

# RSC BIOMATERIALS CHEMISTRY ANNUAL CONFERENCE 2019



ROYAL SOCIETY  
OF CHEMISTRY

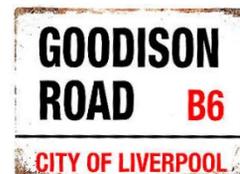


UNIVERSITY OF  
LIVERPOOL

*Conference Programme*

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**9 JANUARY - 11 JANUARY 2019  
STANLEY THEATRE, LIVERPOOL**



Dear Delegates,

Welcome to Liverpool! It is with great pleasure that I welcome you to the Annual Conference of the **RSC Biomaterials Chemistry Special Interest Group** here at the University of Liverpool. The RSC Biomaterials Chemistry Special Interest Group was set up in 2005 to provide a focus for groups in universities and industry working on the synthesis and characterisation of biomaterials. The annual meeting brings together researchers from across the UK and internationally, working to advance knowledge and focus on biomaterial chemistry research and development.

The event aims to enhance the understanding of the chemistries underlying the use of biomaterials in applications including antimicrobial surfaces, drug delivery and regenerative medicine. The focus of this year's meeting is Anti-Infective Materials and Device Related Infections, Biomaterials for Therapeutic Delivery, Biomaterials for Tissue Induction and Regenerative Medicine and Bioresponsive Surfaces.

Our plenary speakers are world leaders in their respective fields: **Professor Robert Hancock** (University of British Columbia, Canada), **Professor John Fisher** (University of Leeds), **Professor Graham Leggett** (University of Sheffield) and **Professor Rasmitha Raval** (University of Liverpool).

The response from the biomaterials research community has been excellent for this year's meeting with 34 different institutions and companies, including 7 from beyond the UK including The Netherlands, Ireland, Iraq, Pakistan, Brazil, Saudi Arabia and Nigeria. The breadth of work to be presented at this conference reflects the strong multidisciplinary nature of the field.

We hope you enjoy the conference and the city of Liverpool.

Dr. Raechelle D'Sa (Conference Chair)

**Organising Committee**

Jenny Aveyard, Jude Curran, Kiran Mann  
Robert Deller, George Fleming, Man Li, Raj Kaur  
Programme Design: Christopher Flack  
(cmflack@outlook.com)

# Sponsors

*We gratefully acknowledge the support of our sponsors*

## Journal of Materials Chemistry B

The Journal of Materials Chemistry B covers all aspects of the production, properties, and applications of materials related to materials for healthcare and biomedicine, bionterfaces, biomimetic, bio-inspired or natural materials. The journal is published by the Royal Society of Chemistry and includes topics such as antifouling coatings, biocompatible materials, biomimetics, drug delivery, scaffolds, regenerative medicine, stem cells and therapeutic devices.



Polymers is an international open access journal of polymer science. They publish research papers, communications and review articles. Polymers provided an interdisciplinary forum for publishing papers which advance the fields of polymerization methods, theory, simulation, modelling, understanding of new physical phenomena, advances in characterization techniques, and harnessing of self-assembly and biological strategies for producing complex multifunctional structures.



Rheolution was founded in 2009 to bring new ideas and to solve industrial challenges involving materials rheology. Today, Rheolution offers to customers around the world innovative, cost-effective and high added-value testing instruments for industrial quality and process control as well as research & development. We are still pursuing the same simple idea: making mechanical testing of soft materials accessible to everyone and to every industry.

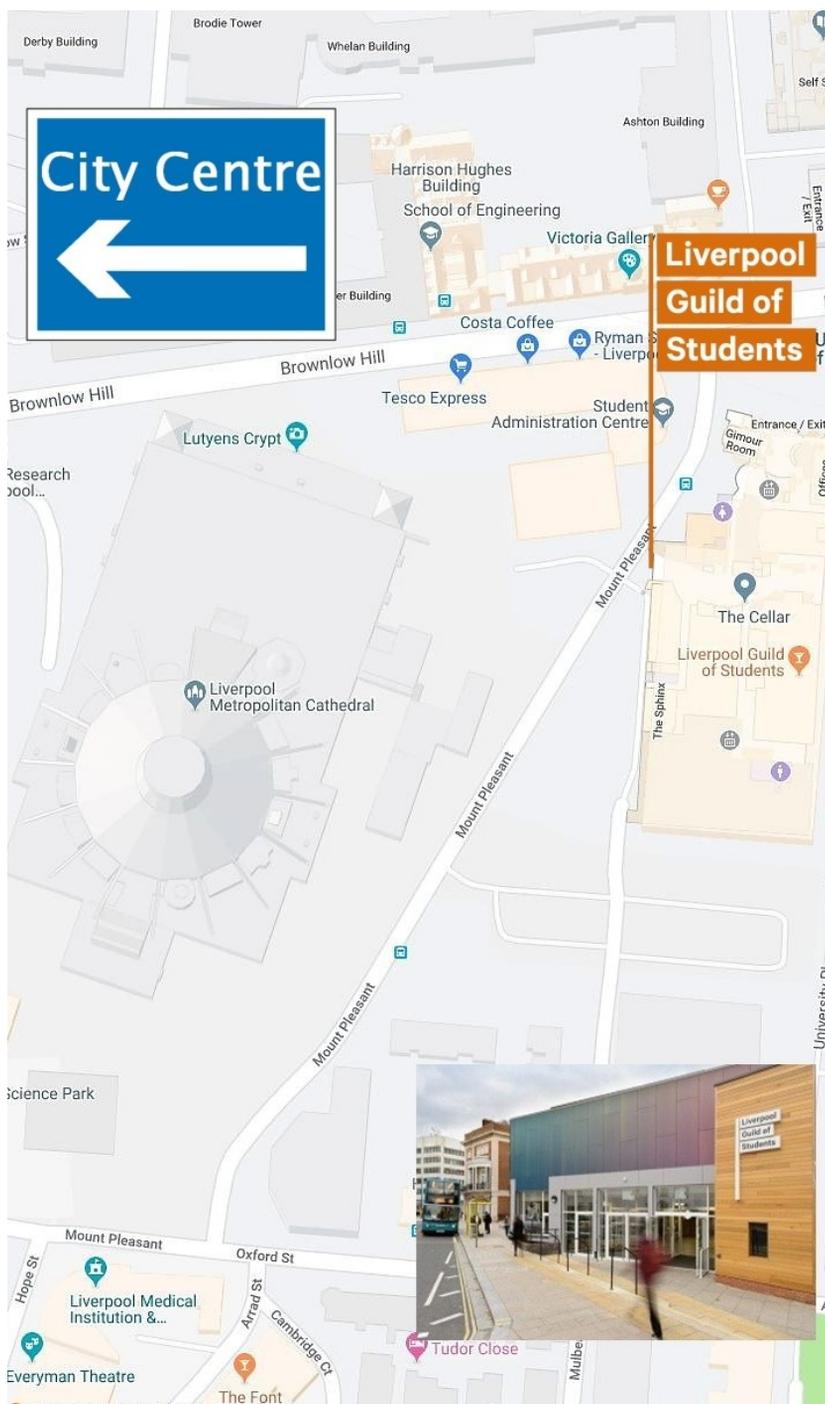
## The Stanley Theatre

**By car** - from the M62 continue onto Edge Lane, follow signs for City Centre and University. The nearest car park is at **Mount Pleasant**, this closes at 8pm, you cannot get your car after that time. The nearest 24 hour car park is **Secure Parking** on Heathfield Street, their website is [here](#). The theatre postcode is **L3 5TR**, **Secure Parking** postcode is **L1 4AT**.

We are a few minutes from **Secure Parking**, turn right on leaving the carpark, left on **Renshaw Street** and right at **The Adelphi Hotel**. Go up Brownlow Hill, pass the **Cathedral** and look for **Starbucks** to your right, the entrance is to the right of that, in the **Liverpool Guild of Students**.

**By train** - we're a ten-minute walk from **Lime Street** station. Leave via the front exit, go left onto Lime Street, turn left at the Adelphi Hotel and go up Brownlow Hill, pass the Cathedral and walk to University Place where you'll find the Conference.

**Local Public Transport** - Call Traveline on +44 (0)151 236 7676, or log onto their site [here](#). Download the Merseytravel app [here](#), also available on [iTunes](#) and [Google Play](#).





Stanley Theatre

Lime St Stn

James Street Stn.

The Liver Building



RSC Biomaterials Chemistry Annual Conference  
University of Liverpool, 2019

# Plenary Speakers

## **Professor Rasmita Raval**

Director, Open Innovation Hub for Antimicrobial Surfaces

Director, The Surface Science Research Centre

University of Liverpool, UK. - <https://www.liverpool.ac.uk/antimicrobial-surfaces/>

Professor Raval is the Director of the Surface Science Research Centre and the Open Innovation Hub for Antimicrobial Surfaces at the University of Liverpool. She is also a Professor in the Department of Chemistry. Her research includes knowledge-based design of functional surfaces, molecular nanoscience and bio-interfaces. Her multidisciplinary research combines protocols for 'bottom-up' assembly of functional nano-architectures and concurrent development and utilisation of powerful scientific techniques to probe the behaviour and performance of these systems at the atomic, molecular and cellular level. This experimental effort is combined with theoretical modelling to yield insights into molecular and biological responses and behaviour at interfaces. She also leads a dedicated innovation team to translate frontier research into technology platforms, with a specific focus on antimicrobial surfaces and materials.

She is also Co-Director of the UK National Biofilm Innovation Centre.

## **Professor Robert E.W. (Bob) Hancock**

Director, Centre for Microbial Diseases and Immunity Research

University of British Columbia - <http://cmdr.ubc.ca/bobh/>

Professor Hancock is a UBC Killam Professor of Microbiology & Immunology, an Associate Faculty Member of the Wellcome Trust Sanger Institute and a Canada Research Chair in Health and Genomics. His research interests include small cationic peptides as novel antimicrobials and modulators of innate immunity, the development of novel treatments for antibiotic resistant infections, the systems biology of innate immunity, inflammatory diseases and *Pseudomonas aeruginosa*, and antibiotic uptake and resistance. He has published more than 700 papers and reviews, has 64 patents awarded, and is an ISI highly cited author in Microbiology with more than 78,000 citations and an h-index of 145. He has won several awards including the ICAAC Aventis Antimicrobial Research Award, the leading award for research on antimicrobials, and Canada's three top prizes for Health Research, and is an Officer of the Order of Canada.

He was a co-founder of Migenix, Inimex Pharmaceuticals, ABT Innovations, Sepset Biotherapeutics, and the Centre for Drug Research and Development.

# Plenary Speakers

## **Professor John Fisher**

Professor of Mechanical Engineering

University of Leeds - [https://engineering.leeds.ac.uk/staff/59/professor\\_john\\_fisher](https://engineering.leeds.ac.uk/staff/59/professor_john_fisher)

Professor Fisher is a leading researcher in Medical and Biological Engineering, as Director of Wellcome Trust/EPSRC Medical Engineering Centre WELMEC, Director of EPSRC Innovation and Knowledge Centre in Regenerative Therapies and Devices, Director of EPSRC Centre for Innovative Manufacturing in Medical Devices, Director of White Rose Doctoral Training Centre in Tissue Engineering and Regenerative Medicine, Co Director of NIHR Leeds Musculoskeletal Biomedical Research Unit. As the former Director of the Institute for Medical and Biological Engineering, he provided leadership to over 200 academic researchers in Medical Engineering at Leeds.

Professor Fisher holds a degree in Physics from Birmingham University and a PhD in Bioengineering from the University of Glasgow. He is a chartered Mechanical Engineer, having been appointed to the Chair of Mechanical Engineering at the University of Leeds in 1993 being awarded a DEng degree in 1996. Professor Fisher received his CBE for services to Biomedical Engineering, is a Fellow of the Royal Academy of Engineering, FREng, and of the Academy of Medical Sciences, FMedSci, a Chartered Engineer, CEng, and Chartered Scientist, CSI.

## **Professor Graham J. Leggett**

Professor of Nanoscale Analytical Science and Head of Department

The University of Sheffield. - <http://www.leggett.group.shef.ac.uk/>

Graham Leggett is Professor of Analytical Science and Head of the Department of Chemistry at The University of Sheffield. He is the Co-chair of the Leeds/Sheffield Centre for Doctoral Training in Molecular-Scale Engineering, a member of the AVS Program Committee, Departmental Director of Research and Chair of the Department of Chemistry's Laboratory Committee. Professor Leggett obtained a BSc in Chemistry from UMIST in 1987. His PhD from the same institution, obtained in 1990, was followed by consecutive appointments as Research Associate at Universities of Washington and Nottingham. In 1994 he was appointed as lecturer at the University of Nottingham. He became a Lecturer at UMIST in 1998, where he was subsequently promoted to senior lecturer and reader. In 2002 he was appointed as Professor of nanoscale analytical chemistry at the University of Sheffield. He was appointed as the Head of Department in 2018.



# RSC Biomaterials Chemistry Annual Conference

## Overview

### Wednesday, Jan 9<sup>th</sup>

12:00 - 12:10	<b>Welcome from Professor Dame Janet Beer, Vice Chancellor.</b>
12:10 - 14:30	<b>Session 1:</b> Chairs, Timothy Douglas and Jenny Aveyard
12:10 - 13:00	<b>Plenary - Rasmita Raval:</b> Biofilms: Biology meets Surface Science
14:30 - 15:15	<i>Lunch and Poster Session</i>
15:15 - 17:30	<b>Session 2:</b> Chairs, Giuseppe Tronci and Emma McCarthy
17:35 - 19:00	<i>Poster Session and Drinks Reception</i>

### Thursday, Jan 10<sup>th</sup>

09:00 - 10:50	<b>Session 3:</b> Chairs, Raechelle D'Sa and Sophie Louth
09:00 - 09:50	<b>Plenary - Robert Hancock:</b> High throughput approaches for development of peptides for treatment and prevention of surface biofilm infections
10:50 - 11:15	<i>Break and Poster session</i>
11:15 - 12:30	<b>Session 4:</b> Chairs, Annalisa Tirelli and Morgan Lowther
12:30 - 13:30	<i>Lunch and Poster Session</i>
13:30 - 15:30	<b>Session 5:</b> Chairs, Jude Curran and Samuel Moxon
13:30 - 14:20	<b>Plenary - John Fisher:</b>
15:30 - 15:55	<i>Break and Poster session</i>
15:55 - 17:10	<b>Session 6:</b> Chairs, Victoria Kearns and Caroline Harrison
19:00 - 00:30	<i>Welcome drinks and conference dinner at the Royal Liver Building</i>

### Friday, Jan 11<sup>th</sup>

10:00 - 11:35	<b>Session 7:</b> Chairs, Francisco Fernandez-Trillo and Robert Deller
10:00 - 10:50	<b>Plenary - Graham Leggett:</b> Polymer brush microsystems for the study of membrane processes
11:35 - 12:00	<i>Break and Poster Session</i>
12:00 - 12:45	<b>Session 8:</b> Chairs, Paul Roach and Pallavi Deshpande
13:00 - 13:30	<i>Conference closes with lunch in the Stanley Theatre</i>



# RSC Biomaterials Chemistry Annual Conference

## Wednesday 9<sup>th</sup> January

**11:00 – 12:00** Registration

**12:00 – 12:10** Welcome from the Vice Chancellor, Professor Dame Janet Beer

**12:10 – 13:00** Plenary Speaker, Rasmita Raval

*University of Liverpool*

**13:00 – 13:15** Tuning long-acting HIV drug release from a nanogel-based in situ forming implant

*Department of Chemistry, University of Liverpool*

Adam R. Town, Jessica Taylor, Karl Dawson, Edyta Niezabitowska, Nancy M. Elbaz, Andrew Corker, Esther Garcia-Tuñón and Tom O. McDonald.

**13:15 – 13:30** Utilisation of an oxidation sensitive trigger with combined temperature response for drug delivery applications

*Department of Chemistry, University of Sheffield*

Emma Owens and Sebastian Spain

**13:30 – 13:45** Rheo-Dissolution: A new technique for the simultaneous measurement of rheology and drug release from hydrogels

*Department of Pharmacy, University of Huddersfield*

Faria Senjoti, Muhammad U. Ghorji, Barbara R. Conway and Alan M. Smith

**13:45 – 14:00** Delivery Systems for a therapeutic demineralising agent

*School of Chemical Engineering, University of Birmingham*

Thomas Robinson, Sophie Cox and Liam Grover

**14:00 - 14:15** Real time non-invasive optical tracking of label-free nanoparticles and proteins

*School of Engineering, University of Liverpool*

Francesco Giorgi, Judith M. Curran and Eann A. Patterson

**14:15 – 14:30** Development of Ti-Ag alloys and investigation of antimicrobial response

*School of Chemical Engineering, University of Birmingham*

Morgan Lowther, Liam Grover and Sophie Cox



**RSC Biomaterials Chemistry Annual Conference**

**Wednesday 9<sup>th</sup> January**

**14:30 – 15:15 Late Lunch and Poster Session**

**15:15 – 15:30 The synthesis of a nano silver-graphene oxide system and efficacy against endodontic biofilms using a novel tooth model**

*Department of Tissue Engineering and Biophotonics, King's College London*  
Konstantinos Ioannidis, Sadia Niazi, Petros Mylonas, Francesco Mannocci, Sanjukta Deb

**15:30 – 15:45 Nitric Oxide Releasing Titanium Surfaces for Antimicrobial Applications**

*School of Engineering, University of Liverpool*  
Man Li, Jenny Aveyard, George Fleming, Jude Curran, Fiona McBride, Rasmita Raval and Raechelle A. D'Sa

**15:45 – 16:00 Synthesis and evaluation of novel selenium nanoparticles for development of antibacterial healthcare textiles**

*School of Pharmacy and Biomolecular Sciences, University of Brighton*  
Qiaoyi Wang, Lara Barnes, Carol Howell, Matthew Illsley, Patrick Dyer, Irina Savina.

**16:00 – 16:15 Development of a radiopaque liquid embolic for use in therapeutic embolization**

*Department of Chemistry, University of Sheffield, UK.; Biocompatibles UK Ltd*  
Jasmine Lord, Sebastian Spain and Andrew Lewis

**16:15 – 16:30 Development and characterization of nano-hydroxyapatite by freeze drying method**

*Metallurgical & Material Engineering Department, University of Engineering & Technology Pakistan.*  
Maheera Abdul Ghani, Ehsan Ul Haq and Sidrah Majeed

**16:30 – 16:45 Engineering organic piezoelectricity using computational chemistry**

*Department of Physics, Bernal Institute, University of Limerick, Ireland*  
Sarah Guerin, Joseph O' Donnell, Tofail Syed and Damien Thompson



**RSC Biomaterials Chemistry Annual Conference**  
**Wednesday 9<sup>th</sup> January – Rapid Fire**

**16:45 – 16:50 Probing the composition of extracellular vesicles in bone formation**

*Chemical Engineering, University of Birmingham*

Adam J. A. McGuinness, Sophie C. Cox, Owen G. Davies and Liam M. Grover

**16:50 – 16:55 Antimicrobial peptide hydrogels as bandage contact lenses**

*Department of Eye and Vision Science, University of Liverpool*

Pallavi Deshpande, Stephnie Kennedy, Andrew Gallagher, Mal Horsburgh, Heather Allison, Stephen Kaye, Don Wellings and Rachel Williams

**16:55 – 17:00 Harnessing the antibacterial properties of chitosan to tackle dental biofilms**

*School of Pharmacy and Biomedical Science, University of Portsmouth*

Dien Puji Rahayu, Katerina Lalatsa and Marta Roldo

**17:00 – 17:05 Differentiation of mesenchymal stem cells in an injectable hydrogel under the conditions of the degenerate intervertebral disc.**

*Materials Engineering Research Institute, Sheffield Hallam University.*

Joseph W. Snuggs, Abbey A Thorpe, Cameron Hutson, Simon W Partridge, Chris Sammon, Christine L Le Maitre.

**17:05- 17:10 Polymeric artificial cellular environments for vibrio cholera aggregation**

*School of Chemistry, University of Birmingham, McGovern Medical School, University of Texas Health, Houston, USA*

Oliver Creese, Francisco Fernandez-Trillo and Anne-Marie Krachler

**17:10 – 17:15 Stimuli-responsive nanogels with controlled size and architecture**

*Department of Chemistry, University of Sheffield*

Marissa Morales-Moctezuma, Sebastian Spain

**17:15 – 17:20 UPLC-DAD-ESI-QTOF-MS Characterization of anthocyanin pigments extracted from the leaves of *Justicia secunda* Vahl (Acanthaceae) growing abundantly in the lowland rainforests in the Niger Delta region of Nigeria.**

*Department of Chemistry, Federal University Otuoke, Yenagoa, Nigeria,*

*Department of Biology, Federal University Otuoke, Yenagoa, Nigeria.*

Akens Hamilton-Amachree, Eneni Inara Mercy Roberts

**17:30**

**Poster Session and Drinks Reception at The Stanley Theatre**



# RSC Biomaterials Chemistry Annual Conference

## Thursday 10<sup>th</sup> January

**9:00 – 9:50 Plenary Speaker, Robert Hancock**

*University of British Columbia*

**9:50 – 10:05 Light controlled release of antimicrobial peptides for the treatment of pathogenic bacteria**

*School of Physics and Astronomy, University of Leeds*

Samuel Moorcroft, Zhan Yui Ong, David Jayne and Stephen Evans.

**10:05 – 10:20 Role of nano topography and bioactive coated 2D/ 3D titanium lattices on mesenchymal stem cells and *Pseudomonas aeruginosa* behaviour**

*Centre for the Cellular Microenvironment, University of Glasgow*

Laila Damiati, Virginia Llopis-Hernández, Bo Su, Richard Oreffo, Peifeng Li, Penelope M. Tsimbouri, Manuel Salmeron-Sanchez and Matthew J. Dalby.

**10:20 – 10:35 Dual action antimicrobial surfaces**

*School of Engineering, University of Liverpool*

George Fleming, Jenny Aveyard, Joanne L Fothergill, Fiona McBride, Rasmita Raval and Raechelle A D'Sa

**10:35 – 10:50 Photodynamically active electrospun scaffolds for antibiotic-free infection Control**

*Institute of Medical and Biological Engineering, University of Leeds*

Amy Contreras, Michael J. Raxworthy, Simon Wood, Jessica D. Schiffman, Giuseppe Tronci

**10:50 – 11:15 Break and Poster session**



# RSC Biomaterials Chemistry Annual Conference

## Thursday 10<sup>th</sup> January

**11:15 – 11:30 Ultra-short self-assembling amphiphilic peptides: a versatile platform for soft biomaterials fabrication**

*School of Pharmacy & Biomedical Sciences, University of Central Lancashire*

Mohamed A. Elsayy, Jacek Wychowaniec, Alberto Saiani, Ronak Patel, James Leach

**11:30 – 11:45 Insights into the structure of self-assembly histidine peptide with Glucose Oxidase Enzyme**

*School of Chemical Engineering and Analytical Science, University of Manchester,*

Xiaoxia Huang, Alberto Saiani and Aline F. Miller

**11:45 – 12:00 Surface-mediated self assembly of supramolecular structures  
Teaching an old dog new tricks**

*School of Pharmacy, University of Nottingham*

Mischa Zelzer

**12:00 – 12:15 Controlling the enzymatic degradability of self-assembled peptide nanostructures via supramolecular cohesion**

*School of Engineering and Materials Science & Institute of Bioengineering, Queen Mary University of London.*

Yeijiao Shi, Daniela S. Ferreira, Jayati Banerjee, Xinqing Pang and Helena S. Azevedo

**12:15 – 12:30 Peptide-graphene oxide hydrogel nanocomposites for intervertebral disc tissue engineering applications**

*School of Materials, University of Manchester*

Cosimo Ligorio, Mi Zhou, Aravind Vijayaraghavan, Judith Hoyland, Alberto Saiani

**12:30 – 13:30 Lunch**



## RSC Biomaterials Chemistry Annual Conference

# Thursday 10<sup>th</sup> January

**13:30 – 14:20 Plenary Speaker, John Fisher**

*University of Leeds*

**14:20 – 14:35 Synergistic integrin-growth factor microenvironment to bioengineer the bone marrow niche *in vitro*.**

*Centre for the Cellular Microenvironment, University of Glasgow. MRC Centre for Regenerative Medicine, University of Edinburgh*

Hannah Donnelly, Ewan Ross, Christopher West, Bruno Peault, Manuel Salmeron-Sanchez & Matthew J Dalby

**14:35 – 14:50 Hydroxamic acid-conjugated collagen systems for matrix metalloproteinase modulation in chronic wounds**

*Textile Technology Research Group, University of Leeds*

Giuseppe Tronci, Stephen J. Russell, David Wood and He Liang

**14:50 – 15:05 Manipulation of collagen type I using topographical and chemical cues for corneal wound repair**

*School of Chemistry, University of Birmingham*

Emma McCarthy, Megan E Cooke, Pola Goldberg Oppenheimer and Liam M Grover

**15:05 – 15:15 Osteoblast behaviour on whey protein isolate hydrogels as scaffolds for bone regeneration**

*Materials Science Institute, Lancaster University*

Susanne Stählke, Karolina Mazur, Aleksandra Krężel, Jagoda Żydek, Elżbieta Pamuła, Krzysztof Pietryga, Julia K. Keppler, Carmen C. Piras, Sam C. Tsang, J. Barbara Nebe, Timothy E.L. Douglas.

**15:15 – 15:30 The visco-elasticity of 2D protein networks – Implication for stem cell expansion**

*Institute of Bioengineering and, School of Engineering and Materials Science, Queen Mary University of London*

Dexu Kong, Lihui Peng, Khai Nguyen, Pavel Novak and Julien E. Gautrot.

**15:30 – 15:55 Break and Poster session**



## RSC Biomaterials Chemistry Annual Conference

# Thursday 10<sup>th</sup> January

**15:55 – 16:10 Controlling immune cell activation with bionanomaterials**

*Dept. Materials, Imperial College London.*

Iain E. Dunlop

**16:10 – 16:25 Strontium and fluoride co-doped calcium phosphate nanoparticles for treatment of dental enamel lesions**

*Institute of Pharmaceutical Science, King's College London*

Jana Javorovic, Zi Hong Mok, Nigel Pitts, Rupert Austin, Gordon Proctor and Maya Thanou.

**16:25 – 16:40 Nano optical oxygen sensor (nose) for cell physiological condition monitoring**

*School of Engineering, University of Liverpool*

Manohar Prasad Koduri, Yu Wei Shao, John Hunt, James Henstock, Fan Gang Tseng and Jude Curran

**16:40 – 16:55 Development of blended alginate/collagen hydrogels for 3D neural cell culture applications**

*Neuroscience and Experimental Psychology, University of Manchester*

Samuel R. Moxon, Nicola J. Corbett, Kate Fisher, Geoffrey Potjewyd, Marco Domingos, Nigel M. Hooper

**16:55 – 17:10 Versatile hydrogel composites with osteogenic ions for bone substitutes**

*Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London*

Lilis Iskandar, Jonathan Acheson, Lucy Di-Silvio, Sanjukta Deb

**17:10 – 17:40 RSC Biomaterials Chemistry Special Interest Group AGM**

RSC Biomaterials Chemistry Annual Conference  
Thursday 10<sup>th</sup> January



Conference Dinner  
Thursday 10<sup>th</sup> January

**THE VENUE  
AT THE ROYAL LIVER  
BUILDING**

Pier Head, Liverpool, L3 1HU.  
Entrance via main doors on Canada Blvd  
**DRINKS RECEPTION AT 7.30PM SHARP**

Delta Taxi - 0151 922 7373  
Alpha Taxi - 0151 722 8888





# RSC Biomaterials Chemistry Annual Conference

## Friday 11<sup>th</sup> January

**10:00 – 10:50 Plenary Speaker, Graham Leggett**

*University of Sheffield*

**10:50 – 11:05 3D printed flexible composite scaffolds with high ceramic content for bone regeneration**

*School of Pharmacy, University of Nottingham*

Aruna Prasopthum, Kevin Shakesheff, [Jing Yang](#)

**11:05 – 11:20 Suspended layer additive manufacture and the fabrication of complex 3D tissue scaffolds**

*Department of Pharmacy, University of Huddersfield*

[Jessica Senior](#), Megan E. Cooke, Liam M. Grover and Alan M. Smith

**11:20 – 11:35 Effect of laponite on the thermoresponsive nature of poly NIPAM based nanocomposites**

*Materials Engineering Research Institute & Biomolecular Sciences Research Centre, Sheffield Hallam University.*

[Simon William Partridge](#), Joseph Snuggs, Christine Le Maitre and Chris Sammon

**11:35 – 12:00 Break and Poster session**

**12:00 – 12:15 Electrospinning for regenerative medicine; challenges and solutions to bring products to the market.**

*IME Medical Electrospinning, Waalre, The Netherlands*

[Marc Simonet](#) and Judith Heikoop

**12:15 – 12:30 Bioactive hybrid materials for soft and hard tissue engineering**

*Department of Materials, Loughborough University*

[Adja Touré](#), Elisa Mele and Jamieson Christie

**12:30 – 12:45 In Situ Screening Of functional polymers for biomedical applications**

*School of Chemistry and Institute of Microbiology and Infection, University of Birmingham.*

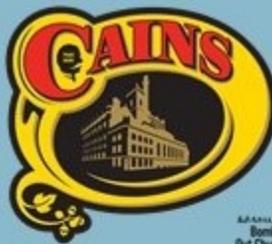
[Francisco Fernandez-Trillo](#)

The conference will finish with a lunch served in the Stanley Theatre at 1pm. We would like to thank you for your participation and engagement throughout the event and look forward to working with you all in the future.

If you have some time there are dozens of attractions within walking distance that might be worth popping into see. These are our favourites.

If you have any questions or need any advice please feel free to ask a member of the organising team.

Thanks again for coming.



**BOMBED OUT CHURCH**

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## RSC Biomaterials Chemistry Annual Conference

# Poster Presentations

- P01 Triply-responsive hydrogels constructed from microgel building blocks containing a photo-cleavable**  
*School of Materials, University of Manchester*  
Dongdong Lu, Brian Saunders
- P02 Synthetic bone graft with potential application in oral and maxillofacial bone defects**  
*Faculty of Dentistry, King's College London*  
Alexandre Marques, Agamemnon Grigoriadis and Sanjukta Deb
- P03 Supramolecular Design of Cytoskeletal Protein-based Hydrogels, Characterization and Potential Applications in Regenerative Medicine**  
*School of Engineering and Materials Science, Queen Mary University of London*  
Babatunde O. Okesola, Burak Derkus, Sonya R. Manic, Dave Adams and Alvaro Mata
- P04 Characterisation of oxidized alginate-gelatin hydrogels for in vitro models**  
*Division of Pharmacy and Optometry, University of Manchester*  
Chen Zhao, Enrique Lallana, Ayşe Latif, Kaye Williams and Annalisa Tirella
- P05 A biocompatibility study of a versatile ultra-short self-assembling peptide hydrogel for dental and soft tissue regeneration.**  
*Centre for Biomedicine, Manchester Metropolitan University*  
Claire-Marie Nuttegg, Ronak Patel, Mohamed Elsayy, Araida Hidalgo-Bastida
- P06 Rheological and recovery properties of self- assembly peptide hydrogels**  
*Chemical Engineering and Analytical Science, University of Manchester*  
Cong Ding, Alberto Saiani, Aline F. Miller
- P07 Peptide-graphene oxide hydrogel nanocomposites for intervertebral disc tissue engineering applications**  
*School of Materials, University of Manchester*  
Cosimo Ligorio, Mi Zhou, Aravind Vijayaraghavan, Judith Hoyland, Alberto Saiani



## RSC Biomaterials Chemistry Annual Conference

# Poster Presentations

- P08 Control of neuronal alignment and circuit formation in 3D hydrogel cultures**  
*Department of Chemistry, Loughborough University*  
Daniel Merryweather, Joran Roe and Paul Roach
- P09 Neuronal Alignment using Polymeric Micro-Hollow Fibres for Spinal Cord Injury Regeneration**  
*Department of Life and Health Sciences, Aston University*  
David Jenkins, Scott Allan, Marianne J Ellis, Patricia P Esteban
- P10 Schiff base new ligand derived from camphor with folic acid synthesizing and characterizing it with some metal ions.**  
*Department of Chemistry, Faculty of Science and Health, Koya University, Iraq*  
Iman I. Alsalihi
- P11 Fast Synthesis of ZnMgO Nanowires by the Microwave-Assisted Hydrothermal Method**  
*Department of Physics, Faculty of Science, King Abdulaziz University, Saudi Arabia*  
Faten E. Al-Hazmi
- P12 Core-shell-shell cytocompatible polymer dot-based particles**  
*School of Materials, University of Manchester*  
Hannah R. Shanks
- P13 Synthesis and optimisation of lipid-hybrid nanoparticles loaded with a mixture of two antiretroviral drugs for the treatment of HIV**  
*Department of Chemistry, University of Liverpool*  
Heba Elkateb, Steven P. Rannard and Tom McDonald
- P14 ACCELLULAR GELATINE-ALGINATE SCAFFOLDS FOR DENTINE-PULP REGENERATION**  
*Department of Bioengineering, Imperial College*  
Ignacio Medina-Fernández, Adam D. Celiz



## RSC Biomaterials Chemistry Annual Conference

# Poster Presentations

- P15**    **Developing a novel ocular adhesive for corneal perforations**  
*Chemical Engineering, University of Birmingham*  
Inês Barroso, Anita Ghag and Sophie Cox
- P16**    **Control of Mesenchymal Stem Cell and Articular Chondrocyte Morphology using Large-Area Chemical Nanoarrays by Polymer Pen Lithography**  
*School of Engineering, University of Liverpool*  
I-Ning Lee, John A Hunt, Lu Shin Wong, Nick Rhodes, Judith M Curran
- P17**    **Magnetic hydrogels: Tissue engineering constructs with switchable stiffness**  
*Materials Department, Loughborough University*  
Jordan Roe, Paul Roach and Helen Wilcock
- P18**    **Poly(acryloyl-hydrazide) as a versatile scaffold to induce bacterial aggregation**  
*School of Chemistry/School of Chemical Engineering, University of Birmingham*  
Jose Luis Brioso, Francisco Fernandez-Trillo and Tim W Overton
- P19**    **Investigation of the anticancer activity of electron-deficient organometallic complexes**  
*School of Chemistry and Biosciences, University of Bradford*  
Maria Azmanova, Joan J. Soldevila-Barreda, Anaïs Pitto-Barry, Steven M. Picksley, and Nicolas P. E. Barry
- P20**    **A novel pH/strain sensing blue-emitted nanogel probe and hydrogel application**  
*School of Materials, University of Liverpool*  
Mingning Zhu, Brian R Saunders
- P21**    **A novel calcium chelating agent for the treatment of corneal mineralisation**  
*School of Chemical Engineering, University of Birmingham*  
Naomi Bennett, G. Begum, L.J Hill and L.M. Grover



## RSC Biomaterials Chemistry Annual Conference

# Poster Presentations

- P22 Mechanical Properties of Gelatin-GO hydrogels for biomedical applications**  
*Chemical Engineering, University of Birmingham*  
Natalie Parsons, Alberto Saiani and Aravind Vijayaraghavan
- P23 Polymer scaffolds for 3D biocatalysis**  
*School of Chemistry, University of Birmingham*  
Pavan Adoni, Francisco Fernandez-Trillo and Timothy Overton
- P24 Next-generation 2.5D tissue culture surfaces to study cancer cell aggregation**  
*School of Science and Technology, Nottingham Trent University*  
Rajeharish Rajendran, Graham J Hickman, Carole C Perry and David J Boocock
- P25 A dentine adhesive with remineralising potential**  
*School of Chemistry/School of Chemical Engineering, University of Birmingham*  
Rana Alkattan, Subir Banerji and Sanjukta Deb
- P26 Polyions complex and mesoporous silica nanoparticles for the fluorogenic detection of endotoxin and the delivery of Polymyxin B**  
*School of chemistry, University of Birmingham*  
Sameh El Sayed, Francisco Fernandez-Trillo, Ismael Otri, Elena Azna, Félix Sancenón, Ramón Martínez-Máñez.<sup>2,3</sup>
- P27 Plasmonic and colloidal stability behaviours of Au-acrylic core-shell nanoparticles with thin pH-responsive shells**  
*School of Materials, University of Manchester*  
Shanglin Wu, Mingning Zhu, Qing Lian, Dongdong Lu, Ben Spencer, Daman J. Adlam, Judith A. Hoyland, Kirsten Volk, Matthias Karg and Brian R. Saunders
- P28 Design and Test of self-assembling peptide systems for target cancer drug delivery**  
*Chemical Engineering and Analytical Science, University of Manchester*  
Siyuan Dong, Alberto Saiani, Aline Miller



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# Poster Presentations

- P29 Towards the development of a mechanically and biologically relevant oral mucosa model to evaluate tissue integration approaches for dental implants**  
*Chemical Engineering, University of Birmingham*  
Sophie E Mountcastle, Victoria E Seville, Richard M Shelton, Rachel L Sammons, Sophie C Cox, Sara Jabbari, and Sarah A Kuehne
- P30 A Comparison of Lattice Designs to Optimise Mechanical Properties in a Novel Lattice Hip Spacer Implant**  
*School of Chemical Engineering, University of Birmingham*  
Sophie Louth, Kenneth Nai, Neil Eisenstein, Sophie Cox
- P31 GD-peptide functionalised Highly branched Poly(N-isopropylacrylamide)-Synthesis and Cell-Lifting application**  
*School of Science and Technology, Nottingham Trent University*  
S.R. Carter, S.Rimmer, L. Swanson, J. Haycock, S. MacNeil, S. Rutkaite, S. Hopkins, B. Hunt
- P32 NOVEL ANTIMICROBIAL EMULSIONS: FORMULATION OF A TRIGGERED RELEASE REACTIVE OXYGEN<sup>•</sup> DELIVERY SYSTEM**  
*School of Chemistry/School of Chemical Engineering, University of Birmingham*  
Thomas Hall, Liam Grover and Sophie Cox
- P33 Rapid Screening of Polymeric Transfection Agents for the Treatment of Glaucoma**  
*School of Chemistry, University of Birmingham*  
Thomas Leigh, Ghazala Begum, Zubair Ahmed, Ann Logan, Richard Blanch, and F. Fernandez-Trillo.<sup>1</sup>