION Ms. Javane Karami</p>	<p>EFFECT OF MICROSTRUCTURAL DAMAGE ON THE THERMOMECHANICAL PROPERTIES OF COMPOSITE ELECTRODES IN PEMFC Dr. Cong Feng</p>		<p>PURE SHEAR AND COMPRESSION-SHEAR CHARACTERISATION OF POLYMER MATRIX FOR CARBON FIBRE COMPOSITES Dr. Bohao Zhang</p> <p>This work investigated the shear response of polymer matrix under pure shear and compression-shear deformation for the finite element modelling of unidirectional composites in compression.</p>	<p>LOW TEMPERATURE PLASMA ENHANCED GROWTH OF CARBON NANOSTRUCTURES ON QUARTZ FIBRES Ms. Genevra Lalle</p> <p>The growth of carbon nanostructures via plasma enhanced chemical vapour deposition is investigated at low temperatures on quartz fibres</p>			

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan
<p>MECHANICAL RECYCLING OF FLAX, BASALT AND HYBRID POLYPROPYLENE COMPOSITES Dr. Claudia Sergi</p> <p>Assessment of the mechanical and thermal response of polypropylene flax, basalt and hybrid composites after several mechanical recycling cycles .</p>			<p>STUDY ON THE INFLUENCE OF PROCESS PARAMETERS ON SURFACE PROPERTIES OF ADDITIVELY MANUFACTURED PARTS Mrs. Sara Varetto</p> <p>Use of surface roughness as control parameter of physical and mechanical properties of 3D printed parts</p>		<p>MANUFACTURING AND AGING OF TOUGH EPOXY COMPOSITE MATRICES Dr. Alexander Fergusson</p> <p>Aging of toughened polymers for composite matrices show a decline in toughness with age.</p>
<p>COMPOSITE BOARD MADE OF RECYCLED FIBERGLASS Mr. Petr Böhm</p> <p>The presentation is about the recycling of GFRP waste into composite board suitable for construction purposes.</p>					<p>INFLUENCE OF IMPREGNATION DIE SETUP ON THE PROPERTIES OF UNIDIRECTIONAL THERMOPLASTIC TAPES Mr. Thomas Höftberger</p> <p>Influence of a waved extrusion die channel on the impregnation quality of thermoplastic unidirectional carbon fibre tapes</p>
<p>EFFECT OF POST-RECYCLING TREATMENT AND STORAGE ON GLASS FIBER QUALITY Ms. Asifa Awan</p> <p>Investigation of impact of re-sizing and storage of glass fibers on mechanical properties and surface chemistry</p>			<p>IMPROVEMENT OF MECHANICAL PROPERTIES OF 3D-PRINTED CONTINUOUS FLAX FIBRE/POLY (LACTIC) ACID COMPOSITES BY IMPREGNATED-FILAMENT WITH SURFACE-TREATMENT Mr. Junming Zhang</p> <p>A research about the improvement of mechanical properties of 3d-printed continuous flax fibre/poly(lactic) acid composites by impregnated filament with surface treatment.</p>		

Lunch, Posters and Exhibition

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Move to Concurrent Sessions

Recycling and sustainability - Session 3	Advanced manufacturing and automation - Session 5	Composites General - Session 2	Additive manufacturing - Session 3		
<p>PREDICTION OF STRENGTH AND ITS VARIATION OF CARBON FIBER MAT REINFORCED THERMOPLASTICS USING MONTE-CARLO METHOD Ms. Qian Gao</p> <p>This work provides a novel method to predict tensile properties based on 3D fiber network model and Monte-carlo simulation.</p>	<p>HRCEV: HIGH RATE COMPOSITES FOR ELECTRIC VEHICLES Ms. Catherine Yokan</p> <p>The HRCEV project enables rapid and cost-effective production of composite EV battery enclosures by exploiting novel material and process technologies.</p>	<p>INVESTIGATION OF UNEQUAL PITCH BALL-END MILLING CUTTER FOR CHATTER SUPPRESSION IN THIN-WALL CFRP SURFACE MILLING Mr. Jun Deng</p>	<p>THICKNESS CONTROL OF SNAP CURE PREPREGS IN AUTOMATED PLACEMENT CONDITIONS Mr. Axel Wowogno</p> <p>This study offers knowledge on composite manufacturing topics by combining alternative material characterisation, modern processing techniques and process parameters analysis.</p>		
<p>SURFACE PROPERTIES ASSESSMENT OF RECLAIMED CARBON FIBRES FOR RECYCLING IN PA6/CF COMPOSITES Mr. Louis Jeantet</p> <p>Are carbon fibres reclaimed from aircraft parts fit for reuse in high performance applications?</p>	<p>3D PRINTING OF FULLY RECYCLABLE CONTINUOUS FIBER SELF-REINFORCED COMPOSITES AND THERMAL DEGRADATION MECHANISM Dr. Manyu Zhang</p>		<p>3D PRINTING OF CONTINUOUS CARBON FIBER REINFORCED THERMOPLASTIC: RELATIONSHIP BETWEEN CROSS-POINTS DISTANCE AND TENSILE PERFORMANCE Mr. Gongshuo Wang</p> <p>3D Printing of Continuous Carbon Fiber Reinforced Thermoplastic: Relationship Between Cross-points Distance and Tensile Performance</p>		

Time	Main Auditorium	Studio	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
15:40 - 15:45						<p>METAL-CFRP T-JOINT WITH 3D PRINTED AUXETIC METAL STIFFENER Dr. Ahmed Wagih</p> <p>This work presents a new design of hybrid metal-CFRP T-joints with enhanced strength and toughness by providing a 3D printed auxetic stiffener</p>
15:45 - 15:50	<p>ESTIMATION OF THE LIFE TIME OF 3D-PRINTED CONTINUOUS FIBER-REINFORCED COMPONENTS Prof. Gerald Pinter</p> <p>A work flow for the fatigue assessment of 3D-printed continuous fiber-reinforced components</p>		<p>COUPLED STRESS ENERGY CRITERION FOR COMPOSITE MATERIALS Dr. Thiago Vasconcellos Birro</p> <p>The coupled stress-energy criterion application to predict the strength and failure of composite plates with open and filled holes</p>	<p>TIME RESOLVED IMAGING OF LONGITUDINAL COMPRESSIVE FAILURE OF POLYMER COMPOSITES BY SYNCHROTRON X-RAY IMAGING Prof. Philip Withers</p> <p>In this talk I will present X-ray radiography and computed tomography sequences looking at the progressive fibre misorientation, buckling and fibre fracture prior to, and during, kink band formation during progressive compressive loading of unidirectional and cross-play laminated C fibre composites.</p>	<p>GRAPHENE OXIDE/POLYVINYL ALCOHOL COMPOSITE HYDROGELS WITH RADIAL STRUCTURE FOR SOLAR STEAM GENERATION Miss. Xiaomeng Zhao</p> <p>Design Photothermal hydrogels for high water evaporation rate</p>	
15:50 - 15:55						
15:55 - 16:00						
16:00 - 16:30	Wednesday Afternoon Tea / Coffee Break, Posters and Exhibition					
16:30 - 18:30	ICCM General Assembly					

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan
<p>THERMALLY ASSISTED PEELING AS A HIGH-QUALITY DISASSEMBLY PROCESS FOR THERMOPLASTIC TAPE WOUND COMPOSITES Dr. Mathieu Imbert Thermally assisted peeling is used to disassemble unidirectional thermoplastic composites and allows recovering tapes with preserved tensile properties.</p>	<p>DIGITALISATION OF RESIN TRANSFER MOULDING (RTM) IN COMPOSITE MANUFACTURING Mr. Anto Antony Samy</p>	<p>MULTI-MODAL IMAGING FOR POROSITY QUANTIFICATION IN PARTIALLY-IMPREGNATED NON-CRIMP GLASS FIBER/POLYPROPYLENE COMPOSITES Mr. Sujith Kumar SIDLIPURA RAVI KUMAR The current work, suggests combination of different imagery techniques to observe the same structure for higher fidelity porosity quantification</p>	<p>METHODOLOGY FOR THE EXPERIMENTAL CHARACTERIZATION OF PHYSICO-MECHANICAL PROPERTIES OF 3D-PRINTED POLYMER MATERIALS Dr. Andrey Aniskevich Aim of the research was to develop a methodology of complex experimental characterization of smart polymer materials, produced by 3D printing technology.</p>		
<p>OPTIMIZATION OF MANUFACTURING PROCESS FOR RECYCLED THERMOPLASTIC COMPOSITES BASED ON FLAKE GEOMETRY Mr. Yoon-Bo Shim</p>	<p>THE EFFECT OF PROCESSING PARAMETERS ON THE INTERLAMINAR PROPERTIES OF AUTOCLAVE CURED GLASS FIBRE/EPOXY COMPOSITES Mr. Gergo Zsolt Marton Glass/epoxy laminates were manufactured in autoclave with various cure cycles and the fibre volume fraction and interlaminar properties were studied.</p>	<p>NUMERICAL ANALYSIS OF POROSITY FORMATION WITHIN THERMOPLASTIC COMPOSITES UNDERGOING THERMAL DECOMPOSITION AT HIGH TEMPERATURES Mr. David Philippe Numerical modelling and experimental observations of the thermal decomposition of thermoplastic composites at high temperatures</p>	<p>STRENGTHENING MECHANISM OF SILICON CARBIDE GREEN BODY VIA CELLULOSE NANOFIBER ADDITION Mr. Teruyoshi Kanno Ceramic green body fabricated by robocasting can be strengthened by adding cellulose nanofiber and drying at room temperature.</p>		
<p>EVALUATION OF RECYCLABILITY THROUGH PYROLYSIS OF COMPOSITE LASHING BAR. Jae Yang Kim Pyrolysis was carried out to confirm the thermal stability of CFRP and to evaluate the recyclability after use.</p>		<p>OPTIMISING FORMING PROCESS BEHAVIOR USING ARTIFICIAL INTELLIGENCE Mr. Muhammad Shahrukh Saeed Optimising Process Behavior Using Artificial Intelligence</p>	<p>FABRICATION, MECHANICAL CHARACTERIZATION, AND 3D-PRINTING OF SHORT GLASS FIBRE REINFORCED POLYCARBONATE COMPOSITE FILAMENTS Ms. Farimah Tikhani My study demonstrates how the filament quality can affect the 3D-printing quality and investigates the effects of short glass fibres on the performance of filaments of polycarbonate, as a general engineering polymer, for 3D-printing of advanced components.</p>		
<p>DEVELOPMENT OF RECYCLED PLASTIC WASTES CHIPS AND ALOEVERA FIBRE SANDWICH CARDANOL OIL-POLYESTER COMPOSITE Dr. Hassan Alshahrani The developed composites are highly resistance to flammability and smoke emissivity</p>		<p>COUPLING CHARACTERISTICS OF ASYMMETRIC CFRP OPEN CHANNEL STRUCTURE FOR ARTIFICIAL FOOT MS Ayumi Yamamoto Artificial foot part that realizes compression-torsion deformation by material deformation</p>	<p>RESIDUAL STRESSES IN ADDITIVELY MANUFACTURED THERMOSETTING COMPOSITES Mr. Francesco Taddei Numerical analysis investigating the influence of partial curing on residual stresses generation during the additive processing of thermosetting composites</p>		
Wednesday Afternoon Tea / Coffee Break, Posters and Exhibition					
ICCM General Assembly					

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A	
08:35 - 09:20	ACCELERATING THE ROLE OF MODELING AND SIMULATION IN COMPOSITES MANUFACTURING <i>Prof. Suresh Advani</i> , University of Delaware Plenary Lecture							
09:20 - 09:50	ON THE WAY TO A COST AND MASS EFFECTIVE UPPER STAGE FOR ORBITAL CLASS LAUNCH VEHICLES <i>Dipl.-Ing. Markus Quadt</i> , ArianeGroup, Bremen, Keynote address	3D AND 4D X-RAY IMAGING OF COMPOSITE BEHAVIOUR <i>Regius Prof. Philip J Withers</i> , Henry Royce Institute & University of Manchester, Keynote address						
9:50 - 10:00	Move to Concurrent Sessions							
10:00 - 11:00	Fatigue, fracture and damage - Session 11	Sustainable composites - Session 1	Recycling and sustainability - Session 4	Strain measurement techniques - Session 1	Understanding & Improving Longitudinal Compressive Strength - Session 8	Properties of composites - Session 1	Fibre reinforced composites - Session 1	
10:00 - 10:20	EFFECT OF FIBRE ORIENTATION ON COMPRESSION MICROMECHANICS IN CFRP INVESTIGATED BY COMPUTED TOMOGRAPHY Ms. Katherine Nelms	NATURAL FABRICS AND BIODEGRADABLE POLYMERS FOR THE MANUFACTURE OF ENVIRONMENTALLY FRIENDLY COMPOSITE MATERIALS Dr. Irene Bavasso A comprehensive analysis of mechanical properties and thermal stability of PLA/PBAT/FLAX and PLA/PBAT/JUTE composite laminates is presented.	AN ECONOMICAL AND ENVIRONMENTALLY FRIENDLY CFRP RECYCLING SYSTEM THAT RECOVERS BOTH CARBON FIBER AND RESIN Ms. Asuka Sakai This research designed a recycling system that could recover both carbon fibers and resin from CFRP with improved physical properties.	DIRECT LOAD SENSOR PRINTING TECHNOLOGY FOR COMPOSITE STRUCTURAL HEALTH MONITORING APPLICATIONS Dr. Noel Harrison This study investigates a direct printing technology for load sensors in composite structural health monitoring applications	EXPERIMENTAL CHARACTERISATION OF THE DILATION ANGLE OF POLYMERS Dr. Gustavo Quino The presentation introduces a novel experimental methodology to measure the dilation angle parameter, relevant to accurately account for plastic dilatation.	TENSILE AND IMPACT PROPERTIES OF MELT-BLENDED NYLON 6/ETHYLENE-OCTENE COPOLYMER/GRAPHENE OXIDE NANOCOMPOSITES Dr. Suhail Attar This work presents the characterization of tensile and impact properties of novel nylon 6/ethylene-octene-copolymer/graphene oxide-based nanocomposites.	TOUGHENING ADHESIVE JOINTS BY LASER-PATTERNING INDUCED BRIDGING Prof. Gilles Lubineau We create ultra-tough and ductile CFRP/CFRP secondary bonding using ligaments triggered by laser-patterning the adherends surface.	
10:20 - 10:40	EVALUATION OF SUBSURFACE DAMAGE ON STRUCTURAL SCALE WITH INTEGRATED FULL FIELD APPROACHES Mr. Geir Olafsson Fusion of surface only DIC data with TSA data to reveal subsurface features such as wrinkle defects caused inherent to many realistic complex structural geometries	PACKAGING WASTE DERIVED BIOCHAR REINFORCED 3D PRINTED BIOPOLYMER COMPOSITE FILMS AND THEIR MECHANICAL PROPERTIES Prof. Vijaya Rangari The sustainable polymer composite was prepared by using a plasticizer-free thermoplastic material that contains polyester and starch, which is biological sourced material, is reinforced with biochar derived from packaging waste.	MECHANICAL RECYCLING OF HIGH-PERFORMANCE FIBER REINFORCED POLYPHTHALAMIDE Ms. Morgan Chamberlain Fiber reinforced polyphthalamide was repeatedly recycled, injection molded, and tested for impact on mechanical and microstructural properties.	FAILURE CHARACTERIZATION OF ADHESIVELY BONDED COMPOSITE JOINTS USING A MODIFIED ARCAN FIXTURE Mr. David Brearley Investigation into if a MAF rig can obtain the interfacial strength of the joint between parts of a MRI magnet	COMPRESSIVE CHARACTERISATION OF SINGLE CARBON FIBRES AND THEIR INTERFACE VIA IN SITU RAMAN SPECTROSCOPY Mr. Cameron Woodgate The presentation will discuss the use of in-situ Raman spectroscopic stress measurement techniques for investigating the compressive behaviour of single carbon fibres and their interface.	CRYSTALLISATION STUDIES ON NEAT PEKK AND CARBON FIBRE/PEKK COMPOSITES Ms. Helena Pérez-Martín Study of the crystallisation behaviour, morphology, kinetics and modelling of unreinforced PEKK and carbon fibre-PEKK composite.	COMPARATIVE EVALUATION OF THE COMPRESSIVE BEHAVIOR OF MODULAR COMPOSITE WALL WITH AND WITHOUT SHEATHING Mr. Arvind Sharda This study proposed a modular FRP load bearing wall system that can minimise the dead load of the structure.	
10:40 - 11:00	MODELING OF HIGH-VELOCITY IMPACT BEHAVIOUR OF SANDWICH STRUCTURES UNDER BIRD STRIKE LOADING Mrs. Wenxin Zhang	ELECTRICALLY CONDUCTIVE BIO-COMPOSITES BASED ON PHBV AND WOOD-DERIVED CARBON FILLERS Mr. Matthias Mihalic Mechanical and electrical properties of bio-composites based on PHBV and bio-based carbon fillers	COST BENEFIT AND LIFE CYCLE ANALYSIS OF RECYCLING PATHWAYS OF CFRP WASTES Dr. Ali Hadigheh This research provides CBA and LCA results for seven CFRP waste treatment	INFLUENCE OF FIBRE-BRAGG-GRATING STIFFNESS ON IN-SITU MEASUREMENTS OF CURE-INDUCED SHRINKAGE IN THERMOSETS Mr. Jesper Kjaer Joergensen Measurements of cure-induced strains in thermosets and the influence of stiffness of measurement objects.	INVESTIGATION OF COMPRESSIVE BEHAVIOUR OF GLASS/CARBON FIBRE HYBRID COMPOSITE WITH 4-POINT FLEXURAL TEST Miss. Aree Tongloet How hybrid composite concept can increase compressive failure strain of unidirectional carbon/epoxy observed by 4-point flexural test	IS THE STANDARD FOR TENSILE TESTING OF UNIDIRECTIONAL COMPOSITES OPTIMAL? Dr. Babak Fazlali This work utilizes FE analysis to examine potential end tab designs to perform reliable tensile test of UD composites.		
11:00 - 11:30	Thursday Morning Tea / Coffee Break, Posters and Exhibition							
11:30 - 13:10	Nanocomposites - Session 6	Sustainable composites - Session 2	Recycling and sustainability - Session 5	Strain measurement techniques - Session 2		Properties of composites - Session 2	Fibre reinforced composites - Session 2	

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2

Move to Concurrent Sessions

Composites Design - Session 1	Automated fibre & tape placement - Session 1	Textile-based & 3D composites - Session 1	Additive manufacturing - Session 4	Experimental methods for process characterization - Session 1	Smart composite materials and structures - Session 1	Interfaces and interphases - Session 1	Nondestructive evaluation - Session 1
<p>A DIGITAL SHADOW OF FILAMENT WOUND LIGHTWEIGHT COMPONENTS Mr. Kumar C. Jois A digital shadow of filament wound lightweight components</p>	<p>TWO-DIMENSIONAL FINITE DIFFERENCE BASED DATA-DRIVEN THERMAL MODELING OF IN-SITU AUTOMATED FIBRE PLACEMENT Mrs. Allyson Fontes The computational time required to predict the thermal history of in-situ Automated Fiber Placement is improved via neural networks.</p>	<p>DAMAGE IN TEXTILE COMPACT TENSION AND COMPRESSION SPECIMENS: A NUMERICAL AND EXPERIMENTAL STUDY Dr. David Mollenhauer Textile notched composites loaded in tension or compression are examined both experimentally and numerically</p>	<p>OVERPRINTING OF LARGE-SCALE THERMOPLASTIC COMPOSITES IN FGF-PROCESS USING LOCAL PREHEATING Mr. Lukas Raps Development and evaluation of local preheating of thermoplastic substrates during robotic FGF printing to enable large-scale overprinting of organosheets</p>	<p>AN IN-SITU PEEL TEST FOR CHARACTERIZING PREPREG TACK AS APPLIED TO AUTOMATED FIBER PLACEMENT Prof. Anoush Poursartip An in-situ peel test for characterizing prepreg tack as applied to automated fiber placement is developed and results are discussed.</p>	<p>MORPHING SKINS BASED ON CURVED ORIGAMI WITH PROGRAMMABLE STIFFNESS Prof. Jian Sun Morphing skins based in SMP curved origami</p>	<p>THE MICROBOND TEST - RUBBISH IN = RUBBISH OUT? THE CURE STATE OF EPOXY MICRODROPLETS Prof. Jim Thomason The microbond test is important to characterising interface performance. However, there are many pitfalls in the preparation of appropriate samples.</p>	<p>ULTRASOUND DETECTION OF ANOMALIES IN MULTI-LAYERED FIBRE-REINFORCED POLYMERS Dr. Wei Siang Sum Investigates the application of UT to detect anomalies within multi-layered systems consisting of layers of polyethylene and fibre-reinforced polyethylene</p>
<p>COMPOSITE AIRCRAFT CERTIFICATION, TSAI'S MODULUS - DD CASE STUDY Dr. Naresh Sharma Introduction to a new-class of laminates in double-double</p>	<p>STEERING LIMITATIONS FOR IN-SITU AUTOMATED FIBRE PLACEMENT-MANUFACTURED STRUCTURES Mr. Lukas Raps Investigation of different steering radii and arc lengths with respect to resulting defects and width variations for in-situ manufactured structures.</p>	<p>HIERARCHICALLY STRUCTURED MULTI-LAYER COMPOSITE ELECTRODE FOR FLEXIBLE INTERCALATED SUPERCAPACITORS Prof. Hani E Naguib A multi-step fabrication technique that led to the creation of desirable multi-layered hierarchical architecture for intercalation-driven charge storage in supercapacitor electrodes.</p>	<p>3D PRINTING AND IN-SITU THERMAL CURING OF CONTINUOUS FIBER-REINFORCED THERMOSET COMPOSITES Mr. Carter Dojan A novel method is developed for additive manufacturing and in-situ thermal curing of continuous fiber-reinforced thermoset composites.</p>	<p>A DEGREE OF BONDING EVOLUTION STUDY OF CO-CONSOLIDATED PEEK/PEI COMPOSITE MATERIALS DURING WELDING Mr. Romain Georges Martin Presentation of a methodology to evaluate the evolution of the degree of intimate contact during welding process of thermoplastic composites</p>	<p>CONDUCTIVE SMART NANOCOMPOSITE MATERIALS FOR STRUCTURAL HEALTH MONITORING AND MOTION DETECTION Dr. Olalla Sanchez-sobrado Carbon based polymeric nanocomposite materials for Structural Health Monitoring and Body Motion Detection</p>	<p>FIBER MATRIX ADHESION AND THERMAL STABILITY OF HDPE/GLASS FIBER COMPOSITES Dr. Adam Pearson The combined effects of a thermal stabilizer and compatibilizer on the interfacial adhesion and thermal stability of HDPE/Glass Fiber composites</p>	<p>3D FIBRE ARCHITECTURE CHARACTERISATION FOR DISCONTINUOUS CARBON FIBRE COMPOSITE STRUCTURES USING COMPUTED TOMOGRAPHY TECHNIQUE Dr. Connie Qian XCT scans are employed for measuring the fibre orientation in carbon fibre SMC and the data are used to validate process simulation</p>
	<p>COMPUTATIONALLY EFFICIENT FINITE ELEMENT PLATFORM FOR MODELLING AUTOMATED FIBRE PLACEMENT Mr. Sarthak Mahapatra The use of process modelling to predict defects in toughened prepreg, linked to the material's in-plane shear and tack behaviour during the AFP deposition process.</p>	<p>ROLE OF FIBER ARCHITECTURE IN MODE-I FRACTURE TOUGHNESS Prof. Pavana Prabhakar We present Mode-I fracture toughness studies on architected woven composites to elucidate how the weave architectures dictate crack propagation mechanics.</p>	<p>ADDITIVE MANUFACTURING OF REGENERATED CELLULOSE (LYOCELL) Prof. Cagri Ayranci Additive manufacturing of regenerated cellulose.</p>		<p>EXPERIMENTAL AND NUMERICAL INVESTIGATION OF SHAPE MEMORY ALLOYS HYBRID COMPOSITES WITH ELASTOMERIC INTERFACE Mr. Gregorio Pisaneschi A numerical and experimental investigation of the adhesion behavior of SMA wires embedded in a composite with an elastomeric interface</p>	<p>HOW SEMI-CURED INTERFACES FORM Mr. Michael O'Leary We explore how interfaces form in a multistage semi-curing process involving the integration of partially cured elements with dry fabric</p>	<p>WAVELET ANALYSIS METHOD FOR DEFECTS DETECTION IN CFRP COMPOSITES WITH FULLY NON-CONTACT LAMB WAVES PROPAGATION Mrs. Lea Lecointre Development of a Signal Processing method for defects detection in CFRP with fully non-contact Lamb Waves propagation</p>

Thursday Morning Tea / Coffee Break, Posters and Exhibition

Composites Design - Session 2	Automated fibre & tape placement - Session 2	Textile-based & 3D composites - Session 2	Additive manufacturing - Session 5	Experimental methods for process characterization - Session 2	Smart composite materials and structures - Session 2	Interfaces and interphases - Session 2	Nondestructive evaluation - Session 2
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Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
11:30 - 11:50	<p>MICROMECHANICS OF REINFORCEMENT OF POLYMERS FROM 2D MATERIALS BEYOND GRAPHENE</p> <p>Dr. Dimitrios Papageorgiou</p> <p>The stress transfer mechanisms from a polymer matrix to two-dimensional (2D) reinforcements such as MoS₂ and MXenes will be presented.</p>	<p>LIGHTWEIGHT SUSTAINABLE CARBON-FLAX HYBRID COMPOSITES WITH POLYBENZOXAZINE VITRIMER</p> <p>Mr. Killian Bourdon</p> <p>Study of the properties of carbon, flax and hybrid fibres composites with polybenzoxazine vitrimer</p>	<p>MECHANICAL SIEVING OF CARBON-FIBRE/PEEK PREPREG TRIM WASTE AND ITS INFLUENCE ON COMPRESSION MOULDED PANEL PROPERTIES</p> <p>Dr. Adam Smith</p> <p>A study on the mechanical sieving of Carbon-fibre / peel prepreg trim waste and its influence on compression moulded panel properties</p>	<p>EVALUATION OF INFRARED WELDED JOINTS OF SHORT FIBER REINFORCED THERMOPLASTICS USING DIGITAL IMAGE CORRELATION</p> <p>Mr. Lucas Schraa</p> <p>The aim is to demonstrate the capabilities and limitations of optical strain measurement for infrared welded short fiber reinforced thermoplastics.</p>		<p>MONITORING THE PROPERTIES OF CEMENTITIOUS COMPOSITE MATERIALS WITH ADVANCED FUNCTIONALITIES</p> <p>Miss. Aikaterini Gkaravela</p> <p>This study investigates the influence of CNTs & CFs in the electrical and mechanical properties of cement based composite materials.</p>	<p>DEVELOPMENT OF GRAPHENE-HYBRID COMPOSITE HYDROGEN PRESSURE TANK FOR GAS STORAGE APPLICATION</p> <p>Dr. Izzat Thiyahuddin</p> <p>Outcome in the development of Graphene-hybrid composite utilizing the in-line graphene coating technique for compressed Hydrogen pressure tank is presented</p>
11:50 - 12:10	<p>OUT-OF-AUTOCLAVE COMPOSITE MANUFACTURING USING CAPILLARY EFFECTS OF ELECTROSPUN AND AEROGEL NANOPOROUS NETWORKS</p> <p>Ms. Alisa Webb</p> <p>Using aerogel and electrospun nanoporous networks to manufacture aerospace grade autoclave composites without an autoclave</p>	<p>TOWARDS GREENER COMPOSITES : ARE POLYHYDROXYURETHANES SUITABLE FOR NATURAL FIBERS COMPOSITES?</p> <p>Mr. Guillem Seychal</p> <p>We propose a new kind of CO₂- bio-based polymer specifically design for natural fibers composites with high performances and reprocessable</p>	<p>ENVIRONMENTAL IMPACT ASSESSMENT AND PROPERTIES OF PHBH-ALUMINA NANOWIRE NANOCOMPOSITES</p> <p>Dr. Maider Iturrondobeitia</p> <p>Properties and environmental assessment of PHBH polymer and composites life cycle compared to petrobased common polymers by LCA and acute toxic test</p>	<p>INCORPORATION OF TRACER PARTICLES: A PREREQUISITE FOR DIGITAL VOLUME CORRELATION OF UD FIBRE-REINFORCED COMPOSITES</p> <p>Mr. Thanasis Chatziathanasiou</p> <p>Introducing DVC and its prerequisites for UD fibre-reinforced composites, focusing on quantitative dispersion assessment of tracer particles</p>		<p>ELECTRICAL CONDUCTIVITY CHARACTERISATION OF STOCHASTIC ZIGZAG PATHS IN UNIDIRECTIONAL C/PAEK</p> <p>Mr. Yannick Buser</p> <p>On current flow in a stochastic network of tortuous carbon fibres and how to characterise it</p>	<p>JOINING AND REPAIR CAPABILITIES OF VITRIMER EPOXY CARBON FIBRE REINFORCED POLYMERS (VCFRPS)</p> <p>Dr. Oriol Gavalda Diaz</p> <p>The aim of this work is to provide a systematic approach to assess the joining and repair capabilities of different epoxy vitrimer-based fibre composites to promote their potential application to industry.</p>
12:10 - 12:15							
12:15 - 12:20	<p>IN SITU SYNCHROTRON COMPUTED TOMOGRAPHY FRACTURE TESTING OF LAMINATES WITH CARBON NANOTUBE INTERLAMINAR REINFORCEMENT</p> <p>Mr. Steven Serrano</p> <p>In Situ Synchrotron Computed Tomography Fracture Testing of Laminates with Carbon Nanotube Interlaminar Reinforcement</p>	<p>PRESSING-AND-FOLDING OF DISCONTINUOUS LONG FIBRE COMPOSITES AS AN ALTERNATIVE TO DIRECT COMPACTION AND EXTRUSION COMPRESSION-MOULDING</p> <p>Mr. Richard Groves</p> <p>An alternative processing method focused on the preservation of fibre length for recycled discontinuous long fibre composites.</p>	<p>FIBRE LENGTH DISTRIBUTION MEASUREMENT OF RECLAIMED DISCONTINUOUS CARBON FIBRES TO ASSESS CHOPPING PROCEDURES</p> <p>Mr. Patrick Sullivan</p> <p>Use of partly automated fibre length distribution measurement to assess chopping and performance of reclaimed carbon fibres.</p>	<p>INFLUENCE OF CHARGE SHAPE ON THE HETEROGENEOUS MECHANICAL RESPONSE OF CARBON FIBRE SHEET MOULDING COMPOUNDS</p> <p>Mr. Henri Schwalm</p> <p>A closer look at long discontinuous fibre Digital Image Correlation strain fields and how they can be influenced during processing.</p>		<p>BURST PRESSURE OF COMPOSITE CYLINDERS USING ELASTOMERIC INSERTS</p> <p>Prof. Sandro Amico</p> <p>Experimental evaluation of hoop strength of cylinders using a practical and safe burst pressure test in an universal testing machine</p>	<p>NOVEL PROCESSING ROUTE FOR PET-GF COMPOSITE MANUFACTURING VIA SOLID STATE POLYMERISATION</p> <p>Mr. Oliver Vetterli</p> <p>Novel processing route for PET-GF composite manufacturing via solid state polymerisation</p>
12:20 - 12:25							
12:25 - 12:30							

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
<p>GUIDELINES FOR TEST CONDITIONS AND DOCUMENTATION OF BUCKLING EXPERIMENTS WITH CYLINDRICAL CFRP SHELLS Mr. Stefan Panek</p> <p>Development of guidelines for buckling tests with cylindrical composite shells based on an analysis of the published experimental database.</p>	<p>A STUDY ON CONSOLIDATION OF THERMOPLASTIC COMPOSITES WITH IN-SITU AUTOMATED FIBER PLACEMENT PROCESS Dr Elena Rodriguez Senin</p> <p>A study on consolidation of thermoplastic composites with In-Situ Automated Fiber Placement, considering the parameters and equipment of the process.</p>	<p>MICRO-DAMAGE EVOLUTION IN HYBRID CARBON/STEEL KNITTED AND WOVEN FABRIC COMPOSITES Mr. Anish Nirajan Kulkarni</p> <p>Experimental analysis of micro-damage evolution in carbon/steel hybrid textile composites under mechanical tensile loading for potential use in aerospace industry</p>	<p>MANUFACTURING OF POLYPHENYLENE SULFIDE (PPS)-POLYCARBONATE (PC) BLENDS FOR FUSED FILAMENT FABRICATION Dr. Shikha Singh</p> <p>Additive manufacturing of polyphenylene sulfide (PPS) and polycarbonate (PC) polymers will be carried out for high performance applications.</p>	<p>SILICA AEROGEL DERIVED FROM TMCS AND HMDZ Silylating AGENTS FOR RESERVOIR FLOATING COVER APPLICATION Assoc. Prof. Muhammad Azizi Mat Yajid</p> <p>Silica aerogel derived from TMCS and HMDZ silylating agents for reservoir floating cover application</p>	<p>WEFT-KNITTED ACTIVE JOINTS FOR SMART COMPOSITE APPLICATIONS Mr. David Rabe</p> <p>This study presents the development and realization of functionalized weft-knitted fabrics with integrated actuators for the realization of adaptive FRP.</p>	<p>FIBRE SIZING EFFECT ON THE ADHESION BETWEEN A CARBON FIBRE AND A REACTIVE THERMOPLASTIC POLYMER Dr. Ross Minty</p> <p>Investigation of the fibre sizing on the interfacial shear strength of thermoplastic composites using single-fibre fragmentation technique with statistical analysis</p>	<p>X-RAY COMPUTED TOMOGRAPHY BASED MODELLING FOR FEATURE-DEPENDENT AND INDEPENDENT MESHING OF HETEROGENOUS MATERIALS Mr. Robert Auenhammer</p> <p>Fully automated and accurate X-ray CT-based modelling of textile composites 20 to 50 times faster in the model generation</p>
<p>MULTI-PHYSICAL PROPERTIES PREDICTION OF FIBRE-REINFORCED COMPOSITES USING CONVOLUTIONAL NEURAL NETWORKS. Mr. Rajesh Nakka</p> <p>Simultaneously predicting the multi-physical properties of the composite material using convolutional neural networks.</p>	<p>PARAMETRIC EFFECT ON INLINE WIDTH CONTROL FOR THERMOPLASTIC AUTOMATED TAPE LAYUP Mr. Bharath Ravindran</p> <p>The paper details of the design of inline width tessellation (IWT) concept implemented at a test rig</p>	<p>MODIFIED FOURIER TRANSFORM MISALIGNMENT ANALYSIS METHOD FOR MEASURING FIBRE ALIGNMENT IN STITCHED GLASS FABRICS Miss. Nicola Shepherd</p> <p>Application of a modified Fourier Transform Misalignment Analysis method to measure fibre alignment in low-magnification images of stitched glass fabrics</p>	<p>CHARACTERISATION OF PRINT PATH DEVIATION IN 3D PRINTED CONTINUOUS CARBON FIBRE COMPOSITES Dr. Matthew Blacklock</p> <p>Print path deviations are characterised from optical images for a range of geometric features for 3D printed carbon fibre composites</p>	<p>PROCESS CHARACTERISATION FOR COMPRESSION MOULDING OF HYBRID-ARCHITECTURE COMPOSITES Mr. Hao Yuan</p> <p>Characterisation for deformation mechanisms of uncured SMC and prepreg in a hybrid compression moulding process</p>	<p>CHARACTERIZATION OF ACTIVE SHAPE CONTROL SMAHCS UNDER THE INFLUENCE OF VARIOUS AMBIENT TEMPERATURES Dr. Martin Gurka</p> <p>Shape memory alloy hybrid composite characterization under influence of ambient temperatures</p>	<p>PROCESS-INDUCED INTERFACE AND INTERPHASE EXPERIMENTAL CHARACTERIZATION BY THERMOSET-THERMOPLASTIC COMPOSITE CO-CURING Dr. Henri Perrin</p> <p>Experimental characterization of PEEK-RTM6 composite joining by co-curing</p>	<p>CONTACT-FREE POROSITY DETECTION IN COMPOSITE PARTS BY A PORE RESONANCE MECHANISM Mr. Martin Fürst</p> <p>The combination of an optical microphone and laser-excited acoustics enables non-contact detection of CFRP pore location, size and distribution.</p>
<p>DESIGN METHOD FOR ISOTENSOID ELLIPSOID SHAPED PRESSURE VESSELS Mr. David Schlegel</p> <p>A design method for ellipsoid shaped composite pressure vessels with isotensoid behaviour will be presented</p>	<p>MEASURING SOURCES OF MANUFACTURING PROCESS VARIATIONS IN AUTOMATED FIBER PLACEMENT COMPOSITES Mr. Siddharth Pantoji</p> <p>Experimental measurements to determine the main source of gaps and overlaps due to manufacturing inaccuracies during automated fibre placement</p>	<p>MANUFACTURING AND CHARACTERIZATION OF NOVEL NEAR-NET-SHAPED 3D WOVEN COMPOSITES FOR MARITIME APPLICATION Dr. Monali Dahale</p> <p>3D woven composite for maritime application</p>	<p>ADDITIVELY MANUFACTURED THERMALLY BISTABLE STRUCTURES Dr. Sampada Bodkhe</p> <p>Additively manufactured multi-material thermally actuated bistable structures</p>	<p>AN IMPROVEMENT OF THE LOW-COST VACUUM-BAG-ONLY PROCESS FOR CARBON/EPOXY LAMINATED COMPOSITES Dr. Pimpet Sratong-on</p> <p>An improvement of low-cost vacuum-bag-only process for CFRP prepreg was proposed in this study. The void content was investigated by image processing</p>	<p>A SIMPLE PREDICTIVE MODEL FOR BENDING OF SHAPE MEMORY POLYMERS Dr. Irina Garces</p> <p>This work proposes a simple model that can be provided to engineers for first stage engineering design. This model focuses on a model for bending of shape memory polymers to obtain critical parameters required to start designing with shape memory polymers.</p>	<p>RAPID CARBON FIBRE SURFACE PLASMA TREATMENT FOR ENHANCED FIBRE-THERMOPLASTIC INTERFACIAL PERFORMANCE Mr. Maximilian Pitto</p> <p>This work assesses carbon fibre-thermoplastic interfacial strength, surface morphology and surface chemistry after continuous atmospheric pressure plasma jet treatment</p>	<p>PROPAGATION OF GUIDED WAVES IN DAMAGED FIBER REINFORCED POLYMER LAMINATES: NUMERICAL MODELLING Mr. Shain Azadi</p> <p>High-fidelity FEM models are designed to simulate laser-induced guided wave propagation in damaged composite laminates</p>
					<p>INSTABILITY OF DIELECTRIC ELASTOMER AND ITS APPLICATION IN SOFT CRAWLING ROBOT Prof. Liwu Liu</p> <p>Dielectric elastomer instability and its application in soft robots</p>		
					<p>MULTI-AXIAL FIBER APPROACH TO OBTAIN BEND-TWIST COUPLING IN INTERACTIVE FIBER RUBBER COMPOSITES (IFRC) Mr. Achyuth Ram Annadata</p> <p>Multi-axial fiber approach to obtain bend-twist coupling in interactive fiber rubber composites using shape memory alloys</p>		
					<p>MULTIFUNCTIONAL EPDM/PARAFFIN FOAMS COUPLING SHAPE MEMORY BEHAVIOR AND THERMAL ENERGY STORAGE PROPERTIES Miss. Marica Bianchi</p> <p>The prepared EPDM/paraffin foams were revealed to be multifunctional since resulted in combined excellent TES properties and good shape memory performance.</p>		

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
12:30 - 12:35							
12:35 - 12:40	<p>COMPARING SURFACE ENERGY THERMODYNAMIC ADHESION VALUES WITH MECHANICAL PERFORMANCE IN NANOCOMPOSITES Dr. Katie Everden</p>	<p>DEVELOPMENT OF HIGH QUALITY LIGNIN-BASED CARBON FIBRES Dr. Anne Beaucamp This presentation describes current work pursued to develop high quality carbon fibres from lignocellulose biomass</p>	<p>FUSED FILAMENT FABRICATION OF RECYCLED COMPOSITES FROM GLASS FIBER WIND TURBINE WASTE: A METHODOLOGY AND FINITE ELEMENT MODEL Mr. Zhengshu Yan The work proposes a Modified RSA algorithm for the efficient generation of the RVEs with hybrid and arbitrary-geometry reinforcements</p>	<p>ONE-STEP METHOD FOR PRINTING STRAIN SENSORS ON GFRPs: ASSESSMENT OF SENSOR PATTERN EFFECT Mr. Adel Alrai Study of piezoresistive behavior of one-step transferred carbon-based strain gauge patterns on GFRP composites</p>		<p>COMPUTATIONALLY EFFICIENT METHODOLOGY TO COMPUTE VIRTUAL PERMEABILITY OF FIBROUS LAMINATES Mr. Biltu Mahato Computationally efficient method to compute virtual permeability of laminates by division of global 3D model into smaller domains.</p>	<p>OPTIMISATION OF CT SCANNING FOR CHARACTERISATION OF CARBON FIBRE PRESSURE VESSEL MICROSTRUCTURE Ms. Shailee Upadhyay I would be presenting results regarding the optimisation of CT scanning parameters and location sensitivity analysis for composite pressure vessels</p>
12:40 - 12:45							
12:45 - 12:50							
12:50 - 12:55	<p>ULTRASOFT MULTIFUNCTIONAL NANOCOMPOSITES FOR WEARABLE ELECTRONICS Mr. Oliver Tomes Discussion of an ultrasoft polymer nanocomposite system with multifunctional capabilities ideal for wearable electronics, including a new strain sensing model.</p>	<p>PROPERTIES AND PERFORMANCE OF NATURAL FIBRE REINFORCED ORGANOSHEETS MADE USING BIO-BASED THERMOPLASTIC MATRICES Dr. Arunjunai Mahendran Renewable organosheets from natural fiber reinforcement and bio-based thermoplastic matrices</p>	<p>PRESERVATION OF MECHANICAL PROPERTIES OF CARBON FIBERS AFTER MULTIPLE PYROLYSIS CYCLES Miss. Marina Corvo Alguacil Study on the preservation of mechanical properties of carbon fiber bundles subjected to the same pyrolysis cycle multiple times.</p>	<p>IDENTIFYING DAMAGE IN MULTIDIRECTIONAL GFRP COMPOSITE LAMINATES USING THERMOELASTIC STRESS ANALYSIS Prof. Janice Barton The work is to investigate combining Digital Image Correlation (DIC) and thermoelastic stress analysis (TSA) to gain a better understanding of damage evolution in GFRP laminated composites.</p>		<p>HIGH TEMPERATURE CHARACTERIZATION BY DYNAMIC MECHANIC ANALYSIS Dr. Herbert Mucha The fast and non-destructive Dynamic-Mechanic Analysis can provides material data to construction and engineering even under severe application conditions (max. 1500°C)</p>	<p>DYNAMIC UNDERWATER RESPONSE OF COMPOSITE PLATES TO IMPLOSION OF SUBMERGED SHELLS Prof. Arun Shukla Investigation of the dynamic response of a submerged composite plate due to an underwater implosion event is presented</p>

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
			<p>AN INNOVATIVE METHOD FOR 3D PRINTING OF CONTINUOUS FIBER REINFORCED HIGH PERFORMANCE THERMOPLASTIC COMPOSITES Dr. Adi Adumitroaie An Innovative Method for 3D Printing of Continuous Fiber Reinforced High Performance Thermoplastic Composites</p>		<p>SELF-SENSING BEHAVIOUR OF TRIPLY PERIODIC MINIMAL SURFACE LATTICES ENABLED BY ADDITIVE MANUFACTURING Mr. Alejandro Triay Design of multifunctional meta-materials enabled by additive manufacturing</p>		
	<p>A NOVEL HEAD CONTROL ALGORITHM FOR 3D CONTINUOUS TOW SHEARING Mr. Edwin Rosario Gabriel Continuous tow shearing to produce defect-free fibre-steering on complex surfaces.</p>	<p>IN- AND OUT-OF-PLANE SHEAR BEHAVIOUR OF 3D WOVEN CFRP Mr. Philipp Maria Huber The in-plane and out-of-plane shear behaviour of 3D woven CFRP is investigated by systematic design of experiments and linear regression.</p>	<p>OPTIMIZATION OF 3D PRINTED CONTINUOUS CARBON FIBER REINFORCED PETG COMPOSITES Dr. Anh-Duc Le This work focuses on improving the mechanical performances of 3D printed carbon fiber reinforced PETG composites, by optimizing printing parameters.</p>	<p>MONITORING OF THERMOSET COMPOSITES CURING BY STRUCTURAL HEALTH MONITORING (SHM) SENSORS Dr. Florence Saffar Study of the thermoset composites curing from strains measured by SHM sensors during the manufacturing cycle</p>	<p>MATERIAL SELECTION FOR FUNCTIONALIZED FIBER-REINFORCED COMPOSITE STRUCTURES Mr. Rogers Kipkoech Langat Smart composite structures have sparked the development of monitoring tools to continuously track the integrity of the structures and foresee the onset of degradation. Therefore, it is imperative to conduct proper material selection for the development of this structures.</p>	<p>WELDING JOINT STRENGTH PROPERTIES FOR CRUCIFORM NATURAL FIBER COMPOSITES Assoc. Prof. Junji Noda The effect of stacking sequence on the strength properties of unidirectional crossbeam joints was investigated.</p>	<p>DELAMINATION QUANTIFICATION IN A CROSS-PLY LAMINATE BASED ON TOPOLOGY OPTIMIZATION AND LAMB WAVE PROPAGATION MECHANISMS Dr. Kazuki Ryuzono This study proposed a new delamination identification method using topology optimization and Lamb-wave visualization, and its feasibility was verified.</p>
			<p>DEVELOPMENT OF A TEST-METHOD FOR CHARACTERIZATION OF THE ORIENTATION DEPENDENT MATERIAL PROPERTIES OF FFF STRUCTURES Mr. Felix Frölich Current status of testing methods for fused filament fabricated parts and the new developed test method with its advantages</p>		<p>ON ELECTROADHESIVE LAYER JAMMING STRUCTURES Dr. Jianglong Guo We present the fundamental principle of electroadhesive layer jamming and their experimental characterizations.</p>		
			<p>ADDITIVELY MANUFACTURED SANDWICH STRUCTURES FOR AEROSPACE APPLICATIONS Mr. Sebastian Backes Additive manufacturing as a new process for the production of sandwich structures for aerospace applications following the bionic inspiration</p>				
	<p>UNDERSTANDING THE EFFECT OF CYCLIC COMPRESSIVE LOADING ON THE THICKNESS BEHAVIOUR OF UNCURED PREPREGS Dr. Iryna Tretiak In this work, an investigation of the mechanical response to cyclic compressive loadings of toughened carbon/epoxy prepregs is undertaken.</p>	<p>THE INFLUENCE OF TWIST ON THE MECHANICAL PROPERTIES OF BRAIDED COMPOSITES Miss. Beth Grimes An investigation into the influence of the twisting of carbon fibres on the mechanical properties of a braided composites.</p>	<p>CONTINUOUS DIRECTED LASER PREHEATING OF BIG AREA ADDITIVE MANUFACTURING Mr. Ting Wang Continuous directed laser preheating is realized to optimize the strength between layers for big area additive manufacturing</p>	<p>THERMOPLASTIC COMPOSITE PIPES: AN OVERVIEW OF ADVANCED FULL SCALE TESTING APPROACHES Dr. Daniel Bull This paper describes an overview of the advanced full-scale testing methods for composite pipes.</p>	<p>BIOINSPIRED SMART COMPOSITES WITH MULTI-SCALE ARCHITECTURE AND SURFACE ENGINEERING Prof. Luyi Sun Smart composites</p>	<p>SNAP-BACK INSTABILITY OF LAMINATED COMPOSITES BRIDGED BY Z-REINFORCEMENTS Dr. Xiaole Li We propose a theoretical model to investigate the snap-back instability during the delamination of composite DCB bridged by discrete z-reinforcements.</p>	<p>ASSESSING THERMOGRAPHY AS AN IN-LINE QUALITY ASSURANCE METHOD FOR THERMOPLASTIC AUTOMATED FIBER PLACEMENT STRUCTURES Mr. Christoph Frommel Development and implementation of thermography measurements for in-line quality assurance during the tape laying process of thermoplastic reinforced carbon fibers</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
12:55 - 13:00	FLEXURAL PERFORMANCE OF NANO-PARTICLE REINFORCED UV-CURABLE RESINS MANUFACTURED BY STEREOLITHOGRAPHY Mr. Ayberk Baykal Nanotechnology	DEVELOPMENT OF RECYCLED PET COMPOSITES USING UNIDIRECTIONAL CONTINUOUS FIBER-REINFORCED THERMOPLASTIC TAPES Mr. Guillermo Ulldemolins De Olives Development of new materials based on continuous fiber thermoplastic composites from recycled PET thermoplastic matrices	PYROGASIFICATION OF COMPOSITE MATERIALS FROM AEROSPACE INDUSTRY FOR CARBON FIBRE RECOVERY Mrs. Stefania Minosi The study aims to develop a methodology to study and optimize the pyro-gasification process for aircraft CRFPs			AN INVESTIGATION INTO THE PERFORMANCE OF ALIGNED, DISCONTINUOUS CARBON FIBRE COMPOSITES PRODUCED WITH HIPERDIF 3G Mrs. Chantal Lewis This research aims to experimentally investigate the performance of aligned discontinuous fibre composites manufactured using the optimised HiPerDiF 3G technology	THERMOMECHANICAL COMPREHENSION OF THE BEHAVIOR OF SELF-REINFORCED COMPOSITES AND ITS UHMWPE REINFORCEMENTS Miss Coline Roiron Study in a comparative and associated manner of the thermomechanical behavior of the fibers, the neat polymer, and the SRPE.
13:00 - 13:05	CARBON NANOTUBES AND GRAPHENE NANOPATELETS IN EPOXY COMPOSITES: DISPERSION AND SYNERGY EFFECT Ms. Atikah Binti Mohamed Hanifah A presentation on carbon-based epoxy nanocomposites	NOVEL BIODEGRADABLE XANTHAN-BASED HYDROGELS TO PROMOTE PLANT GROWTH AND FOREST PROTECTION Mr. Alessandro Sorze Development of xanthan-based hydrogels to be used as topsoil covers and soil conditioners to promote plant growth and forest protection	MODELLING OF RECYCLED CARBON FIBRE-REINFORCED 3D-PRINTED THERMOPLASTIC COMPOSITES Mr. Peter Sántha Modelling approach to characterize recycled carbon fibre-reinforced 3D-printed thermoplastic composites	IDENTIFYING DAMAGE IN MULTIDIRECTIONAL GFRP COMPOSITE LAMINATES USING THERMOELASTIC STRESS ANALYSIS Prof. Janice Barton The work is to investigate combining Digital Image Correlation (DIC) and thermoelastic stress analysis (TSA) to gain a better understanding of damage evolution in GFRP laminated composites.		MACHINE LEARNING APPROACH TO PREDICT TRANSVERSE MODULUS OF UNIDIRECTIONAL COMPOSITES WITH DIFFERENT FIBRE SHAPES Mr. Haowei Huang Using a machine learning approach to predict unidirectional composite transverse modulus with the considerations of different fibre shapes	ONLINE PROCESS MONITORING IN HYBRID INJECTION OVERMOULDING Mr. Michael Petrich An overmoulding tool with in-cavity sensors was developed, to determine process values online and monitor the process.
13:05 - 13:10		CIRCULAR MANUFACTURING WITH THE HIPERDIF TECHNOLOGY USING RECLAIMED CARBON FIBRES FROM END-OF-LIFE SAILS Miss. Marcelle Hecker A recycling pathway for an end-of-life North Sail's 3Di sail is presented, including reclamation of carbon fibres and remanufacture of the recovered carbon fibres into aligned discontinuous fibre reinforced composites.	MECHANICAL COMBINED WITH CHEMICAL RECYCLING FOR VACUUM-INFUSED ACRYLATE-BASED COMPOSITES REINFORCED BY GLASS AND BASALT FABRICS Mrs Inès Meyer zu Reckendorf Proposed mechanical recycling method and possibility of combining chemical and mechanical recycling for thermoplastic composites infused with basalt and glass			BENCH-SCALE FIRE STABILITY TESTING - PROTECTIVE LAYERS IN CARBON FIBRE REINFORCED POLYMER LAMINATES Mrs. Weronika Tabaka A practicable and efficient method to assess different fire protective concepts in carbon fibre reinforced composites.	MECHANICAL BEHAVIOUR OF INJECTION-MOULDED SHORT GLASS FIBRE REINFORCED POLYAMIDE WITH STAGNATING WELD-LINES Mr. Majid Mokarizadehghaghishirazi Mechanical behaviour of injection-moulded short glass fibre reinforced polyamide with stagnating weld-lines
13:10 - 14:40	Lunch, Posters and Exhibition				Industry Session: Sustainable Composite Materials		
14:40 - 15:40		Sustainable composites - Session 3	Recycling and sustainability - Session 6	Aerospace Applications - Session 1		Properties of composites - Session 3	Fibre reinforced composites - Session 3
14:40 - 15:00		NANODIAMOND-TREATED FLAX: IMPROVING PROPERTIES OF NATURAL FIBER REINFORCEMENT FOR COMPOSITES Mr. Carsten Hinzmann We present a simple nanodiamond treatment, strengthening flax by 25% and making natural fibers more attractive as replacement for synthetics.	PERFORMANCE OF DISCONTINUOUS ALIGNED GLASS FIBRE MAT AND WET-LAID NON-WOVEN MATERIAL FROM RECYCLED WIND TURBINES Dr. Shamsiah Awang Ngah Commercially viable recycled glass fibre products from EoL wind turbines	COMPOSITE LANDING STRUCTURES FOR REUSABLE LAUNCH VEHICLES Dr. Matthew Jevons MT Aerospace presents the design of a composite landing structure conceived for a possible reusable launcher, based on European technologies.		BEHAVIOR OF PAPERBOARD WITH INTERACTING CIRCULAR HOLES UNDER TENSILE LOADING USING THREE-DIMENSIONAL DIGITAL IMAGE CORRELATION Dr. Furqan Ahmad Behavior of Paperboard with Interacting Circular Holes Under Tensile Loading Using Three-Dimensional Digital Image Correlation	RESEARCH ON THE IMPROVEMENT OF INTER-LAMINAR SHEAR STRENGTH OF CFRTP USING MW CNT DOUBLE INTRODUCING METHOD Dr. Minkook Kim Research on the improvement of inter-laminar shear strength of CFRTP using MW CNT double introducing method

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
	<p>EFFECT OF IN-PLANE FIBRE WAVINESS IN CONTINUOUS TOW SHEARING ON LAMINATE PROPERTIES Mr. Charles Paul Macleod In-plane fibre waviness' effect on mechanical properties was investigated via image analysis and correlated to mechanical knock-down factors.</p>	<p>MODELING AND SIMULATION OF DEFORMATION OF TEXTILES MADE FROM RECYCLED CARBON FIBERS Mr. Tobias Lang In the presentation, a micromechanical approach to model the deformation behavior of recycled carbon fiber staple yarns is described</p>	<p>MECHANICAL AND PIEZORESISTIVE SELF-SENSING BEHAVIOR OF MWCNT/UHMWPE NANOCOMPOSITES PROCESSED VIA SELECTIVE LASER SINTERING Mr. Muhammad Umar Azam The piezoresistive and mechanical characteristics of SLS 3D printed MWCNT/UHMWPE nanocomposites are examined under monotonic and cyclic loading.</p>	<p>CHARACTERIZING LARGE-SCALE HYBRID-MANUFACTURED TOOL DURABILITY THROUGH A SMALL-SCALE COMPOSITE PROCESS SCHEME Mr. Joshua Ilse A small-scale test method is demonstrated for the characterization of large-scale hybrid (additive + subtractive) manufactured tool durability.</p>		<p>INTERFACIAL PERFORMANCE OF COMPOSITES BY FIBER BUNDLE TESTS: IMPACT OF NANOFILLER DIMENSION AND SURFACE CHEMISTRY Dr. Hatice S Sas The effects of morphology and type of nanofillers upon interfacial strength between matrix and reinforcement have been investigated with TFBT.</p>	<p>THE INFLUENCE OF TRANSDUCER FREQUENCY ON ULTRASONIC PITCH-CATCH MEASUREMENT OF TWO-LAYER FIBER REINFORCED PLASTIC Dr. Winarto Kurniawan Investigation of the influence of ultrasonic transducer frequency on the thickness measurement result of fiber reinforced plastic</p>
	<p>THE INFLUENCE OF PROCESSING PARAMETERS ON TAPE DECONSOLIDATION IN THERMOPLASTIC COMPOSITES Ms. Emma Tobin Wedge peel tests indicate that the bond strength of deconsolidated thermoplastic composite tapes is lower than as received tapes.</p>	<p>SECOND-ORDER HOMOGENISATION OF 3D WOVEN COMPOSITES USING SHELL ELEMENTS Miss. Athira Anil Kumar Implementation of a second-order homogenisation framework for shell elements on 3D woven composites, to help understand and further develop efficient multi-scale modelling methods for thick structures.</p>	<p>FIBER AND VOID PROPERTY CORRELATION WITHIN BEAD MICROSTRUCTURE OF LARGE AREA ADDITIVE MANUFACTURING POLYMER COMPOSITES Dr. Douglas Smith The correlation of voids and carbon fibers within the bead microstructure of large scale polymer composite extrusion/ deposition is explored.</p>	<p>AN EVALUATION FOR THE PROCESS-ABILITY OF COMPOSITES USING INFUSION PROCESS. Jong Rok Ha For the evaluation of manufacturing fairness, a process optimization study was performed after process simulation based on basic data such as viscosity measurement of resin, fiber permeability coefficient, and pressure gradient.</p>		<p>INTERFACIAL BONDING ENHANCEMENT BY PEEK FILM FOR DOUBLE-LAYER COMPOSITES STRUCTURE BASED ON OVERMOLDING PROCESS Mr. Wei Jiang This paper introduces the enhancement of overmolding composite structure interface by PEEK thin film</p>	<p>THE EFFECT OF IMAGE QUALITY ON AUTOMATED COMPOSITE DEFECT INSPECTION Mr. Umeir Khan Enabling a Quantitative Assessment of Shopfloor Photograph Quality for Automated Inspection of Non-Crimp Fabric Defects</p>
	<p>ON-THE-FLY TOW WIDTH CONTROL FOR ADVANCED FIBRE-STEERING PROCESS Miss. Michelle Rautmann A novel Continuous Tow Shearing (CTS) concept utilising Tow Width Control (TwiC) allows for eliminating layup defect</p>			<p>CHARACTERISATION OF ROTATIONALLY MOULDED COMPOSITES MANUFACTURED IN THE FULL-SCALE PROCESS Dr. Peter Martin The work presents the effect of peak internal air temperature (IAT) and heating rate (HR) on the adhesion of polyethylene to glass fibres under similar thermal conditions to the rotational moulding cycle.</p>		<p>CHEMICAL-ETCHING-BASED OBSERVATION ON SPHERULITIC AND INTERFACIAL MORPHOLOGIES OF FIBER REINFORCED THERMOPLASTICS Mr. Jiakuan Zhou The observation on crystalline morphologies of as-manufactured composites reveals the mechanism of significant bond strength increase under fast cooling.</p>	<p>A COMPARISON OF ACOUSTIC WAVE PROPAGATION THROUGH FRPS WITH VARYING RESIN SATURATION Mr. Benjamin Stanford Assessment of Resin Saturation of Carbon Fiber Composites using acoustic wave velocity and fiber axis.</p>

Lunch, Posters and Exhibition

Automated fibre & tape placement - Session 3	Textile-based & 3D composites - Session 3	Additive manufacturing - Session 6	Experimental methods for process characterization - Session 3	Smart composite materials and structures - Session 3	Interfaces and interphases - Session 3	Nondestructive evaluation - Session 3
<p>ACTS3D (ADVANCED CTS IN 3D) - TOWARDS DEFECT-FREE MANUFACTURE OF 3D COMPLEX COMPOSITES Dr. ByungChul (Eric) Kim The world's first defect-free fibre-steering with variable width tows on complex 3D surfaces - A recent advancement of CTS technology</p>	<p>IN-SITU CURE MONITORING OF 3D WOVEN COMPOSITES WITH A MULTIFUNCTIONAL CNT SENSOR Miss. Dilan Arslan Creating such an active surface onto glass fiber directly brings multifunctionality from curing monitoring to load and strain sensings for structural applications.</p>		<p>CHARACTERIZING REFLECTANCE PATTERNS OF UNIDIRECTIONAL CF/PAEK COMPOSITE TAPES FOR LASER ASSISTED FIBER PLACEMENT Mr. Tom Asjee Characterizing anisotropic reflectance patterns of unidirectional CF/PAEK composite tapes for laser assisted fiber placement</p>	<p>FIBER-REINFORCED LIQUID CRYSTALLINE ELASTOMER COMPOSITES: MULTI-STIMULUS RESPONSIVE ACTUATORS WITH MULTIDIRECTIONAL MORPHING CAPABILITIES Mr. Yuliang Xia</p>	<p>SPECTROSCOPY-DRIVEN APPLICATION AND INTERPHASE EFFECT OF LUMINESCENT COMPOSITES Dr. Kyungil Kong Spectroscopy-driven data monitoring and analytical interphase modelling for the luminescent particulate composites are presented.</p>	<p>EFFICIENT USE OF MICRO-TOMOGRAPHY FOR IN-DEPTH CHARACTERIZATION OF COMPOSITES Prof. Roberts Joffe The paper demonstrates versatility and usefulness of the x-ray microtomography for characterization of the micro-structures of different types of composites.</p>

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
15:00 - 15:05							
15:05 - 15:10		<p>EFFECT OF ARCHITECTURE ON THE MECHANICAL PROPERTIES OF SELF-REINFORCED COMPOSITES Mr. YOGESHVARAN RAMANATHAPURAM NAGARAJAN</p> <p>Investigation of the mechanical properties of the self reinforced recycled composites for the prosthetic applications to Developing the Artificial prosthetic limbs using Recycled composite materials</p>	<p>SCRAPPED COMPOSITE ICE-HOCKEY STICK SHAFTS FOR REUSE IN CRASH ENERGY ABSORBERS Prof. Patrik Fernberg</p> <p>The scope is to investigate quality of scrapped ice-hockey sticks and their energy absorption capacity when undergoing compressive crushing.</p>	<p>MECHANICAL PROPERTIES OF NEWLY DEVELOPED ABRADABLE MATERIALS FOR ADDITIVE MANUFACTURING Dr. lee Lee Hia</p> <p>Developing of multi-functional aircraft engine air sealing abradable coatings with additive manufacturing method.</p>		<p>EXPERIMENTAL ANALYSIS OF UNFOLDING FAILURE IN CURVED COMPOSITE LAMINATES Miss Sindhu Bushpalli</p> <p>Detailed analysis of interlaminar tensile strength in highly curved composite laminates employing different ply orientations</p>	<p>STRESS ANALYSIS AROUND AN OPEN HOLE IN CFRP MODIFIED WITH GRAPHENE NANOPATELETS Miss. Stella Peloni</p> <p>Investigation of the stress distribution around an open hole in CFRP modified with graphene nanoplatelets</p>
15:10 - 15:15							
15:15 - 15:20							
15:20 - 15:25		<p>DEVELOPING RECYCLED CARBON FIBRE REINFORCED MATERIAL FOR SUSTAINABLE ADDITIVE MANUFACTURING Mr. James Mills</p> <p>A step changing material makes AM as an affordable and sustainable option to SMEs for Lightweight Manufacturing.</p>	<p>INFLUENCE OF DEFECT LOCATION IN RECYCLED / STAPLE FIBRE COMPOSITE MATERIALS Dr Olivier MANTAUX</p> <p>Staple fibres composites, strength, defects, experimental vs digital, cohesive zone modeling</p>	<p>MATURATION OF PROMISING CFRP-LATTICE AND SANDWICH TECHNOLOGIES FOR REPRESENTATIVE FUTURE LAUNCHER INTERSTAGE AND INTERTANK STRUCTURES Ms. Marina Wolff</p> <p>MT Aerospace successfully developed CFRP-lattice and -sandwich technology targeting an optimized full scale intertank structure design.</p>		<p>EFFECT OF LATERAL SIZE ON THE RHEOLOGICAL AND DISPERSION STABILITY OF GRAPHENE-BASED NANOCOMPOSITES Miss. Farnaz Mazaheri Karvandian</p> <p>Investigations into the effect of mass-produced cost-effective graphene powders on nanocomposites by studying their rheological properties and quantified dispersion stability.</p>	<p>SERVO-PRESS FORMING PROCESS AND DAMAGE BEHAVIORS OF CFRTP RIVET HEAD PREPARED USING UD-CF/PEEK ROD Mr. Mikitaka Ito</p> <p>This process behavior of rivet head thermoformed from UD-CF/PEEK rod and the damage behavior under head tensile load are investigated.</p>
15:25 - 15:40							
15:40 - 15:45							
15:40 - 16:10	Thursday Afternoon Tea / Coffee Break, Posters and Exhibition						
16:10 - 18:10	Nanocomposites - Session 7	Sustainable composites - Session 4	Structural health monitoring - Session 1	Aerospace Applications - Session 2	Crashworthiness	Properties of composites - Session 4	Fibre reinforced composites - Session 4
16:10 - 16:30	<p>FABRICATION AND CHARACTERIZATION OF HORIZONTALLY-ALIGNED CARBON NANOTUBE/SILICON CARBIDE NANOCOMPOSITE LAMINATES WITH ULTRA-HIGH NANOFIBER VOLUME FRACTION Shaan Jagani</p> <p>Horizontally aligned CNT/SiC nanocomposite laminates with ultra-high nanofiber volume fractions were fabricated and characterized for their microstructure and structural properties</p>	<p>FLOW CHARACTERISATION FOR SHEET MOULDING COMPOUND MANUFACTURED FROM RECLAIMED PREPREG WASTE Miss. Casilda Serrano Villalobos</p> <p>Different solutions for reclaiming and reusing prepreg manufacturing waste are explored through comprehensive experimental material characterisation</p>	<p>CAPACITANCE MEASUREMENTS ON INTEGRATED CARBON FIBRE ROVINGS FOR STRUCTURAL HEALTH MONITORING IN GFRP Ms. Christina Buggisch</p> <p>SHM method for detection of damage in GFRP via capacitance measurements on integrated carbon fibre bundles forming an interleaved capacitor</p>	<p>MULTI-SCALE DEVELOPMENT OF CFRP PRESSURE VESSELS FOR LIQUID HYDROGEN APPLICATION Ms. Marina Wolff</p> <p>Description of a multi-scale development for CFRP pressure vessels for hydrogen storage.</p>	<p>EXPERIMENTAL INVESTIGATION INTO ENERGY-ABSORBING BEHAVIOR OF HIERARCHICAL HONEYCOMB COMPOSITE TUBES Prof. Jin Zhou</p> <p>biomimetics, multi-cell tube, energy absorption</p>	<p>MULTISCALE MICROSTRUCTURAL CHARACTERIZATION OF PLA/CLAY NANOCOMPOSITES FOR AN IMPROVED PREDICTION OF THEIR PROPERTIES Mr. Julien Ibarretxe</p> <p>The microstructure of polymer composites will sometimes require a multi-scalar characterization to understand their properties. Such a methodology is proposed.</p>	<p>HIERARCHICAL IMPACT DAMAGE TOLERANCE OF COMPOSITES USING MULTI-SCALE FIBRE TOUGHENING Dr. Anil Ravindran</p> <p>Hierarchical impact damage tolerance of composites using multi-scale fibre toughening</p>

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
	<p>IN SITU CONSOLIDATED AUTOMATED FIBER PLACEMENT CARBON FIBER PAEK COMPOSITES Joseph Kirchoff Inter-laminar bonding mechanisms in AFP of a thermoplastic composite and failure mechanics of in situ consolidated coupons</p>	<p>PROBABILISTIC SENSITIVITY STUDIES OF A MULTISCALE MODEL FOR BONDED COMPOSITE PI-JOINT PERFORMANCE Mr. David Riha Process-to-performance modeling of bonded 3D textile composite pi-joints to understand the relationship between mesoscale architecture and macroscale response.</p>	<p>UTILISING MACHINE VISION FOR AUTOMATIC FLOW-FRONT DETECTION OF TEXTILE PERMEABILITY MEASUREMENTS Mr. Jamin Vincent Implementing machine vision technology to improve quality and accuracy of permeability measurements for out of autoclave composite processing</p>	<p>ADDITIVE MANUFACTURING OF CONTINUOUS FIBER REINFORCED SMART COMPOSITE STRUCTURES Prof. Xiaoyong Tian</p>		<p>EFFECT OF THERMAL DEGRADATION OF GLASS FIBRE SIZING ON INTERFACIAL ADHESION Dr. David Bryce Thermal decomposition of glass fibre sizings is investigated to determine optimal routes to a commercial resizing process.</p>	<p>EVALUATION OF ASYMMETRIC WRINKLES USING HIGH FREQUENCY EDDY CURRENT AND ULTRASONIC NON-DESTRUCTIVE TESTING TECHNIQUES Dr. Qiuji Yi Materials Characterization, NDE</p>
<p>FAILURE OF CARBON NANOTUBE-GRAFTED CARBON FIBRE REINFORCED COMPOSITES BY SINGLE FIBRE PULL-OUT Mr. Hassan A Almousa Single fibre pull-out testing to examine the synergistic effect of nano-reinforced composites with CNT-grafted-CF, along with high performance thermoplastic matrices.</p>							
<p>FOUR-POINT BENDING TEST TO STUDY FAILURE AT THE INTERFACES OF COMPOSITES ADHESIVE ASSEMBLIES Dr. Pierre Bidaud A strategy is proposed to characterised failures of adhesive-composite assemblies interfaces properties.</p>							
	<p>MULTI-SCALE ANALYSIS OF MECHANICAL PROPERTIES OF THREE-DIMENSIONAL BRAIDED CERAMIC MATRIX COMPOSITES WITH PORE DEFECTS Xinyi Song</p>	<p>STRAIN RATE EFFECT AND MICROSCOPIC BEHAVIOR ANALYSIS OF SHORT-CUT CARBON FIBER REINFORCED COMPOSITES Mrs. Hui Liu</p>					<p>A NOVEL NON-DESTRUCTIVE METHODOLOGY FOR DETERMINING COMPOSITE LAMINATE STACKING SEQUENCE Dr. Isabel Mcbrayer This research is conducted to assess a novel Non-Destructive Testing (NDT) methodology for identifying the stacking sequence of composite panels with unknown properties.</p>
						<p>INTEGRATED FUNCTIONAL AND STRUCTURAL MESH REFLECTOR DESIGN AND FLOATING 3D PRINTING USING CONTINUOUS FIBER Dr. Youwei Kang</p>	

Thursday Afternoon Tea / Coffee Break, Posters and Exhibition

	Automated fibre & tape placement - Session 4	Machining & Repair - Session 1					
	<p>MANUFACTURE PROCESS OF STRUCTURAL UPPER SKIN PANEL HIGHLY INTEGRATED IN CARBON FIBRE REINFORCED THERMOPLASTIC MATERIAL Miss. Mar Zuazo Ruiz Thermoplastic material and process researcher</p>	<p>ADVANCED LASER MICRO AND MACRO DRILLING OF CFRP FOR AEROSPACE APPLICATIONS Mr. Richard Staehr In this talk, a flexible laser micro- and macro-drilling process for two different aerospace applications will be presented</p>					

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
16:30 - 16:50	<p>INVESTIGATION OF PYROLYSIS CHARACTERISTICS OF SILICONE-PHENOLIC MATRIX NANOCOMPOSITES THROUGH KINETIC ANALYSIS AND REAXFF MD SIMULATIONS Mr. Jie Xiao</p>	<p>VITRIMER COMPOSITES FOR AERONAUTICS Prof. Philippe Olivier High performance vitrimer composites manufactured by resin transfer moulding and their mechanical properties for structural parts in Aeronautics</p>	<p>A DATA DRIVEN BASED METHODOLOGY FOR STRUCTURAL HEALTH MONITORING WITH DISTRIBUTED OPTICAL FIBRE SENSORS Dr. Yiding Liu In the present paper, we propose a new methodology, based on a data driven model, to perform the Structural Health Monitoring (SHM), by means of strain measurements from embedded Distributed Optical Fibre Sensors (DOFS) in a composite braided beam structure.</p>	<p>CRYOGENIC STORAGE IN THERMOPLASTIC COMPOSITE VESSELS Dr. Ashley Robert Chadwick Performance of thermoplastic composites and polymers for cryogenic hydrogen storage applications.</p>	<p>THE ENERGY-ABSORBING CHARACTERISTICS OF HONEYCOMB CORES BASED ON CARBON FIBER COMPOSITES Prof. Wesley Cantwell An investigation of the energy absorbing properties of thermoplastic and thermosetting honeycomb cores</p>	<p>INVESTIGATING THE SHEAR BEHAVIOR OF MULTI-PLY WOVEN FIBRE REINFORCED PA6 COMPOSITE LAMINATES Mr. George Street The shear behaviour of multi-ply continuous fibre reinforced thermoplastic laminates</p>	<p>FLAME-RETARDANT COATINGS FOR CARBON FIBRE-REINFORCED POLYAMIDE 6 COMPOSITES Miss. Zsófia Kovács We developed flame-retardant E-caprolactam-based in-mould coatings for carbon fibre-reinforced PA6 composites prepared by in-situ polymerisation of E-caprolactam</p>
16:50 - 16:55	<p>MOLECULAR INTERACTIONS BETWEEN CARBON NANOTUBES AND POLYIMIDE CHAINS TUNED BY LONDON DISPERSION AND STERIC EFFECTS Prof. Baode Zhang</p>	<p>NATURAL RUBBER COMPOSITE MIXED WITH POLY-ALUMINUM COMPOSITE Dr. Anin Memon Sustainable composite</p>	<p>INVERSING SPATIAL MODULUS DISTRIBUTION OF CFRTP BY A VIBRATIONAL METHOD AND ITS HYDROTHERMAL AGING APPLICATION Mr. Weizhao Huang Utilize a non-destructive vibrational method to detect the spcial modulus distribution and achieve real-time monitoring.</p>	<p>SYNERGISTIC EFFECTS OF DOPED POLYANILINE AND CARBON BLACK FOR LIGHTNING STRIKE PROTECTION OF COMPOSITES Mr. Bibhuti Bikash Kagyung This work is a novel approach to enhance the electrical and thermal properties of matrix in fiber reinforced composites</p>	<p>AN EXPERIMENTAL STUDY OF THE RATE DEPENDENT BEHAVIOUR OF THROUGH-THICKNESS REINFORCEMENT IN Z-PINNED CFRP LAMINATES Dr. Huifang Liu Characterization of dynamic behaviour of z-pinned</p>	<p>MECHANICAL PROPERTIES OF ABS REINFORCED WITH RECYCLED ELIUM® THERMOPLASTIC COMPOSITE Dr. Begoña Galindo Recycled Elium® thermoplastic composite/ ABS a great solution to extend the material End-of-Life and to reduce the carbon footprint in the automotive sector</p>	<p>TRANSFER OF THE FLAME RETARDANCY AND POST-FIRE MECHANICS FROM POLYMER MATERIALS TO GLASS-FIBER-REINFORCED PLASTICS Mrs. Maria Jauregui Rozo Processability, fire behavior and mechanical performance between the flame retarded pure epoxy resin and flame retarded glass-fiber-reinforced plastic.</p>
16:55 - 17:00		<p>SUSTAINABLE COMPOSITES FOR CONSTRUCTION: A REVIEW Mr. Blai López Rius Composites materials have an important role in the attainment of sustainable construction. In this respect, the route to sustainable construction was identified to be through improved sustainable composites materials coming from natural resources or from agro-waste industry and enhancing building for disassembly and deconstruction for end of life reuse and recycling.</p>				<p>DSC AND XRD CRYSTALLINITY MEASUREMENTS FOR CARBON FIBER-REINFORCED POLYAMIDE-6 LAMINATES PROCESSED AT DIFFERENT COOLING RATES Mr. Sepehr Simaafrookhteh Crystallinity Measurements for Carbon Fiber-reinforced Polyamide-6 Laminates Processed at Different Cooling Rates</p>	<p>TRANSFER OF THE FLAME RETARDANCY AND POST-FIRE MECHANICS FROM POLYMER MATERIALS TO GLASS-FIBER-REINFORCED PLASTICS Mrs. Maria Jauregui Rozo Processability, fire behavior and mechanical performance between the flame retarded pure epoxy resin and flame retarded glass-fiber-reinforced plastic.</p>
17:00 - 17:05		<p>HARAKEKE REINFORCED FURAN BIO-COMPOSITES Mr. Liam Van Mechelen The presentation of the manufacturing and performance characteristics of fully bio-derived and sustainable harakeke furan composites</p>				<p>IN-PLANE SHEAR BEHAVIOR OF FIBER-REINFORCED AND TAPE-REINFORCED UHMWPE LAMINATES: EXPERIMENTAL STUDY Mr. Vivek Kumar Experimental study performed to evaluate in-plane shear behavior of fiber-reinforced and tape-reinforced uhmwpe laminates with effect of fiber-thickness and matrix</p>	<p>NANO-ENGINEERED CNC/FLAX/BIO-EPOXY HIERARCHICAL COMPOSITES Mr. Shahed Ekbatani It is about nano-engineered CNC/ FLAX/Bio-Epoxy hierarchial composites</p>
17:05 - 17:10		<p>OPEN-HOLE TENSION ANALYSIS OF CFRP COMPOSITE USING PROGRESSIVE DAMAGE MODELLING Mr. Mansingh Yadav Numerically and experimentally exploring the effect of damage initiation and propagation on open-hole tensile properties for multilayer carbon fiber reinforced plastic (CFRP) composites.</p>				<p>FLEXURAL AND TENSILE PROPERTIES OF HYBRID NONWOVEN-BASED POLYLACTIC ACID COMPOSITES MADE OF BANANA/FLAX/HEMP FIBRES Mrs. Maryam Sodagar Flexural and tensile properties of hybrid nonwoven-based polylactac acid composites made of banana, flax, and hemp fibres</p>	

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
	<p>EMISSIVITY CHARACTERIZATION OF THERMOPLASTIC CFRP FOR THERMOGRAPHIC MEASUREMENT DURING LASER-ASSISTED AUTOMATED FIBRE PLACEMENT Dr. Cheng Chen</p>	<p>RESEARCH ON ABLATION BEHAVIOR OF C/SIC COMPOSITE MATERIALS UNDER HIGH-ENERGY CW LASER IRRADIATION Mr. Junru Wang</p>					
	<p>APPLICATION OF JOULE HEATING IN AUTOMATED DRY FIBRE PLACEMENT (ADFP) Mr. Shimin Lu This work assesses the feasibility of application of joule heating in Automated Dry Fibre Placement (ADFP).</p>						

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
17:10 - 17:15	STRATEGY TO ENHANCE THERMAL CONDUCTIVITY OF POLYMER NANOCOMPOSITES Prof. Shu-lin Bai A study on thermal conductivity enhancement of polymer nanocomposites		EVALUATION ON ULTRASONIC WELDING BEHAVIOR OF CF/PPS AND HEALTH MONITORING USING CNT ADDED ENERGY DIRECTOR Mr. Soma Nishimura This study aims to revealed that the effects of CNT added energy-director on ultrasonic welding and self-sensing behavior of CF/PPS.	BIO-INSPIRED INTERLEAVED COMPOSITE STRUCTURES FOR HIGH-VELOCITY IMPACT APPLICATIONS Dr. Erfan Kazemi Our developed novel design consists of a non-conventional bio-inspired interleaved hybrid layup that significantly enhances damage diffusion and energy dissipation in CFRP composite structures under high-velocity impact.	ENERGY ABSORPTION OF CARBON/ EPOXY SINUSODIAL COMPOSITE STRUCTURES: THE INFLUENCE OF GEOMETRY Mr. Mehmet Engul In this paper, the influence of geometry on the SEA of composite structures manufactured using a plain-weave carbon/epoxy prepreg is investigated through various geometries	EFFECT OF DAMAGE ON ELECTROMAGNETIC SHIELDING PROPERTIES OF CARBON FIBRE REINFORCED COMPOSITES Ms. Ewa Mikinka Effect of damage on electromagnetic shielding properties of carbon fibre reinforced composites	POLYPROPYLENE HYBRID COMPOSITES FOR THE AUTOMOTIVE INDUSTRY Prof. Marisa Rocha In this study, the effect of incorporation of short carbon fiber together with graphene platelets to polypropylene on the composites performance is explored.
17:15 - 17:20					CURVATURE EFFECT ON CRUSH ENERGY ABSORPTION OF 2D WOVEN CARBON FIBRE COMPOSITES Dr. Denis Dalli An assessment of the effect of curvature on the energy absorption capability of 2D woven CFRPs.	METHODOLOGY FOR CHARACTERIZING THE FIBER PRINT THROUGH AND OVERALL SURFACE QUALITY FOR UNIDIRECTIONAL REINFORCED COMPOSITES Mr. Marc Oliver Voltz Development of a quantitative surface characterization method adapted from ISO standards accounting for human vision based on common measuring systems	DAMAGE SELF-SENSING BEHAVIOR OF BASALT FIBER REINFORCED POLYMER COMPOSITES MODIFIED BY ELECTROPHORETIC DEPOSITION Dr. Dong Xiang This research will present a novel basalt fiber reinforced polymer composite with damage self-sensing behavior based on electrophoretic deposition modification
17:20 - 17:25					DYNAMIC LOAD MITIGATION OF TRIPLY PERIODIC MINIMAL SURFACE STRUCTURES BASED ON GRADIENT DESIGN Mr. Fenglei Li We investigate the dynamic load mitigation of triply periodic minimal surface structures based on hybridization design	STANDARDIZATION OF NEW MODE-I INTERLAMINAR FRACTURE TOUGHNESS TEST OF CFRP LAMINATES WITH NON-ADHESIVE DCB TESTFIXTURE Dr. Eiichi Hara A new DCB (Double Cantilever Beam) test method without bonding is reported.	HYBRID THERMOPLASTIC COMPOSITES BASED ON ELIJUM® RESIN AND CARBON/GLASS REINFORCEMENTS Mr. Tayyab Khan Visualizing Pseudo-Ductility in Carbon/Glass Fiber Hybrid Composites Manufactured using an Infusible Thermoplastic Resin
17:25 - 17:30					MECHANICAL PROPERTIES OF 3D PRINTED MIURA-ORI MECHANICAL METAMATERIALS Mr. Jiakang Gan Mechanical properties of 3D printing miura-ori mechanical metamaterials		
17:30 - 17:35			A NUMERICAL METHODOLOGY FOR DETECTION OF IMPACT DAMAGE USING NATURAL FREQUENCY Dr. Karthik Ram Ramakrishnan A numerical methodology to estimate the extent of damage in a FRP composites subjected to impact loads from frequency shifts	QUALITY INSPECTION OF THERMOSET LATTICE STRUCTURES WITH PATCHES FOR AIRCRAFT RIB APPLICATIONS Mr. Tayfun Durmaz This study gives brief information about application of composite lattice structures in aerospace applications.	INVESTIGATION INTO THE BEHAVIOUR OF COMPOSITE YACHT STRUCTURES SUBJECTED TO MARINE COLLISION LOADS Ms. Lea Damiano Improving understanding of the crashworthiness characteristics of high-performance composite sailing yachts using experimental methods.		
17:35 - 17:50							

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
		<p>TENSILE PERFORMANCE OF FIBRE-ORIENTED SCARF REPAIR COUPONS FOR WING SKIN MATERIALS Dr. Robert Pierce</p> <p>Investigation of new ply-tailored scarf designs for improved repair performance and size reduction, based on modelling and experimental testing.</p>					
		<p>ADVANCED SYSTEMS FOR THERMOPLASTIC COMPOSITE (TPC) REPAIRS Miss. Noelia González-Castro</p> <p>This work has as goal the development of high performance, flexible and cost-effective, automated, and robotized technologies to repair TPC</p>					

Time	Main Auditorium	Studio	Arc	Hall 1A	Hall 2A	Hall 2B	Meeting Room 1A
17:50 - 17:55			<p>EMBEDDING FIBER OPTICAL SENSORS IN FRP-HYBRID MATERIALS Mr. Jocke Petterson</p> <p>Embedding optical sensors in Fiber Reinforced Polymers (FRP) and aluminum hybrid materials for structural health monitoring of components subjected to cyclic loading</p>				
17:55 - 18:00			<p>MODELLING IN-PLANE ELECTRICAL BEHAVIOUR OF UNIDIRECTIONAL AND CROSS-PLY CARBON FIBRE LAMINATES Mr. Jose David Acosta Correa</p> <p>This work studies analytically and numerically the electrical in-plane resistance in CFRP plates for structural health monitoring applications</p>				
18:00 - 18:05			<p>DIGITAL TWIN FOR STRUCTURE HEALTH MONITORING FOR COMPOSITES STRUCTURES Miss. Ameni RAGOUBI</p> <p>This work aim to develop a method for detecting damage in composite materials based on Machine Learning algorithms.</p>				
18:05 - 18:10			<p>USING MACHINE LEARNING AND FINITE ELEMENT ANALYSIS TO DETECT DAMAGE WITHIN COMPOSITE STRUCTURES Mr. Villorthan Sunthareswaran</p> <p>Using a large amount of validated and generated data using finite element analysis, coupled with machine learning techniques to detect damage within composite structures</p>				
18:10 - 18:15			<p>EMBEDDED CO-CURED ELECTRODES TO ACHIEVE ROBUST ELECTRICAL CONTACT IN CARBON FIBRE COMPOSITES Dr Meisam Jalalvand</p>				
19:15 - 19:45	Coach Departure for Conference Dinner						
19:30 - 23:30	Conference Dinner						

Meeting Room 1B	Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan	Titanic	Bar 2
		<p>CFRP MILLING PROCESS INVESTIGATION Mr. Tedni De Abreu Goulart Experimental approach to investigate the influence of different factors on milling process of CFRPs regarding final part quality.</p>					
		<p>MACHINING OF POLY-ALUMINUM COMPOSITE FROM BEVERAGE CARTON WASTE BY MILLING USING HIGH-SPEED CUTTING TOOLS Dr. Anin Memon Machining of Composite</p>					
		<p>THE INFLUENCE OF OPTIMIZED REPAIR PATCH GEOMETRY ON THE STRENGTH OF REPAIRED COMPOSITE STRUCTURES. Dr. Spyridon Psarras The optimization of stepped scarf repair for composite parts was investigated by using extensive test validated FE numerical modelling</p>					
		<p>TENSILE- TENSILE FATIGUE STUDY OF DAMAGED AND REPAIRED CARBON-GLASS HYBRID COMPOSITE Mr. Chinmaya Kumar Sahoo This work was carried out to study the fatigue behaviour of damaged and repaired fibre hybrid composite</p>					
Coach Departure for Conference Dinner							
Conference Dinner							

Time	Main Auditorium	Hall 2A	Hall 2B	Meeting Room 1A	Meeting Room 1B
08:35 - 09:20	R&D JOURNEY TO A COMPOSITE WING, <i>Mr Mark Braniff,</i> Head of Research and Technology, Spirit AeroSystems, Belfast, Plenary Lecture				
09:20 - 09:50	CHARACTERIZATION AND CALIBRATION OF PROGRESSIVE DAMAGE MODELS FOR COMPOSITES: EXPERIMENTAL, VIRTUAL AND MACHINE LEARNING METHODS, <i>Prof. Reza Vaziri,</i> University of British Columbia, Keynote address	NOVEL HYBRID COMPOSITE-METAL JOINTS AND THEIR APPLICATION TO PRODUCT ASSEMBLY AND DISASSEMBLY FOR CIRCULARITY, <i>Prof. Conor McCarthy,</i> University of Limerick, Keynote address			
09:50 - 10:00	Move to Concurrent Sessions				
10:00 - 11:00	Aerospace Applications - Session 3	Design and manufacture for multifunctionality - Session 1		Composites Design - Session 4	Life-Cycle & Performance enhancement
10:00 - 10:20	CRYOGENIC TYPE-V PRESSURE VESSEL DESIGN, MANUFACTURING AND TESTING Mr. Recep Ufuk Linerless cryogenic composite pressure vessel development methodology with multiscale scale analysis, fabrication, and cryogenic testing is presented.	THE CONSOLIDATION OF THERMOPLASTIC COMPOSITE PREFORMS VIA TAILORED BRAIDING Mrs. Jessica Lavorata Introducing a novel high-rate manufacturing method that allows multifunctional components to be easily embedded and contained in thermoplastic preforms.		TSAI'S MODULUS AND DOUBLE-DOUBLE LAMINATES IN THE DESIGN OF ADVANCED COMPOSITE STRUCTURES Dr. Ali Aravand Introduction to a new-class of laminates in double-double. Recent findings on the use of Tsai's modulus in predicting engineering constants	BEARING STRENGTH HIGH PERFORMANCE FIBRE METAL THIN-PLY LAMINATES Dr. Hans Wittich This study shows that the hybridisation of Thin-Ply CFRP laminates with stainless steel patches in areas of stress concentration and load introduction significantly increases open hole tensile and bearing strength.
10:20 - 10:40	ADAPTIVE BUCKLING-DRIVEN COMPOSITE STRUCTURES FOR NEXT GENERATION AIRCRAFT Prof. Chiara Bisagni	IN-SITU MONITORING OF CONSOLIDATION PROCESS FOR HIGH-PERFORMANCE THERMOPLASTIC COMPOSITES BY FIBER BRAGG GRATING Miss. Anastasia Liapi Characterization of FBG integrated in high-performance thermoplastic composites by process monitoring at temperatures close to 400°C		ABLATION RESISTANCE AND MECHANICAL PROPERTIES OF OVERALL STRUCTURE CONTINUOUS GRADIENT CERAMICS-POLYMER BIONIC COMPOSITE Mr. Chunlei Xia	CONFIGURATION ANALYSIS OF HYBRID METAL BI-STABLE COMPOSITES Dr. Xiangwei Guo
10:40 - 10:45		MICROSTRUCTURE EVOLUTION AND GROWTH KINETICS OF DIFFUSION BONDED AL-DOPED TiAl/Ti3SiC2 JOINTS Guoqing Chen Microstructure evolution and growth kinetics of diffusion bonded Al-doped TiAl/Ti3SiC2 joints		LIGHTWEIGHT DESIGN OF HYBRID, CIRCUMFERENTIAL REINFORCED HIGH-PRESSURE HYDRAULIC CYLINDERS Mr. Michael Birke An introduction on the lightweight design of hybrid, circumferential reinforced high-pressure hydraulic cylinders will be presented	CARBON FIBER-BASED POSITIVE STRUCTURAL ELECTRODES: MANUFACTURING & PERFORMANCES Miss. Yasemin Duygu Yücel Carbon fiber based composited electrodes for structural batteries
10:45 - 10:50			A DATA-DRIVEN SCHEME TO SEARCH FOR ALTERNATIVE COMPOSITE MATERIALS Dr. Michihiro Okuyama Quantification of interactions in composites based on machine learning and its use in the search for alternative materials		
10:50 - 11:00					
11:00 - 11:30	Friday Morning Tea / Coffee Break, Posters and Exhibition				
11:30 - 13:10	Aerospace Applications - Session 4	Design and manufacture for multifunctionality - Session 2	Machining & Repair - Session 2	Structural health monitoring - Session 2	Regulations, Energy Harvesting and Storage
11:30 - 11:50	NOVEL STRUCTURE-INTEGRATED HYDROGEN STORAGE SYSTEMS FOR AEROSPACE AND AUTOMOTIVE APPLICATIONS Mr. Jannis Hüppauff Development of an innovativ hydrogen pressure vessel design for structural integration in aerospace and automotive applications	HOLLOW FIBER-REINFORCED STRUCTURAL CORES FOR COMPLEX PART MANUFACTURING Dr. Nicole Motsch-Eichmann The development of structural CFRP cores is presented, enabling complex part design for fiber-reinforced hollow structures.	MULTI-MATRIX CONTINUOUSLY-REINFORCED COMPOSITES FOR WASTE REDUCTION AND REPAIR APPLICATIONS Dr. Dominic Richard Palubiski Utilizing vitrimers in composite design to produce repairable components with continuous fiber reinforcement; a Multi-Matrix Continuously-Reinforced Composite (MMCR)	VIBRO-ACOUSTIC MODULATION MEASUREMENTS FOR A LIFETIME EVALUATION OF COMPOSITE MATERIALS Mr. Erik Willmann Fatigue life monitoring of GFRP samples with vibroacoustic modulation analysis shows a correlation with modulus and results in lifetime prediction	OZONE FUNCTIONALIZED CNTS FOR STRUCTURAL SUPERCAPACITORS Mr. Benjamin Mapleback Ozone functionalised CNTs are prepared as electrode materials for use in composite structural supercapacitors, improving mechanical and electrochemical performance.

Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan

Move to Concurrent Sessions

Self-healing composites - Session 1	Macro-, micro-, and Nano-scale test methods - Session 1	Tribology & Wear - Session 1	Automotive & Rail, Biomedical - Session 1	Fibre reinforced composites - Session 5
<p>HIGHLY FLEXIBLE AND SELF-HEALABLE ELECTRONIC SKIN Prof. Hani Naguib</p> <p>PDMS-MA polymer was blended with PU and electrospinning process was used to induce the film formation. The mechanical and self-healing properties of the resulting film was analyzed</p>	<p>MICRO- AND NANO-MECHANICAL CHARACTERISATION AND MODELLING OF THE LOCAL MATRIX DEFORMATION IN FIBRE-REINFORCED EPOXY Mr. Nathan Klavzer</p> <p>In-situ nano-mechanical characterisation and modelling of a fibre-reinforced epoxy using AFM and micro-DIC</p>	<p>IN-SITU TENSILE FAILURE OF TFP COMPOSITES CHARACTERISED BY X-RAY COMPUTED TOMOGRAPHY Mr. Guowen Sun</p> <p>ATFP-made composite was mechanically tested under tension inside an X-ray microscope to analyse damage mechanisms at different applied loads.</p>	<p>MULTIFUNCTIONAL HYBRID COMPOSITES WITH GRADIENT INTERPHASE Assoc. Prof. Patrick Lee</p> <p>Multifunctional Hybrid Composites with Microstructure Engineering</p>	<p>3D PRINTED CONTINUOUS FIBRE REINFORCED COMPOSITES OF ANISOTROPIC TOPOLOGY OPTIMIZED STRUCTURES Mr. Yiming Huang</p>
<p>REPAIR PERFORMANCE OF DISCONTINUOUS FLAX FIBRE REINFORCED VITRIMERS Mr. Ali Kandemir</p> <p>A vitrimer matrix is reinforced with flax fibres to manufacture sustainable composites by satisfying the principles of a zero-waste hierarchy.</p>	<p>USE OF MICRO-CT TO STUDY THE EFFECT OF VOIDING AND FIBRE MISALIGNMENT ON KINK-BAND FORMATION Mr. Jiraphant Srisuriyachot</p> <p>This presentation shows the potentials of combined Synchrotron and new analysis techniques to give an insight into the material behaviours.</p>	<p>MECHANICAL CHARACTERIZATION OF NEAT AND CHEMICALLY CROSSLINKED UHMWPE FABRICS SUBJECTED TO QUASI-STATIC LOADINGS Mrs. Mahshid Mahbod</p> <p>The mechanical properties of neat and novel chemically processed crosslinked UHMWPE fabrics are characterized subjected to quasi-static loadings.</p>	<p>WEAR BEHAVIOR OF BRAKE ROTOR MADE OF AL-SI-SiC COMPOSITES Dr. Fatma Fairouz</p> <p>Automotive brake rotor was produced from AlSi-SiC composites using stir casting method comparing wear behavior with that of cast iron one</p>	<p>MECHANICAL AND ENERGY ABSORPTION BEHAVIORS OF 3D PRINTED CONTINUOUS CARBON/KEVLAR HYBRID THREAD REINFORCED PLA COMPOSITES Dr. Ali Akmal Zia</p>
<p>EPOXY/CYCLIC OLEFIN COPOLYMER/ CARBON STRUCTURAL COMPOSITE WITH ELECTRO-ACTIVATED SELF-HEALING PROPERTIES Mr. Davide Perin</p> <p>An insight into the novelty of epoxy/cyclic olefin copolymer/carbon structural composite with electro-activated self-healing properties</p>	<p>APPARENT ELASTIC MODULUS OF POLYETHYLENE AND ITS NANOCOMPOSITES MEASURED AT DIFFERENT SCALES Dr. Zainab Al-Maqdasi</p> <p>Apparent modulus is measured by tensile (macroscale), nanoindentation (mesoscale), ImAFM (nanoscale) and variation of values is discussed</p>			<p>PARAMETRIZATION OF T-RTM PROCESS USING NON-CRIMP FABRIC REINFORCE AND INNOVATIVE THERMOPLASTIC RESIN Mrs. Laura Mera Alvarez</p> <p>An optimization of T-RTM process have been done for an innovative acrylic resin using non-crimp fabrics as a reinforcement.</p>
				<p>STRUCTURAL BATTERIES: DESIGNING SOLID POLYMER ELECTROLYTES AND ELECTRODES Ms. Beatriz Maia N/A</p>

Friday Morning Tea / Coffee Break, Posters and Exhibition

Self-healing composites - Session 2	Macro-, micro-, and Nano-scale test methods - Session 2	Tribology & Wear - Session 2	Automotive & Rail, Biomedical - Session 2	Durability, creep and aggressive environments
<p>PROLONGED SELF-HEALING OF LAMINATED COMPOSITES VIA IN SITU THERMAL REMENDING Mr. Alexander Snyder</p> <p>Self-healing fiber-reinforced composites that exhibit sustained in situ recovery while preserving structural integrity during and after repair via thermal remending.</p>	<p>UNDERSTANDING FIBER/MATRIX INTERFACIAL SHEAR STRENGTH MEASUREMENT IN POLYMER-MATRIX COMPOSITES USING PUSH-OUT TEST Dr. Guillaume Seon</p> <p>Microscale residual stresses and their effects on fiber/matrix interfacial shear strength are evaluated using an inverse method and fiber push-out experiment</p>	<p>INTERLAMINAR SHEAR REINFORCEMENT WITH ALIGNED CARBON NANOTUBE REINFORCEMENT IN COMPOSITE LAMINATES Dr. Xiaochen Li</p> <p>An artificial neural network-based method for automated segmentation of fiber breaks using synchrotron radiation-based CT scans that have been human-labeled.</p>	<p>DEVELOPMENT OF A HYBRID PROCESS FOR THE PRODUCTION OF PERSONALIZED AND STRUCTURALLY OPTIMIZED 3D-PRINTED ORTHOSES Mr. Ulrich Blass</p> <p>Development of a hybrid process for the production of personalized and structurally optimized 3D-printed orthoses</p>	<p>EFFECT OF WATER ABSORPTION ON TIME- AND TEMPERATURE-DEPENDENT STATIC STRENGTH OF UNIDIRECTIONAL CFRP LAMINATES Prof. Masayuki Nakada</p> <p>The effect of water absorption on the time- and temperature-dependent flexural static strength of unidirectional CFRP are discussed.</p>

Time	Main Auditorium	Hall 2A	Hall 2B	Meeting Room 1A	Meeting Room 1B
11:50 - 12:10		<p>EXOTHERMIC COMPOSITE MATERIAL LAMINATE PANEL MANUFACTURING TECHNOLOGY FOR RAILWAY VEHICLES USING RESIN INFUSION METHOD Mr. Juyeop Park</p> <p>Exothermic composite material laminate panel manufacturing technology for railway vehicles using resin infusion method</p>	<p>CHARACTERIZATION AND POST-REPAIR PERFORMANCE OF INFUSIBLE THERMOPLASTIC-BASED COMPOSITES UNDER COMPRESSION Dr. Gursahib Singh Bhatia</p> <p>A study on Characterization and Post-Repair Performance of Infusible Thermoplastic-Based Composites under Compression.</p>	<p>CURE MONITORING OF COMPOSITES USING ENCAPSULATED CANTILEVER MICROFIBER BRAGG GRATING Ms. Hanqi Zhang</p>	<p>INFLUENCE OF SEMI-CRYSTALLINE MICROSTRUCTURE ON HYDROGEN PERMEABILITY OF POLY(ETHER-KETONE-KETONE) Mr. Tristan Durand</p> <p>This study analyzes the microstructure parameters of thermoplastic matrices that limit hydrogen leakage from storage tanks.</p>
12:10 - 12:15	<p>MECHANICAL PROPERTIES OF BIO-EPOXY AND RECYCLABLE BIO-EPOXY WITH MOISTURE ABSORPTION STUDY FOR AEROSPACE APPLICATIONS Mrs. Busayamas Phettong</p> <p>New Bio resin to use in new bio composite in aerospace applications</p>			<p>EFFECT OF THE PIEZOCERAMIC EMBEDMENT ON THE ROBUSTNESS AND LAMB WAVES TRANSMISSION OF ACOUSTIC-ULTRASONIC TRANSDUCER Mr. Shankar Galiana</p> <p>Effect of the piezoceramic embedment on the robustness and Lamb waves transmission of acoustic-ultrasonic composite transducer</p>	
12:15 - 12:20		<p>RAPID AND SUSTAINABLE MANUFACTURING OF MULTIFUNCTIONAL COMPOSITES VIA THROUGH-THICKNESS FRONTAL POLYMERIZATION Prof. Mostafa Yourdkhani</p> <p>A novel technique for rapid and energy-efficient manufacturing of multifunctional composites via frontal polymerization is developed.</p>	<p>REPAIR OF IMPACTED CF/PEEK SPECIMENS AT DIFFERENT ENERGY LEVELS Ms. Julieta Barroeta Robles</p> <p>Thermoplastic composites have the potential to be repaired. This work presents repairs of CF/PEEK damaged laminates using the Thermabond(TM) process</p>		<p>ENERGY HARVESTING ANALYSIS OF STRUCTURAL COMPOSITE UTILIZING CONTACT ELECTRIFICATION AND ELECTROSTATIC INDUCTION Mr. Seonghwan Lee</p> <p>Research related to energy harvesting or sensing of structural composites using triboelectric effect</p>
12:20 - 12:25					
12:25 - 12:30					
12:30 - 12:35				<p>MANUFACTURING PROCESS SIMULATION OF A DOUBLE-CURVED COMPOSITE PANEL INTEGRATING PV CELLS Prof. Manuel Lagache</p> <p>Numerical and experimental study describing the development of double-curved composite structures integrating PV cells through a thermocompression process</p>	
12:35 - 12:40			<p>REPAIR OF FRP-STRUCTURES BASED ON TEXTILE PATCHES Mr. David Rabe</p> <p>Textile approach for repairing FRP-parts in a smart way using traditional textile technology.</p>		
12:40 - 12:45					
12:45 - 12:50					
12:50 - 12:55					
12:55 - 13:00					
13:30 - 14:30	Farewell Reception				

Meeting Room 2A	Meeting Room 2B	Meeting Room 3A	Meeting Room 3B	Lagan
<p>SELF-HEALING SHAPE MEMORY POLYIMIDE BASED ON DISULFIDE BOND Prof. Jinsong Leng</p> <p>Self-healing shape memory polyimide can heal cracks many times at high temperatures</p>	<p>TENSILE STRENGTH EVALUATION OF CARBON FIBER BUNDLES USING CAPSTRAN GRIPS AND DIGITAL IMAGE CORRELATION Dr. Pablo Chávez-Gómez</p> <p>We present a technique to evaluate carbon fiber tensile strength using dry fiber bundles, capstan grips and digital image correlation.</p>	<p>AN ANALYTICAL MODEL FOR INTERLAMINAR FRICTION PREDICTION IN PREPREG COMPOSITE Dr. Davide Mocerino</p> <p>An analytical model of friction in prepreg composite during manufacturing processes</p>	<p>4D PRINTED BIOINSPIRED BIODEGRADABLE OCCLUSION DEVICES WITH TAILORED MECHANICAL PROPERTIES Miss. Cheng Lin</p> <p>4D printed bioinspired biodegradable left atrial appendage (LAA) occluders with tailored mechanical properties were developed.</p>	<p>DEGRADATION MECHANISM ANALYSIS OF FRP WITH EPOXY MATRIX SUBJECTED TO CONCENTRATION CYCLING Ms. Tania Natasha Dharmakusumah</p> <p>Degradation Mechanism Analysis of FRP with Epoxy Matrix Subjected to Concentration Cycling</p>
<p>COMPOSITE HEALING - A NEW PERSPECTIVE BASE ON BIO-INSPIRED HELICOIDAL STRUCTURE Dr. Jia Long Liu</p>	<p>INVESTIGATION OF CARBON FIBRE MICRO-STRUCTURE USING ADVANCED NANO- AND MICRO-SCALE CHARACTERISATION TECHNIQUES Dr. Srinivas Nunna</p> <p>This work presents a suite of advanced nano- and micro-scale carbon fibre structure analysis techniques for the development of tailored carbon fibre.</p>	<p>INFLUENCE OF MANUFACTURING DEFECTS ON THE INTERLAMINAR SHEAR STRENGTH OF FIBRE-METAL LAMINATES Dr. Wilfried Liebig</p> <p>Multi-material design can fulfil engineering requirements. But the formation of manufacturing defects can not be avoided and is investigated.</p>	<p>TAILORED SOLID-LIQUID COMPOSITE FOR ENHANCED COMFORT IN ORTHOTIC INSOLES Miss. Dayna Cracknell</p> <p>An orthotic insole made from a fluid-impregnated structure combines tailored stiffness and permeability to redistribute pressure over the plantar surface.</p>	<p>INFLUENCE OF ADDITIVES AND FIBER-LAYUP ON THE AGING BEHAVIOR OF HIGH-TEMPERATURE EPOXY RESIN PREPREG SYSTEMS Mr. Martin Demleitner</p> <p>Influencing of additives and fiber-layup on the aging behavior of high-temperature epoxy resin prepreg systems</p>
		<p>A SURVEY ON YIELD CRITERIA FOR POLYMER MATRIX FIBER - REINFORCED COMPOSITES Mr. Armin Farzin</p> <p>A brief presentation of the methods of research, findings and finally the fields of application for the recently developed yield criteria for FR PMCs.</p>		
		<p>ELECTRO-THERMO-MECHANICAL ANALYSIS OF CB/PLA SAMPLES MADE BY ADDITIVE MANUFACTURING Miss. Laurane Roumy</p> <p>Investigation of the electrical, thermal and mechanical characteristics of a CB/PLA nanocomposite</p>		
		<p>EROSION MODELING OF 2D HOMOGENISED COMPOSITE MODEL Mr. Manish Kumar Das</p> <p>Current work is to predict the erosion behaviour due to solid particle impact on 2D homogenised composite model.</p>		
<p>DEVELOPMENT OF A SELF-HEALING INTERPHASE FOR STRUCTURAL COMPOSITES Miss. Laura Simonini</p> <p>A biodegradable polymeric nanostructured coating of polycaprolactone was deposited on fibers surface to provide self-healing capabilities at the composites interphase</p>	<p>MICRO- AND NANOSCALE MECHANICAL CHARACTERIZATION OF INTERPHASE AND LOCAL MATRIX PROPERTIES IN A METHACRYLIC LAMINATE Ms. Sarah Gayot</p> <p>Mechanical characterization by AFM and nanoindentation of the interphase region and local matrix properties of a glass fiber-reinforced methacrylic composite.</p>		<p>HIGHLY FOLDABLE THIN-PLY STRUCTURES LEVERAGING GLASS FIBER ELASTICITY Ms. Mary Jialu Chen</p> <p>Thin-ply glass fiber-reinforced structures achieve bending curvatures of 1.2 mm, expanding the design space for transcatheter heart valve stents.</p>	<p>EFFECTS OF FREEZE-THAW CYCLES ON FRACTURE TOUGHNESS OF ADHESIVELY BONDED CFRP JOINTS Mr. Keisuke Kitagawa</p> <p>This study aims to elucidate the failure mechanisms of adhesively bonded CFRP joints subjected to freeze-thaw cycles.</p>
<p>SECONDARY FILLERS IMPROVE THE SELF-HEALING AND ELECTROMECHANICAL PROPERTIES OF DIELS-ALDER BASED CARBON COMPOSITES Miss. Fatemeh Sahraeeazartamar</p>	<p>INTERMEDIATE STRAIN RATE TESTING - TOWARDS THE DEVELOPMENT OF OPTIMAL TENSILE SPECIMEN GEOMETRIES Dr. Matt Poole</p> <p>Determination of the effects of specimen geometry on strain rate</p>			<p>INFLUENCE OF WATER ABSORPTION ON STATISTICAL LIFE OF UNIDIRECTIONAL CFRTP UNDER FATIGUE LOADING Mr. Naoya Kawamura</p> <p>The statistical life of resin-impregnated carbon fiber strands under cyclic tension loading is evaluated under dry and wet conditions.</p>
	<p>INTERNAL STRAIN SENSING IN CARBON FIBRE COMPOSITES VIA DIGITAL VOLUME CORRELATION AND IN SITU SYNCHROTRON COMPUTED TOMOGRAPHY Miss. Yeajin Lee</p> <p>Hybrid DVC with in-situ SRCT to identify fibre break evolution via 3D strain mapping</p>		<p>SELF-REINFORCED UHMWPE HOMOCOMPOSITE FOR MEDICAL IMPLANTS Mr. István Nemes-károly</p> <p>Investigation of the production technology and tribological and wear properties of UHMWPE self-reinforced homocomposites</p>	<p>INFLUENCE OF WATER ABSORPTION ON STATISTICAL LIFE OF UNIDIRECTIONAL CFRTP UNDER CREEP LOADING Ryohei Tomita</p> <p>The statistical life of resin-impregnated carbon fiber strands under creep tension loading is evaluated under dry and wet conditions.</p>
Farewell Reception				

Sovereign Manufacturing Automation for Composites Australian Cooperative Research Centre

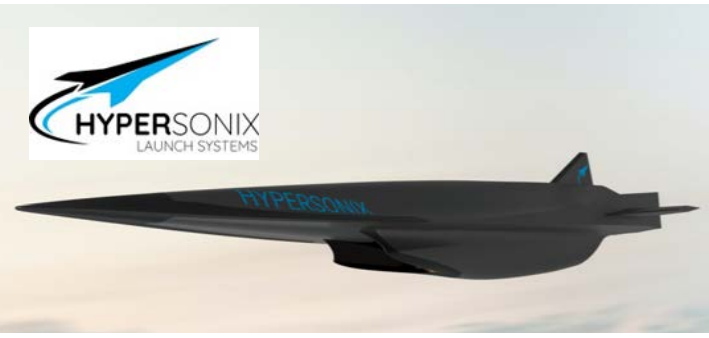


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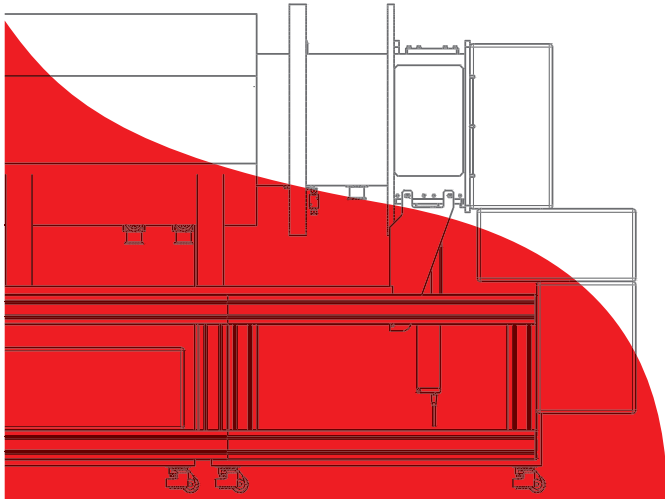
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