

CONFERENCE PROGRAMME

**RSC: BIOMATERIALS CHEMISTRY SPECIAL INTEREST
GROUP
ANNUAL CONFERENCE**

11th and 12th January 2017.

VENUE: ULSTER UNIVERSITY (JORDANSTOWN CAMPUS).

Conference Sponsors:

**Biomaterials
Science**



visit
Belfast



Iom³
The Institute of Materials,
Minerals and Mining

ThermoFisher
SCIENTIFIC



RSC BIOMATERIALS CHEMISTRY SPECIAL INTEREST GROUP WELCOME

It is our pleasure to welcome you to the 7th RSC Biomaterials Chemistry Special Interest Group Annual Conference here at Ulster University, Northern Ireland.

The RSC Biomaterials Chemistry Special Interest Group was set up in 2005 to provide a focus for people in UK universities and industry working on the synthesis, manufacture and characterisation of biomaterials.

The group's aims include:

- To create a forum for chemists interested in biomaterials to make contact with each other and with people from other disciplines including clinicians, bioscientists, engineers and industrialists.
- To encourage networking, the exchange of information and the dissemination of results amongst members of the Subject Group and other relevant RSC and non-RSC groups.
- To assist in the public understanding of the social, educational and economic importance of biomaterials and the development of medical devices.

These meetings are now held annually providing a focal point in the calendar for the group's activities and this is the 7th such event. The meeting is designed to foster a friendly environment for early stage researchers to present their work, receive important feedback, shape the future of research in this important and growing area of chemistry and form networks that will serve them well for the rest of their careers. Sessions also include presentations designed to inspire from plenary speakers who are international leaders in the field.

We know that the local organising committee has provided an ideal forum for excellent talks, networking and meeting with colleagues and friends!

Warmest regards,

Chris Sammon

On behalf of RSC BMC-SIG.

RSC Biomaterials Chemistry Special Interest Group Information

Council Office Bearers

Chair: Dr Sanjukta Deb

Secretary: Prof Chris Sammon

Treasurer: Prof Alberto Saiani

Council Members

Dr Julian Braybrook

Prof Liam Glover (representing UKSB)

Dr Andrew Lewis

Prof Fiona Medrum

Prof Steve Rimmer

Dr Paul Roach

Dr Sebastian Spain

Ulster University Local Organising Committee 2017

Dr. Adrian Boyd (Conference Chair)

Prof. Brian J. Meenan

Dr. Dorian Dixon

Dr. Patrick Lemoine

Dr. George Burke

Mrs Leanne Robinson

Mrs Naomi Lowry

Mrs Fiona Rogan

Miss Emma Harrison

Conference Prizes

The Northern Ireland BioEngineering Society (NIBES) and the Institute of Materials, Minerals and Mining (IOM³) local section are both sponsoring prizes for the best oral presentations.

The RSC Biomaterials Science Journal will be sponsoring prizes for the best poster presentations.

RSC BIOMATERIALS SPECIAL INTEREST GROUP CONFERENCE PROGRAMME 2017

Day 1 – Wednesday 11th January

9.00 am – 9.40 am Registration (Tea/Coffee on arrival)
(Poster Setting Up Time)

9.40 – 9.45 am Welcome note and opening remarks

Prof. Cathy Gormley-Heenan Pro-Vice-Chancellor (Research and Impact)
Ulster University

9.45 am – 11.20 am Session 1

Time	Presentation
9.45 – 10.05	Plasma Induced Modification of Biomaterials Invited Talk – Prof. BJ Meenan (Ulster University)
10.05 – 10.20	Phosphate based glasses with antimicrobial resistance for medical application A Lapa (University of Erlangen-Nuremburg / Lucideon Ltd (UK))
10.20 – 10.35	<i>In vivo</i> safety and Efficacy Testing of a Thermally Triggered Injectable Hydrogel, loaded with Hydroxyapatite Nanoparticles, to Promote Repair and Regeneration of Bone Defects A Thorpe (Sheffield Hallam University)
10.35 – 10.50	Synchrotron Techniques and Exciting Possibilities for Biomaterials Characterisation Dr JE Parker (Diamond Light source, Harwell Science and Innovation Campus (UK))
10.50 – 11.05	Controlling drug release from silicone oil tamponades: strategies to combat proliferative vitreoretinopathy after retinal detachment. Dr. Helen Cauldbeck (University of Liverpool)
11.05 – 11.20	Novel Human Pluripotent Stem Cell Expansion Polymers: A High-Throughput Micro Array Discovery Campaign Dr L Burroughs (University of Nottingham)

11.20 am – 11.40 am Coffee/Tea (Final Poster Setting Up Time)

11.40 am – 1.00 pm Session 2

Time	Presentation
11.40 – 12.10	Modular biomaterials and cell-assemblies in regenerative medicine Keynote Presentation – Dr. D Zeugolis (NUI Galway)
12.10 – 12.25	Tunable injectable pNIPAM-Laponite® based hydrogels for musculoskeletal regeneration A Essa (Sheffield Hallam University)
12.25 – 12.40	Efficient <i>in situ</i> nucleophilic thiol-yne click chemistry for the synthesis of strong hydrogel materials with tuneable properties LJ MacDougall (University of Warwick)
12.40 – 1.00	Nanoscale Definition of Material Properties for Enhanced Control of Biological Responses Invited Talk – Dr. J Curran (University of Liverpool)

1.00 pm – 1.50 pm Lunch and Poster Viewing (Judging)

1.50 pm – 3.15 pm **Session 3**

Time	Presentation
1.50 – 2.10	Mineralization of hydrogels with carbonate for bone tissue engineering Invited Talk – Dr. T Douglas (Ghent University, Belgium)
2.10 – 2.25	BMP-2 Loaded, Collagen I and Hydroxyapatite Modified Biodegradable Membranes Prof B Garipcan (Bogazici University, Turkey)
2.25 – 2.40	Covalent immobilization of nisin using atmospheric pressure plasma induced grafting Dr J Aveyard (University of Liverpool)
2.40 – 2.55	Improved Adhesive Strength of a Novel Aneurysm Filler S Brady (Dublin City University)
2.55 – 3.15	Process-Performance Relationships for Bioresorbable Polymers used in Bone Fixation and Tissue Scaffolds Invited Talk – Prof. F Buchanan – (Queen's University Belfast)

3.15 pm – 3.45 pm Coffee/Tea and Poster Viewing (Judging)

3.45 pm – 5.00 pm **Session 4**

Time	Presentation
3.45 – 4.05	Tailoring (Meth)acrylate based Polymer-Glass Hybrids for Bone Regeneration Invited Talk – Dr T K Georgiou (Imperial College)
4.05 – 4.25	The Chemistry of Materials for Directing Biological Responses Invited Talk – Dr. P Roach (Loughborough University)
4.25 – 4.40	Conducting polymer composites for triggered drug delivery applications Dr G Srinivasan (Queens University Belfast)
4.40 – 5.00	Poly-ϵ-lysine Gels for Corneal Wound Therapy Dr. R Lace (University of Liverpool)

5.00 pm RSC Biomaterials SIG AGM

7.30 pm Conference Dinner (Europa Hotel Belfast)

Day 2 – Thursday 12th January

9.10 am – 11.00 am Session 5

Time	Presentation
9.10 – 9.30	Protein adsorption on nano-patterned hydrogenated amorphous carbon model surfaces Invited Talk – Dr. P Lemoine (Ulster University)
9.30 – 9.50	Electrospinning of yarns for tissue engineering: system design issues and performance characteristics Invited Talk – Dr. G McGuinness (Dublin City University)
9.50 – 10.10	Innovative strategies for the synthesis of self-assembly amphiphilic nanobiomaterials with advanced features Invited Talk – Prof. A Sosnik (Technion-Israel institute of Technology)
10.10 – 10.25	Development of a novel chemical cross-linker for the treatment of keratoconus Dr H Atikah (University of Liverpool)
10.25 – 10.40	Designing the Ideal Biocompatible Amphiphilic Block Copolymer for a Specific Biomedical Application Dr E Themistou (Queen's University Belfast)
10.40 – 11.00	Fluoride exchange in glass-ionomer dental cements Invited Talk – Prof. J Nicholson (Bluefield Centre for Biomaterials, London and Dental Institute, Queen Mary University of London)

11.00 am – 11.30 am Coffee/Tea and Poster Viewing (Judging)

11.30 am – 1.00 pm Session 6

Time	Presentation
11.30 -12.10	Joint Keynote Presentation - Prof M Dalby and Prof M Salmeron Sanchez (University of Glasgow)
12.10 – 12.25	Delivering the immunomodulatory properties of mesenchymal stem cells: Comparing different designs and biomaterials S Moise (University of Nottingham)
12.25 – 12.40	Thermally Triggered Hydrogel Induces Nucleus Pulposus Differentiation of Mesenchymal Stem Cells and Restores Mechanical Function Following Injection into Bovine Intervertebral Disc. A Thorpe (Sheffield Hallam University)
12.40 – 1.00	Enzymatic mineralization of hydrogels with alkaline phosphatase Invited Talk – Dr. T Douglas (Ghent University, Belgium)

1.00 pm – 1.50 pm Lunch

UK society for Biomaterials Meeting during lunch

1.50 pm – 3.15 pm

Session 7

Time	Presentation
1.50 – 2.10	Chemical Mapping of Biomaterials and Mineralised Tissues Invited Talk – Dr. R Williams (University of Birmingham)
2.10 – 2.25	Crystalline Polymeric Nanocomposite Hydrogels M Inam (University of Warwick)
2.25 – 2.40	The use of pNIPAM-laponite® hydrogel in 3D-cell culture of the intestine R Dosh (Sheffield Hallam University)
2.40 – 2.55	Studies on Double-crosslinked Nanogel with Graphene Oxide and their potential application in removing toxic Pb ions from water SM Zaki (University of Manchester)
2.55 – 3.15	Peptide Functionalised Gold Nanoparticles in Nanomedicine Invited Talk – Dr. D Dixon (Ulster University)

3.15 pm Prize Giving and Closing Remarks