15th Rapid Design, Prototyping & Manufacturing Conference (RDPM 2017)
27th–28th April 2017 – Northumbria University

Venue: CCE1 402, Business and Law Building, City Campus East, Northumbria University, Newcastle upon Tyne

DAY 1 – Thursday 27th April 2017

14.00-14.30	**Coffee/Tea, Registration & Networking**		
14.30	**Conference Welcome & Introduction** Dr Phil Hackney, Northumbria University		
	Opening Address Prof Glen McHale, Pro Vice Chancellor Engineering and Environment, Northumbria University		
14.45 Session Chair: Dr John Hardy Lancaster University	**Session 1:** ***Medical / Healthcare Aids***		
	Giving Patients What They Want: Proposing Additive Manufacture as a Method to Design and Fabricate Wrist Splints Pyatt C, Kelly S, Paterson AMJ, Bibb RJ & Sinclair M Loughborough Design School, Loughborough University, UK	***A Case Study of Finger-Splint Design Automation*** Asanovic I, Millward H & Lewis A Wales Centre for Advanced Batch Manufacture (CBM), University of Wales, UK	***Compressive Properties of Additively Manufactured Materials Compared to Foams Traditionally Used for Blunt Force Trauma Protection*** Rossiter JD, Johnson AA & Bingham GA Loughborough Design School, Loughborough University, UK
16.00	**Comfort Break**		
16.15 Session Chair: Dr Hadley Brooks University of Central Lancashire	**Session 2:** *Process / Materials Developments*		
	Production of Organometallic Polymer-Based Biomaterials by Laser Two-Photon Polymerisation Balčiūnas E[1,2], Baldock S2, Baltriukiene D[1] & Hardy JG[2] [1]Institute of Biochemistry, Life Sciences Centre, Vilnius University, Lithuania [2]Department of Chemistry, Lancaster University, UK	***Comparison of Galvanometer and Polygon Scanning Systems on Component Production Rates in Selective Laser Sintering*** King BA[1], Bennett GR[2] & Rennie AEW[1] [1]Engineering Department, Lancaster University, UK [2]Euriscus Ltd, UK	***Building of Polyurethane Foams Structures Using Additive Manufacturing Technology*** Oppon CE & Hackney PM Department of Mechanical and Construction Engineering, University of Northumbria, UK
17.30	**Day 1 Conference Close**		
	Optional tour of Northumbria University Faculty of Engineering and Environment		

19.30	**EVENING MEAL**
	Raj Tandoori, 25-27 Pudding Chare, Newcastle NE1 1UF http://rajnewcastle.co.uk/Raj_Tandoori/Welcome.html

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DAY 2 – Friday 28th April 2017

09.00-09.30	**Coffee, Registration & Networking**		
09.30	**Conference Opening & Introduction** Dr Phil Hackney, Northumbria University & Dr Allan Rennie, Lancaster University		
09.40	**Keynote Speech** Mr Paul Croft, Director, Ultimaker GB and Founder CREATE Education Programme ***Unlocking the Potential of 3D Printing / Additive Manufacturing***		
10.10 Session Chair: Dr Eujin Pei Brunel University	**Session 3:** ***Additive Manufacturing Research / Potential***		
	The Current Landscape for Additive Manufacturing Research: A Review to Map the UK's Research Activities in AM Internationally and Nationally Myant C & Wu B Dyson School of Design Engineering, Imperial College London, UK	***Economic Analysis of Plastic Additive Manufacturing for Production of End Use Products: A Preliminary Study*** Zhu Z[1], Pradel P[2], Bibb R[2] & Moultrie J[1] [1]Department of Engineering, Cambridge University, UK [2]Loughborough Design School, Loughborough University, UK	***Complexity Is Not For Free: The Impact of Component Complexity on Additive Manufacturing Build Time*** Pradel P[1], Bibb R[1], Zhu Z[2], & Moultrie J[2] [1]Loughborough Design School, Loughborough University, UK [2]Department of Engineering, Cambridge University, UK
11.25	**Morning Refreshment Break**		
11.45 Session Chair: Dr Daniel Richards Lancaster University	**Session 4:** ***Product Modelling / Simulation***		
	Utilising Multi-Material Polyjet Additive Manufacturing for the Design and Fabrication of Prototype Flood Protection Door Seals Walsh S, Rennie AEW, Abram T, Snape M & Roberts L [1]Engineering Department, Lancaster University, UK [2]William M Snape Manufacturing Services (UK) Ltd, UK	***A Performance Assessment of a Developed Mesh-Generating Algorithm: A Computer-Aided Design Modelling Process to Support Progression within Additive Manufacturing*** Gardner JA, Bingham GA & Paterson AM Loughborough Design School, Loughborough University, UK	***Time-Dependant Human Mastication Simulation of Agricultural Products and Its Rapid Prototyping Aided Evaluation: A Case Study for Pecan Kernel Mastication*** Celik HK[1], Rennie AEW[2], Er K[3], Abram T[2] & Akinci I[1] [1]Department of Agricultural Machinery, Akdeniz University, Turkey [2]Engineering Department, Lancaster University, UK [3]Department of Orthodontics, Faculty of Dentistry, Akdeniz University, Turkey
13.00	**Lunch**		
13.45 Session Chair: Dr Abby Paterson Loughborough University	**Session 5:** ***Multi-Material / Functionally Graded Additive Manufacturing***		
	Building a Conceptual Understanding of Functionally Graded Additive Manufacturing (FGAM) and its Limitations Loh G & Pei E College of Engineering, Design and Physical Sciences, Brunel University, UK	***Designing Digital Materials with Volumetric Gradients*** Richards D[1], Abram T[2] & Rennie AEW[2] [1]Lancaster Institute for the Contemporary Arts, Lancaster University, UK [2]Engineering Department, Lancaster University, UK	***Sintering of 3D Printed Metal, Ceramic and Glass Multi-Material Parts*** Brooks H, Clarkson P, Fairclough D & Davies P School of Engineering, University of Central Lancashire, UK
15.00	**Presentation of Prizes** Dr Allan Rennie, Lancaster University & Mr Graham Bennett, Euriscus Ltd		
	Conference Close Dr Phil Hackney, Northumbria University		