

16th Rapid Design, Prototyping & Manufacturing Conference (RDPM 2019) 4th–5th April 2019 – Brunel University London

Venue: Wilfred Brown Building (Department of Computer Science)

Brunel University London, Uxbridge

Map: <https://goo.gl/maps/kycdr3e1jpA2>

DAY 1 – Thursday 4th April 2019

13.00-14.00	Coffee/Tea, Registration & Networking			
14.00	Conference Welcome & Introduction Dr Eujin Pei, Brunel University London			
	Opening Address Prof Hamid Bahai, Director of the Institute of Materials and Manufacturing, Brunel University London			
14.20	Session 1: Functional Materials			
<p><i>Session Chair:</i> Dr Phil Hackney University of Northumbria Newcastle</p>	<p><i>The Effect of Internal Structure on the Shape Memory Effect of Shape Memory Polymers</i></p> <p>Choi J & Myant C</p> <p>Dyson School of Design Engineering, Imperial College London, UK</p>	<p><i>Additive Manufacturing Processes Applied to Energetic Materials</i></p> <p>Wolff A^{1,2}, Andrews M¹ & Collet C¹</p> <p>¹Munitions Safety Information Analysis Center, NATO HQ, Belgium & ²ENSTA Bretagne Engineering School, France</p>	<p><i>Investigation on the Suitability of Mechanical Metamaterials in Next Generation Discriminating Mechanisms</i></p> <p>Waheed U & Myant C</p> <p>Dyson School of Design Engineering, Imperial College London, UK</p>	<p><i>Mechanical Analysis of Shape Changing Behaviour of 4D Printed Parts</i></p> <p>Nam S^{1,2} & Pei E^{1,2}</p> <p>¹Institute of Materials and Manufacturing & ²Department of Design, Brunel University London, UK</p>
15.40	Comfort Break			
16.00	Session 2: Process Developments			
<p><i>Session Chair:</i> Dr Connor Myant Imperial College London</p>	<p><i>The Effect of Geometry on Biodegradable Poly(lactic-Acid) Tensile Test Specimens by Material Extrusion</i></p> <p>Ekinci A¹, Johnson AA², Gleadall A¹ & Han X¹</p> <p>¹Wolfson School of Mechanical, Electrical and Manufacturing Engineering & ²Loughborough Design School, Loughborough University, UK</p>	<p><i>Building Additive Manufacturing – Materials Evaluation</i></p> <p>Foster L¹, Hackney PM¹, Viney A², Kelly K¹ & Richardson A¹</p> <p>¹Department of Mechanical & Construction Engineering, Northumbria University, UK & ²Platinum Electrical Engineering Ltd, UK</p>	<p><i>Fabrication of the Continuous Carbon Fibre Reinforced Plastic Composites by Additive Manufacturing</i></p> <p>Lu Y, Poh GK, Gleadall A, Zhao LG & Han X</p> <p>Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, UK</p>	<p><i>Minimal Waste Galvanometer Field Correction for Additive Manufacturing</i></p> <p>King BA¹, Bennett GR² & Rennie AEW¹</p> <p>¹Engineering Department, Lancaster University, UK & ²Euriscus Ltd, UK</p>
17.20	Day 1 Conference Close			
18.30	Optional Campus Tour of Brunel University London (and walk to Restaurant)			
19.30	EVENING MEAL / SOCIAL ACTIVITY			
	<p>Raj Restaurant 40 Windsor St, Uxbridge UB8 1AB Phone: 01895 810893 Map: https://goo.gl/maps/yhC7DT6L9GU2</p>			

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DAY 2 – Friday 5th April 2019

08.30-09.00	Coffee, Registration & Networking			
09.00	Conference Opening & Introduction Dr Allan Rennie, Lancaster University			
09.05	Introduction to Additive Manufacturing Projects at Brunel Dr Eujin Pei & Dr Israt Kabir, Brunel University London			
09.25	Session 3: Design, Modelling and Analysis for AM			
<p><i>Session Chair:</i> Dr David Cheneler Lancaster University</p>	<p><i>Design for Material Extrusion on Mesh Fabrics</i></p> <p>Loh GH & Pei E</p> <p>College of Engineering, Design and Physical Sciences, Brunel University London</p>	<p><i>Multi-Variable Regression Analysis for Optimised Mass Calculation of FDM 3D Printed Parts</i></p> <p>Doicin CV¹, Ulmeanu ME¹, Rennie AEW² & Lupeanu E³</p> <p>¹Faculty of Engineering and Management, University Politehnica of Bucharest, Romania, ²Engineering Department, Lancaster University, UK & ³National Institute of Geriatrics and Gerontology, Bucharest, Romania</p>	<p><i>Design for Additive Manufacturing Considerations for 3D Printing of Conductive Tracks Using Fused Filament Fabrication</i></p> <p>Chorbikj M & Cavallaro M</p> <p>Design Department, College of Engineering, Design and Physical Sciences, Brunel University London UK</p>	<p><i>Additive Manufacture of Passive Acoustic Filters: A Feasibility Study</i></p> <p>Jiang P^{1,2} & Atherton M^{1,2}</p> <p>¹Institute of Materials and Manufacturing & ²Department of Mechanical and Aerospace Engineering, Brunel University London, UK</p>
10.45	Morning Refreshment Break			
11.10	Session 4: Medical / Biomaterials			
<p><i>Session Chair:</i> Dr Xiaoxiao Han Loughborough University</p>	<p><i>3D Biocompatible and Biodegradable Nerve Scaffolds</i></p> <p>Xu Z, Vyas C & Bártolo P</p> <p>School of Mechanical, Aerospace and Civil Engineering, University of Manchester, UK</p>	<p><i>Additive Manufacturing: A Growing Platform to Replace, Reduce and Refine Animal Experiments</i></p> <p>Oberoi G^{1,2}, Kramer A-M¹, Friske J³, Schaffarich MP¹, Plasenzotti R¹, Hermann A^{1,2}, Moscato F^{1,4} & Unger E¹</p> <p>¹Medical University of Vienna, Austria, ²Austrian Cluster for Tissue Regeneration, Austria, ³MR Centre of Excellence AKH, Austria & ⁴Ludwig Boltzmann Cluster for Cardiovascular Research, Austria</p>	<p><i>Plasma-Treated Versus Non-Treated Polycaprolactone Scaffolds for Bone Applications using Plasma-Assisted Bioextrusion System</i></p> <p>Fernandes S, Liu F & Bártolo P</p> <p>School of Mechanical, Aerospace and Civil Engineering, University of Manchester, UK</p>	<p><i>Development of a Systematic Design Procedure to Support the Digitised Upper-Limb Splinting Approach</i></p> <p>Asanovic I, Millward H & Lewis A</p> <p>Wales Centre for Advanced Batch Manufacture (CBM), University of Wales, UK</p>
12.30	Lunch			

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13.20	Session 5: Materials Developments – Metallic AM			
<p><i>Session Chair:</i> Dr Yingtao Tian Lancaster University</p>	<p><i>Development of a Function-Integrated Pulse Jet Engine by Using Selective Laser Melting</i></p> <p>Meyer T¹, Musienko E¹, Fette M^{1,2} & Wulfsberg J¹</p> <p>¹Laboratory for Manufacturing Engineering, Helmut Schmidt University, Germany & ²Composite Technology Center, AIRBUS Operations GmbH, Germany</p>	<p><i>Preparation of Aerated Titanium Powder Slurries for 3D Printing of Porous Structures for Orthopaedic Implants</i></p> <p>Forber TJ & Kennedy AR</p> <p>Engineering Department, Lancaster University, UK</p>	<p><i>The Tribological Performance of SLM 316L Stainless Steel under Dry Sliding Conditions</i></p> <p>Bahshwan M^{1,2}, Myant³ C & Reddyhoff T²</p> <p>¹Department of Mechanical Engineering, University of Jeddah, Saudi Arabia ²Department of Mechanical Engineering & ³Dyson School of Design Engineering, Imperial College London, UK</p>	<p><i>Repurposing of Metal Support Structures to Form Metal Powder</i></p> <p>Powell D¹, Rennie AEW¹, Molyneux A², Burns N^{1,2} & Geekie L²</p> <p>¹Engineering Department, Lancaster University, UK & ²Croft Additive Manufacturing Ltd, UK</p>
	14.40	Comfort Break		
15.00	Session 6: Education, Communication and Benchmarking in AM			
<p><i>Session Chair:</i> Dr Mihaela-Elena Ulmeanu Politehnica University Bucharest</p>	<p><i>Investigating the Communication of 4D Printing among Product Designers and Manufacturing Engineers</i></p> <p>Azhar FE & Pei E</p> <p>Design Department, College of Engineering, Design and Physical Sciences, Brunel University London, UK</p>	<p><i>3DP Benchmark Model for Evaluation of Dimensional Accuracy Against a Pre-Existing Product</i></p> <p>Air A & Wodehouse A</p> <p>Design Manufacture and Engineering Management, University of Strathclyde, UK</p>	<p><i>Implementing Additive Manufacturing Education and Culture in Design Schools</i></p> <p>Bolzan P, Gaetani F & Bianchini M</p> <p>Design Department, Politecnico di Milano, Italy</p>	<p><i>Computational Concept Canvas. A tool for Spreading Personalisable Design</i></p> <p>Malakuczi V</p> <p>Sapienza Università di Roma, Italy</p>
	16.20	<p>Presentation of Prizes Dr Allan Rennie, Lancaster University & Mr Mo Isap, IN4.0 PLC</p> <p>Conference Close Dr Eujin Pei, Brunel University London</p>		