SMIC26

INTERNATIONAL CONFERENCE ON SUSTAINABLE MATERIALS AND INNOVATIONS FOR CIRCULARITY

PCAMM





SUSTAINABILITY

Explore ways to protect our planet's resources



MATERIALS

Enhance performance and full integration



INNOVATION

Bring new engineering ideas in advanced key areas

Conference Programme Book

10-11 September 2026

Eldon Building, University of Portsmouth, PO1 2DJ, Portsmouth, UK

SMIC26 Programme Overview

TIME	Thursday 10 September		TIME	Friday 11 September
8:30-9:00	Conference Arrival & Registration		8:30-9:10	Plenary Lecture II Prof. Manjusri Misra
9:00-9:30	Conference Opening & Welcome (Conference Chair; Deputy Vice-Chancellor, R&I; FoT Assoc. Dean, R&I)		9:10-9:40	Keynote Lecture III Prof. Mohammad Jawaid
9:30-10:10	Plenary Lecture I Prof. Amar Mohanty		9:40-10:10	**Coffee Break**
10:10-10:40	Keynote Lecture I Prof. Mikael Skrifvars		10:10-10:40	Keynote Lecture IV Dr. Darshil Shah
10:40-11:10	**Coffee Break**		10:40-12:20	01-009 S3 / 01-012 S5
11:10-12:30	01-009 S1 / 01-012 S2		12:20-13:50	**Lunch**
12:30-14:00	**Lunch**		13:50-14:20	Keynote Lecture V Prof. Ian Hamerton
14:00-14:20	Industrial Talk (Waters/TA Instruments)		14:20-15:20	01-004 S5
14:20-16:00	01-004 S1		15:20-15:50	**Coffee Break**
16:00-16:30	**Coffee Break**		15:50-16:20	Keynote Lecture VI Prof. Cressida Bowyer
16:30-17:00	Keynote Lecture II Prof. Koon-Yang Lee		16:20-17:30	LAB TOUR
17:00-17:40	01-004 S4		17:30	**Conference Closing**
18:30-22:00	**Conference Dinner**			

Detailed Programme

Day 1: Thursday, September 10th, 2026

TIME	EVENT
09:00 - 09:30	**Conference opening & Welcome**
09:30 - 10:10	**Plenary Lecture I:** Circular Bioplastics – A 25-year journey (Room 01-004) - Prof. Amar Mohanty, University of Guelph, Ontario, Canada
10:10 - 10:40	**Keynote Lecture I:** Biocomposites in the Circular Economy – Opportunities and Challenges (Room 01-004) - Prof. Mikael Skrifvars, University of Borås, Sweden
10:40 - 11:10	***Coffee Break***
S1: Bio-based/bio-inspired composite materials (11:10 - 12:30 - Room 01-009) **Chair: Prof. Hom Dhakal**	
11:10 - 11:30	The Effect of Different Stacking Sequence on the Mechanical and Thermal Properties of Banana/Lyocell Hybrid Composite - *Timi Ekubo*
11:30 - 11:50	Shockingly tough: Beetle mandibles for bioinspired shock absorbers - *Luke Malone*
11:50 - 12:10	Hygromorphism and breathability of flax textiles for sportswear applications: characterisation, simulation and bio-inspiration for future designs - *Amélie Moisy*
12:10 - 12:30	Development and experimental characterization of sustainable hybrid sandwich polymer composite: Mechanical, morphological and structural analysis - *Rittin Abraham Kurien*
S2: Surface modifications and various treatment techniques for fibres and composites (11:10 - 12:30 - Room 01-012) **Chair: Dr Abu Saifullah**	

11:10 - 11:30	Polyvinyl Alcohol (PVA) Based Surface Modification on Post-Consumer Textile Waste for Enhanced Reinforcements in Polylactic Acid (PLA) Sustainable Bio-Composites - *Md Ikramul Islam*
11:30 - 11:50	Enzymatically Driven Lignin Coating for Wool Fibers: A Sustainable Route to Interphase-Engineered Epoxy Biocomposites - *Fabrizio Sarasini*
11:50 - 12:10	Valorisation of Finola Hemp Residual Streams through Urea-Based Degumming for Circular Technical Textiles - *May Kahoush*
12:10 - 12:30	A Mechanical Evaluation Technique of Coating Adhesion on Natural Fibers - *Sumanta Prasad Dewri*
12:30 - 14:00	***Lunch***
14:00 - 14:20	**Industrial Talk:** Waters/TA Instruments (Room 01-004)
S1: Bio-based/bio-inspired composite materials (14:20 - 16:00 - Room 01-004) **Chair: Dr Darshil Shah**	
14:20 - 14:40	Direct upcycling of unrecyclable household waste into biodegradable high-performance biocomposites - *Koon-Yang Lee*
14:40 - 15:00	Architecture-driven moisture diffusion in flax–glass hybrid epoxy laminates: an integrated experimental and meso–macro modelling approach - *Muneer Ahmed Musthaq Ahamed*
15:00 - 15:20	Additive manufacturing of shock-absorbing wearables inspired by fruit thorns and plant stems - *Caroline Houriet*
15:20 - 15:40	Effect of Graphene Enhancement on the Moisture- and UV-Induced Degradation of the Thermomechanical Properties of Bio-Based Flax-Fibre-Reinforced Composites: An Experimental Study - *Madhusudan Beeravalli Manju Kumar*
15:40 - 16:00	Reinventing Sustainable Bio-based Leather Alternatives: From Material Innovation to Systemic Circularity - *Wenjie Chen*

16:00 - 16:30	***Coffee Break***
16:30 - 17:00	**Keynote Lecture II:** "Tapping into waste" - Direct upcycling of unrecyclable household waste into biodegradable high-performance biocomposites (Room 01-004) - Prof. Koon-Yang Lee, Imperial College London, UK
S4: Additive manufacturing (polymers and composites) (17:00 - 17:40 - Room 01-004) **Chairs: Dr Khaled Giasin**	
17:00 - 17:20	Formulation-Dependent Extrusion Stability and In Situ Foaming Behaviour in 3D-Printed Starch–based Microporous Structures - *Zia Ullah Arif*
17:20 - 17:40	Natural Fibre Enhanced Soil Composites for Extrusion-Based Digital Construction - *Muhammad Ali*
18:30 - 22:00	**Conference Dinner**

Poster Presentations (All day)	
	UoP#01P: Innovation Under Constraint: Barriers and Enablers in the UK Plastic Packaging Sector - *Liliana Teale*
	UoP#02P: Valorisation of Finola Hemp Residual Streams through Urea-Based Degumming for Circular Technical Textiles - *May Kahoush*
	UoP#03P: Exploring the Synergies between Lean Thinking, Circular Economy, and Life Cycle Sustainability in the Built Environment: An Industrial Building Case Study - *Theodora Mavridou*
	UoP#04P: Exploring the Relationships Between Environmental and Economic Performance in Post-disaster Emergency Shelter across different material choices - *Ilias Gkoumas*

	UoP#06P: Development of Dual-Crosslinked Bio-Based Wood Adhesives from Agro-Industrial Waste Starches for Sustainable Composite Applications - *Nelson Barasa*
	UoP#07P: Life Cycle Assessment of Valorised Aerospace Thermoplastic Waste and Bio-Based Polymers for Circular Aircraft Interior Applications - *Natasha Mohamad*
	UoP#08P: Abrasive Water Jet Drilling of Hybrid CFRP/Elastomer Composite - *Camille Spilmann*
	UoP#09P: Multi-Impact Damage Assessment of Bio-Based Composite Laminate Sandwich Structures Using micro-CT - *Larah Varlese*
	UoP#10P: Poly (vinyl alcohol) Sizing Modified Textile Waste Reinforced Poly (lactic acid) Composites for Engineering Applications - *Md Ikramul Islam*
	UoP#11P: Effect of Microcrystalline Cellulose Inclusion on a Plasticized PVOH–PBAT Blend System for Packaging - *Sakib Khan*
	UoP#12P: Effect of Moisture Absorption under Impact Toughness Behaviour of Banana Fibre Reinforced Composites - *Timi Ekubo*

Day 2: Friday, September 11th, 2026

TIME	EVENT
08:30 - 09:10	**Plenary Lecture II:** Advanced Biocarbons from Sustainable Resources and their Applications in Manufacturing: A Move for 2050 Net Zero Transition (Room 01-004) - Prof. Manjuri Misra, University of Guelph, Ontario, Canada
09:10 - 09:40	**Keynote Lecture III:** "Biocomposites from Date palm Biomass towards Circular Economy" (Room 01-004 - ONLINE) - Prof. Mohammad Jawaid, United Arab Emirates University, UAE
09:40 - 10:10	***Coffee Break***
10:10 - 10:40	**Keynote Lecture IV:** Towards circular design with natural material innovations: cricket as a case study (and beyond) (Room 01-004) - Dr. Darshil Shah, University of Cambridge, UK
S3: Sustainability opportunities in packaging and building & construction (10:40-12:20 - Room 01-009) **Chair: Prof. Koon-Yang Lee**	
10:40 - 11:00	Innovation Under Constraint: Barriers and Enablers in the UK Plastic Packaging Sector - *Liliana Teale*
11:00 - 11:20	Effect of composite manufacturing lamination on the impact performance of hybrid sandwich composites targeting marine and construction applications - *Antigoni Barouni*
11:20 - 11:40	Flexural Behaviour of Natural Textile-Reinforced Mortar Incorporating Recycled Aggregates - *Ali Mahmood*
11:40 - 12:00	Synergistic Micro- and Nanocellulose Reinforcement of Plasticised PVOH/PBAT Blends: Mechanical Performance, Thermal Behaviour and Crystallisation Kinetics for Sustainable Packaging - *Sakib Khan*
12:00 - 12:20	Incinerator Bottom Ash Aggregate – Sustainable Reuse in Concrete Masonry - *Harry Frost*

S5: Recyclability/life cycle assessment (LCA)/valorisation of biobased composites (10:40-12:20 - Room 01-012) **Chair: Prof. Dipa Roy**	
10:40 - 11:00	Circularity-Oriented Screening of Porous Materials for Low-Waste CO_2 Management - *Mohamadou Zoubeirou Hamadama Mouctar*
11:00 - 11:20	Climate change mitigation through the valorisation of UK-grown timber: A dynamic life cycle assessment - *Neha Chandarana*
11:20 - 11:40	Enabling Circular Automotive Plastics through Predictive Modelling and Digital Manufacturing - *Sadik Omairey*
11:40 - 12:00	Exploring the Relationships Between Environmental and Economic Performance in Post-disaster Emergency Shelter across different material choices - *Ilias Gkoumas*
12:00 - 12:20	Life Cycle Assessment of Valorised Aerospace Thermoplastic Waste and Bio-Based Polymers for Circular Aircraft Interior Applications - *Natasha Mohamad*
12:20 - 13:50	***Lunch***
13:50 - 14:20	**Keynote Lecture V:** From Sail to Structure: recycling end-of-life sails by carbon fibre reclamation and composite remanufacture (Room 01-004) - Prof. Ian Hamerton, University of Bristol, UK
S5: Recyclability/life cycle assessment (LCA)/valorisation of biobased composites (14:20-15:20 - Room 01-004) **Chair: Prof. Mikael Skrifvars**	
14:20 - 14:40	Upcycling Agro Industrial Food Waste into Sustainable Composite Materials for Circular Material Applications - *Thomas Mbuya*
14:40 - 15:00	Manufacturing Sustainable Hybrid Thermoplastic Laminates via Novel In-Situ Impregnation of Dry Glass Fibre Fabrics Using a Recycled sGF/PA6 Core - *Aditya Shembekar*
15:00 - 15:20	Aerospace Composites Recycling: Challenges and Opportunities for Circularity - *Arun Kumar Alapati*

15:20 - 15:50	***Coffee Break***
15:50 - 16:20	**Keynote Lecture VI:** Single use plastics and significance of moving towards circularity (Room 01-004) - Prof. Cressida Bowyer, University of Portsmouth, UK
Lab Tour (16:20 - 17:20)	
17:20	**Conference Closing**

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