Bioinspired Nanomaterials:

From Biomolecular Structure and Soft Matter to Biomimetic Materials and Applications

RSC Chemical Nanoscience and Nanotechnology Interest Group Early Career Researcher Meeting
March 18-19, 2019, Technology and Innovation Centre, University of Strathclyde, Glasgow

Mon March 18 - From Biological Structures to Biofunctionality and Applications

Session Chair: Dr Carsten Mim (KTH Royal Institute of Technology)

08:00	08:55	55 min	*Registration*		
08:55	09:00	5 min	*Welcome by Meeting Chair*		
09:00	09:30	30 min	**Carsten Mim**	What nanotechnology can do for structural biology	KTH Royal Institute of Technology
09:30	10:10	40 min	**Roderick Lim**	Biomimetic validation of biological function	University of Basel
10:10	10:30	20 min	**Fabio Nudelman**	Characterising the structure and functionality of organic matrices of mineralised tissues	University of Edinburgh
10:30	10:50	20 min	**Adam Perriman**	Artificial membrane binding proteins for regenerative medicine	University of Bristol
10:50	11:10	20 min	*Coffee Break*		
11:10	11:30	20 min	**Paul Mulheran**	Biomolecular simulation as a driver for bio-nanotechnology design	University of Strathclyde
11:30	11:50	20 min	**Rob Cunliffe** (ECR)	Structural vaccinology: The rational design of a ferritin nanoparticle presenting a chimeric antigen	University of Strathclyde
11:50	12:10	20 min	**Kevin N Bauman** (ECR)	Clathrin-like liposome coating with DNA anchored to lipid membranes	University of Cambridge
12:10	12:30	20 min	**Barbara Simoes (ECR)**	Smart Switchable Biological Surfaces for On-Demand Biosensing	University of Birmingham
12:30	12:50	20 min	**Rosalia C. Delint** (ECR)	Sticky Stem Cells: Reengineering the Cell Membrane using Nanobiohybrid Materials	University of Bristol
12:50	13:40	50 min	*Lunch Break - Poster Session*		
13:40	14:20	40 min	**My Hedhammar**	Engineering silk for biomedical applications	KTH Royal Institute of Technology
14:20	14:40	20 min	**Andreas Koeppel** (ECR)	Spinning silk requires pH activation and extensional flow	University of Sheffield
14:40	15:00	20 min	**Annchalee Eade** (ECR)	Application of spin-coated cellulose nanowhiskers to engineer skeletal muscle	University of Manchester
15:00	15:20	20 min	**Philipp Seib**	From silk fibres to nanoparticles – exploring the biomedical use of silk	University of Strathclyde
15:20	15:50	30 min	*Coffee Break*		
15:50	16:10	20 min	**Matt Dalby**	Use of nanotopography to control mesenchymal stem cell growth and immunosuppressive phenotype	University of Glasgow
16:10	16:30	20 min	**Suhair Sunoqrot**	Plant Polyphenols as a Renewable Source of Drug Delivery Nanocarriers: The Story of Quercetin	Al-Zaytoonah University of Jordon
16:30	16:50	20 min	**Manlio Tassieri**	Microrheology of biomacromolecules: The fall of a theoretical framework!	University of Glasgow
16:50	17:30	40 min	**Simona Serban**	High protein affinity resins for chromatographic and biocatalytic applications	Purolite Ltd.
17:30	17:40	10 min	*Meeting Group Photo*		
17:40	19:00	80 min	*Posters and Networking Session*		
19:00	until finish		*Dinner*		

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Tues March 19 - Polymers, Bionanomaterials, Biointerfaces

Session Chair: Dr Basit Yameen (LUMS Lahore University of Management Sciences)

08:30	08:55	25 min	*Registration*		
08:55	09:00	5 min	*Announcement of Best Poster Presentations*		
09:00	09:40	40 min	**Patrick Theato**	Simplifying the Synthesis of Smart Polymers and Actuators	Karlsruhe Institute of Technology
09:40	10:20	40 min	**Erik Reimhult**	Responsive convex and concave nanostructured polymer brushes: nanoparticles and nanopores	BOKU University of Natural Resources and Life Sciences, Vienna
10:20	10:40	20 min	*Coffee Break*		
10:40	11:20	40 min	**Johana Kuncova-Kallio**	T.B.A. (topic: multi-parametric surface plasmon resonance spectroscopy)	BioNavis Ltd, Finland
11:20	11:40	20 min	**Mischa Zelzer**	A course in active listening for biomaterials - Designing biointerfaces that respond to biological signals	University of Nottingham
11:40	12:00	20 min	**Yazmin Tagger** (ECR)	Preparation of benzoboroxole-modified gold surfaces for selective glycoprotein recognition	University of Birmingham
12:00	12:30	30 min	**ECR Best Poster Flash Presentations (3x10 min)**		
12:30	13:30	60 min	*Lunch Break - Poster Session*		
13:30	13:50	20 min	**Nikolaj Gaardegard**	Informed design: Towards design rules for nanoscale biomaterials	University of Glasgow
13:50	14:10	20 min	**Colette Whitfield** (ECR)	Cell-free synthetic biology in hydrogel chassis: biologically sensing and responding materials	Newcastle University
14:10	14:30	20 min	**Lalit Pandey**	Self-Assembled Monolayers in Biomaterials	Indian Institute of Technology Guwahati
14:30	14:50	20 min	**Graham J. Day** (ECR)	A novel supercharged fusion enzyme building block towards the synthesis of robust, self-assembling composite materials for the degradation of organophosphorous compounds	University of Bristol
14:50	15:10	20 min	**Thomas Richardson** (ECR)	3D Bioprinting a Renal Glomerulus Model	University of Bristol
15:10	15:30	20 min	*Coffee Break*		
15:30	15:50	20 min	**Sam Donnelly (ECR)**	Poly ethylene(glycol) Hydrogels to Mimic the Stem Cell Bone Marrow Niche	University of Glasgow
15:50	16:10	20 min	**Oliver Henrich**	Coarse-Grained Modelling of DNA Hydrogels	University of Strathclyde
16:10	16:30	20 min	**Ricardo da Silva**	Super-resolution microscopy reveals heterogeneous molecular exchange in peptide amphiphile self-assembly	King's College London
16:30	17:10	40 min	**Nico Bruns**	From Bioinspired Nanoreactors to Malaria Diagnostics via Biocatalytic Polymer Synthesis	University of Strathclyde
17:10	17:20	10 min	*Prize Presentation for Best ECR Poster and Talks*		
17:20	17:30	10 min	*Closing Remarks*		

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Poster Contributions

1	Agata Jakimowicz	A responsive, growth-factor-expressing bioink for tissue engineering	University of Bristol
2	Andrew Baker	Novel Strategies and Nanoparticles to Target Senescent Cells	University of Cambridge
3	Aquib Jawed	Synthesis of nano-structured Al-doped ZnO for effective removal of heavy metals	Indian Institute of Technology Guwahati
4	Ben Carter	Enzyme-Polymer Surfactant Nanoconstructs for the Detoxification of Organophosphorous Compounds	University of Bristol
5	Cameron Webb	Optimising microfluidic parameters for the manufacture of liposomal vaccines.	University of Strathclyde
6	Corrigan Hicks	Nanoscale Homing Vectors for Regenerative Engineering	University of Bristol
7	Despo Chatzikleanthous	Design of vaccine delivery systems: The conjugation of CpG-ODN TLR9 agonist to protein antigens anchored to liposomes	University of Strathclyde
8	Edgar Barajas Ledesma	The rheological and spectroscopic properties of gastropod mucus	University of Sheffield
9	George Klemperer	3D Bioprinting Bacterial Engineered Living Materials	University of Bristol
10	Georgina Zimbitas	Concentration and pH dependence of colloidal scale solute clustering within aqueous solutions of small organic molecules	University of Strathclyde
11	Iqra Azeem	Nanotools for Molecular Investigation of Membrane Associated Proteins	University of Strathclyde
12	Jingmei Yang	Catechol-modified poly(ethylene glycol) hydrogels with a highly selective protein separation ability	University of Strathclyde
13	John Totten	Attenuation of macrophage activation state with silk nanoparticles	University of Strathclyde
14	Leander Crocker	Flavin conjugated polydopamine: from small molecule photocatalysis towards photoelectrocatalysis applications	University of Cambridge
15	Magdalena Czekalska	Microfluidics for protein-lipid interactions	University of Cambridge
16	Marina Lledos	The role of surfaces in influencing supramolecular self-assembly	University of Nottingham
17	Micael Gouveia	Force-responsive polymersomes inspired by marine bioluminescence of dinoflagellates	University of Strathclyde
18	Mohammed Al Qaraghuli	Examining the interactions of Bovine Serum Albumin (BSA) and Lysozyme with negatively charged silica surfaces using both simulation and experimental approaches	University of Strathclyde
19	Neret Pujol	Molecular Dynamics simulations for the creation of vaccines against self-peptides using silica adjuvants	University of Strathclyde
20	Rob Chadwick	Myoglobin as a Biocatalyst for Atom Transfer Radical Polymerisation	University of Strathclyde
21	Sara Tatiana Velasquez	Bioinspired mechanically reinforced amphiphilic polymer conetworks	University of Strathclyde
22	Tales Rocha DeMoura	Structural Studies of The Post-Synaptic Scaffolding Protein, Gephyrin using Cryo - Electron Microscopy	KTH Royal Institute of Technology
23	Varun Saxena	Synthesis, characterization and antibacterial activity of zinc and iron co-integrated hydroxyapatite nanoparticles	University of Strathclyde
24	William Macalester	3D Bioprinting: Building a Human Bone-Dentin Interface	University of Bristol
25	William Zhang	Development of a platform technology to improve the utility and accessibility of enzymes for use in environmental decontamination and for the fabrication of enzymatically active materials.	University of Bristol
26	Zenon Toprakcioglu	Hierarchical Biomolecular Emulsions using droplet-microfluidics	University of Cambridge
27	Marek Bocian	Gellan gum / whey protein isolate hydrogel scaffolds for bone tissue engineering	Lancaster University
28	Rebecca Rabe	Fibril formation of Whey Protein Isolate	Lancaster University
29	Timothy Douglas	Whey protein isolate hydrogels as scaffolds for bone regeneration	Lancaster University