



P70 - Polymer Engineering International/ UK-China AMRI Research Workshop



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The Polymer Society
A Division of the Institute of Materials, Minerals and Mining

Tuesday 18 September

Norcroft Conference Centre, University of Bradford

8.55 **Welcome**

Processing Science & Technology 1 Chairs: *Gerrit Peters & Roberto Pantani*

- T1 9.00 Cell morphology on injection-molded PMMA microstructures as function of surface energy
Clemens Holzer, University of Leoben, Austria
- T2 9.20 Slip of polypropylene melts over different laser-induced periodic nano-structures in thin-wall injection molding
Giovanni Lucchetta, University of Padua, Italy
- T3 9.35 Development of highly conductive hybrid composite
Aminul Islam, Technical University of Denmark, Denmark
- T4 9.50 Extrusion melt flow characterized in real time using in-line rheo-optical techniques
Sebastião Canerovolo, UFSCar, Brasil
- T5 10.05 In-process materials characterization during small-scale extrusion under constant operating conditions
Jose Covas, University of Minho, Portugal

10.25 **Coffee & Posters/ Exhibition/ Photo 1**

Processing Science & Technology 2 Chairs: *Ben Whiteside & Jose Covas*

- T6 11.05 Melt Processing of Polymers for Pharmaceutical Applications
Adrian Kelly, Polymer IRC, University of Bradford, UK
- T7 11.20 Preparation of flexible polymer sensors by Spatial Confining Forced Network assembly
Xiaolong Gao, Beijing University of Chemical Technology, China
- T8 11.35 Selective Laser Sintering of Polyamide11/ Barium Titanate Piezoelectric Composite Powder
Ning Chen, Sichuan University, China
- T9 11.50 Continuous Manufacturing of Cocrystals Using Solid State Shear Milling Technology
Sachin Korde, Pharmaceutical Engineering Science, University of Bradford, UK
- T10 12.00 Injection moulding and micro-injection molding with local cavity temperature control
Roberto Pantani, University of Salerno, Italy
- T11 12.15 3D Printing: recent advances in material developments
Ludwig Cardon, University of Gent, Belgium

12.35 **Lunch & Exhibition, Posters**

Processing Science & Technology 3 Chairs: *Ludwig Cardon & Giovanni Lucchetta*

- T12 13.30 Advances in Injection Moulding Simulation
Russ Speight, Autodesk Moldflow, Australia
- T13 13.50 Fibre Dispersion and Fibre Length Distribution in Long Glass Fibre Reinforced PP Injection Mouldings
Millan Gilson, Polymer IRC, University of Bradford, UK
- T14 14.00 Wittmann Battenfeld 10th Anniversary Showcase
Barry Hill, Wittmann Battenfeld Ltd, UK
- T15 14.10 The use of micron scale surface features in the fight against counterfeit goods
Phil Harrison, Sofmat Ltd, UK
- T16 14.20 Roll-to-roll processing for flexible devices
Hazel Assender, Oxford University, UK
- T17 14.30 UK government strategy aligned to polymer activities; and how the Knowledge Transfer Network can support you
Sally Beken, Materials KTN, UK

14.45 **Coffee & Posters/ Exhibition**

Processing Science & Technology 4 Chairs: *Clemens Holzer & Guangian Li*

- T18 15.15 Properties depend on structures; what is the origin of these structures?
Gerrit Peters, Technical University, Eindhoven, Netherlands
- T19 15.35 Reactive Jet Impingement: A New 3D Printing Process for Cell filled Gels
Kenny Dalgarno, Newcastle University, UK
- T20 15.50 Comparison of biophysical properties characterized for microtissues cultured using microencapsulation and liquid crystal based 3D cell culture techniques
Mansour Youseffi, Polymer IRC, University of Bradford, UK

T21	16.00	Smart hydrogels for controlled drug delivery <i>Bana Shriky, Polymer IRC, University of Bradford, UK</i>
T22	16.10	Molecular Design of Highly-Stretchable Ionomers <i>Quan Chen, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China</i>
T23	16.20	Development of improved bio-based polymeric compounds for durable applications <i>Nikolaos Kassos, Polymer IRC, University of Bradford /Floreon Ltd UK</i>
T24	16.30	Design, Preparation and Application of Biobased Itaconic Acid Ester typed Elastomer Materials <i>Xinxin Zhou, Beijing University of Chemical Technology</i>
T25	16.40	Flow induced crystallisation in polymers: from molecules to processing <i>Richard Graham, University of Nottingham, UK</i>
	16.50	Polymer IRC Laboratory demonstrations
	18.15	Tour and Reception, City Hall Bradford
	19.00	Conference Banquet – City Hall Bradford, with the Lord Mayor & Deputy Ambassador to the UK, PR China

Wednesday 19 September

Norcroft Conference Centre, University of Bradford

	9.00	STRATEGY Chairs: <i>Phil Coates & Guangxian Li</i> <i>Guangxian Li, Sichuan University/ Director AMRI;</i> <i>Qin Zhu, Minister of the Chinese Embassy in the UK;</i> <i>Matthew Rous, CEO, China Britain Business Council</i> <i>Jiansheng Du, UK Department of International Trade</i> <i>Kersten England, Chief Executive Bradford City Council</i> <i>Phil Coates, Director Polymer IRC & Science Bridges China/ AMRI</i>
		Med Tech 1 Chairs: <i>Fin Caton-Rose & Takeshi Kikutani</i>
W1	9.50	Leeds City Region Medtech <i>John Fisher, Director MeDe Innovation, University of Leeds, UK</i>
W2	10.10	The Development of Next Generation Bioresorbable Coronary Scaffold (ArterioSorb™) <i>Kadem Al-Lamee, Arterius Ltd, UK</i>
W3	10.20	Electrospinning of Polymer Solutions for Biomedical Applications <i>Pete Twigg, Polymer IRC University of Bradford, UK</i>
W4	10.30	Regenerated Silk Fibroin Fibres and Textiles for Medical Applications <i>David Farrar, Xiros Ltd, UK</i>
	10.40	Coffee & Posters/ Exhibition - Conference Photograph
		Processing Science & Technology 5 Chairs: <i>David Farrar & Yongfeng Men</i>
W5	11.10	Network structure determines failure property of semicrystalline polymers <i>Yongfeng Men, Changchun Institute of Applied Chemistry Chinese Academy of Sciences, China</i>
W6	11.30	Nanoindentation analysis of oriented polypropylene <i>John Sweeney, Polymer IRC University of Bradford, UK</i>
W7	11.40	Progress on Highly Oriented Poly (lactic acid) Produced by Solid-phase Die Drawing: Structure, Mechanical and Biological Properties <i>Lin Ye, Sichuan University, China</i>
W8	11.50	Tailored Fixation Devices Via Oriented Polymers with Shape Memory <i>Fin Caton-Rose, Polymer IRC, University of Bradford, UK</i>
W9	12.00	Finite element modelling of solid-phase tube die-drawing <i>Paul Spencer, Polymer IRC, University of Bradford, UK</i>
W10	12.10	Multicomponent Fiber Processing for Novel Applications <i>Takeshi Kikutani, Tokyo Institute of Technology, Japan</i>
	12.30	Lunch & Exhibition & Posters
		Med Tech 2 Chairs: <i>Adrian Kelly & Steve Rimmer</i>
W11	13.30	Determination of material distributions in drug delivery systems <i>Jiwen Zhang, Shanghai Institute Materia Medica Chinese Academy of Sciences, China</i>
W13	13.50	Destabilization of polyacrylic acid gel by counter ion replacement <i>Anant Paradkar, Pharmaceutical Engineering Science, University of Bradford, UK</i>
W14	14.00	Enhanced bioavailability of Curcumin loaded nano-hydroxyapatite injectable paste <i>Niten Jadav, Pharmaceutical Engineering Science, University of Bradford, UK</i>
W15	14.10	Multi-functional Materials for the Manufacture of Antimicrobial Medical Devices <i>Paul Hutton, University of Sheffield, UK</i>
W16	14.30	Orthopaedic compression screws formed from body-temperature reverting, shape-memory polymers <i>Brian Thomson, Polymer IRC, University of Bradford, UK</i>

W17	14.40	Mechanical Assessment and Preclinical Development of Shape Memory Sutures: A MeDe Innovation Collaboration <i>Tony Herbert, Leeds University, UK</i>
W18	14.50	Material Characterisation of Tubular Electrospun PCL and PLGA for Vascular Tissue Engineering <i>Farshid Sefat, Polymer IRC, University of Bradford, UK</i>
W19	15.00	EfferShield technology Innovative approach for manufacturing of effervescent product <i>Sudhir Pagire, Pharmaceutical Engineering Science, University of Bradford, UK</i>
	15.00	Coffee & Posters/ Exhibition
		Med Tech 3 Chairs: <i>Jiwen Zhang & Anant Paradkar</i>
W20	15.30	Highly branched poly(N-isopropyl acrylamide) responsive to fungi <i>Steve Rimmer, Materials Chemistry, University of Bradford, UK</i>
W21	15.50	Hemosome formed by protein-polymer conjugate assembly as oxygen carrier for cancer therapy <i>Yubin Huang, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China</i>
W22	16.05	Using smart scaffolds to promote stem cell homing and tissue for in situ repair of cartilage lesions caused by trauma and early osteoarthritis <i>Aileen Crawford, University of Sheffield, UK</i>
W23	16.15	Sustainable development of polymer materials: stability and degradability as well as utilization of solar energy and renewable resources <i>Yi Dan, Sichuan University, China</i>
W24	16.25	Harnessing nano-patterning and incorporation of antimicrobials to manufacture orthopaedic trauma implants that resist microbial colonisation <i>Maria Katsikogianni Polymer IRC, University of Bradford, UK</i>
W25	16.35	Bio-inspired Anti-oxidant Defence System Constructed By Electrospun F127-based Fibers <i>Qiang Shi, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China</i>
W26	16.45	Chain Structure design, synthesis and applications of polyvinyl alcohol <i>Jiang Long, Sichuan University, China</i>
W28	16.55	Incorporation of Conjugated Polyelectrolytes with Surfactant/Sol Systems – Theoretical, Photophysical and Scattering Studies <i>Beverly Stewart, University of Bradford, UK</i>
W27	17.05	Development of Universal (Viscometric) Size Exclusion Chromatography Calibrated by DOSY NMR <i>Tom Swift, Materials Chemistry, University of Bradford, UK</i>
W12	17.15	Exploiting shape memory properties of polymers in the development of drug eluting soft tissue fixation devices <i>Karthik Nair, Polymer IRC, University of Bradford, UK</i>
	17.25	Brief Laboratory visit
	18.30	Banquet - Midland Hotel

Thursday 20 September

Norcroft Conference Centre, University of Bradford

		Processing Science & Technology 6 Chairs: <i>Hesheng Xia & Ben Whiteside</i>
Th1	9.00	Molecularly Engineered Non-particulate and Continuous Ultra-Low Density Hybrid Silica Aerogels: Superstrong and Superinsulative <i>Chul Park, University of Toronto, Canada</i>
Th2	9.20	Microcellular Foam extrusion and reducing Carbon footprint, improving Sustainability <i>Simon Dominey, MuCell Extrusion, USA</i>
Th3	9.30	Preparation of PVDF film with high performance by Solid State Shear Milling (S3M) and Biaxial Stretching <i>Li Li, Sichuan University, China</i>
Th4	9.40	Polymers for the rolling bearing applications in the variety of industries <i>Karolis Vilcinskas, University of Bradford/ BNL Ltd, UK</i>
Th5	9.50	Exchange Researches in University of Bradford ---study on polymer blends in micro-injection molding and die-drawing <i>Qi Yang, Sichuan University, China</i>
Th6	10.00	In-situ Shrinking Microfibers Enhance Strain Hardening and Foamability of Linear Polymer <i>Patrick Lee, University of Toronto, Canada</i>
	10.15	Coffee & Posters/ Exhibition
		Processing Science & Technology 7 Chairs: <i>Chul Park & Russ Speight</i>
Th7	10.45	Self-Healing Polyurethane Elastomer Materials <i>Hesheng Xia, Sichuan University, China</i>

Th8	11.05	A method for predicting geometric characteristics of polymer deposition during fused-filament-fabrication <i>Michael Hebda, Polymer IRC, University of Bradford, UK</i>
Th9	11.15	Film characterisation for the development of prototype automated stretch wrapping system <i>Cristina Tuinea-Bobe, Polymer IRC, University of Bradford, UK</i>
Th10	11.25	Stereocomplex formation crystalline structure of long chain branched poly (L-lactic acid)/poly (D-lactic acid) blends: Effect of melting temperature <i>Zhongguo Zhao, Sichuan University, China/ Polymer IRC, University of Bradford, UK</i>
Th11	11.35	Process fingerprinting for optimised production of thermoplastic microneedle arrays using ultrasonic microinjection moulding <i>Mert Gulcur, Polymer IRC, University of Bradford, UK</i>
Th12	11.45	Three-Dimensional Porous Carbon Materials with Tunable Super-Wettability toward Oil Spill Remediation and Electrochemical Capacitive Energy Storage <i>Wei Zhang, Sichuan University, China</i>
Th13	11.55	Moulding of micro and nano scale features for surface functionalities <i>Ben Whiteside, Polymer IRC, University of Bradford, UK</i>
Th14	12.15	Thanks <i>Phil Coates, Polymer IRC, University of Bradford, UK</i>
	12.20	Lunch/ Exhibition & Posters
		Social Event
	13.30	Coach departs travel through Yorkshire Dales countryside Arrive at Harewood House House tour Reception & Meal
	20.30	Coach returns

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