

Spectroscopy in Biomaterials and Tissue Engineering Wednesday 8th July 2015 Agenda

Time	Presentation	
09:30 – 10:00	Registration (coffee served)	
10:00 – 10:10	Welcome & Introduction <i>Darren Roberts, Account Manager, Thermo Fisher Scientific</i>	
10:10 – 10:20	Overview of the Kroto Research Institute <i>Dr Ihtesham ur Rehman, Reader in Biomedical Materials, University of Sheffield</i>	
10:20 – 10:45	Plenary talk <i>Prof. Sheila MacNeil, Prof of Tissue Engineering, University of Sheffield</i>	
10:45 – 11:15	Interactions of carbon nanomaterials with biological systems: how Raman can help <i>Dr Cyrill Bussy, Lecturer in Nanosafety, University of Manchester</i>	
11:15 – 11:30	Coffee Break	
11:30 – 12:00	Seeing biomaterials interactions through Spectroscopy: proteins, cells and tissue <i>Dr Paul Roach, Lecturer in Biomaterials and Interface Science, Keele University</i>	
12:00 – 12:30	Understanding Skin cancer by Spectroscopy <i>Research Student, Kroto Research Institute, University of Sheffield</i>	
12:30 – 13:15	Lunch	
13:15 – 13:45	Group A: Thermo Scientific Technology Update	Group B: Visit the laboratory
13:45 – 14:15	Visit the laboratory	Thermo Scientific Technology Update
14:15 – 14:45	Raman Spectroscopic Analysis Differentiates Between Breast Cancer Cell Lines <i>Research Student, Kroto Research Institute, University of Sheffield</i>	
14:45 – 15:15	Title tbc tbc	
15:15 – 15:45	Developments in Cell-Imaging using Raman technology <i>Jennifer Ramirez, Applications Specialist, Thermo Fisher Scientific</i>	
15:45 – 16:00	Closing remarks	

About the Guest Speakers

Sheila MacNeil - Professor of Tissue Engineering, University of Sheffield

Sheila MacNeil is Professor of Tissue Engineering in the Department of Materials Science and Engineering, joining the department in 2000. She has an undergraduate degree in physiology from the University of Aberdeen and a doctorate on the endocrinology of manic depression from the Medical School of the University of Sheffield.

She is academic lead of the Biomaterials and Tissue Engineering Group within the Department. Members of this group: Professor John Haycock, Readers Dr Ihtesham Rehman, Dr Steve Matcher and Senior Lecturers Dr CK Chong, Dr Frederik Claeysens, Dr Gwen Reilly.

She has previously been Deputy Director of the Kroto Research Institute (from 2005 to 2009) and Director of the University Centre for Biomaterials and Tissue Engineering from 2002 to 2009, promoting interdisciplinary research between engineering, physical sciences and life sciences. She was also a founding Director of the University of Sheffield spin-out company, CellTran Limited from 2000 to 2007. She was the Sheffield lead for an EPSRC Doctoral Training Centre in Tissue Engineering and Regenerative Medicine (a DTC held between three Universities, Leeds, Sheffield and York) from 2008 to 2011.

Ihtesham ur Rehman - Reader in Biomedical Materials, University of Sheffield

Ihtesham ur Rehman was appointed as a Reader in Biomedical Materials in the Department of Materials Sciences and Engineering. He has BSc and MSc degrees in Chemistry and a Doctorate in Biomaterials from the Department of Materials, Queen Mary University of London (QMUL). After a long career at the Interdisciplinary Research Centre (IRC) in Biomedical Materials, QMUL, he joined the Department of Materials Sciences and Engineering in January 2011 and is part of the Biomaterials and Tissue Engineering Group based within the Kroto Research Institute. Ihtesham is a recognised authority on spectroscopy of biomaterials and biological molecules.

Ihtesham is the Founder and Executive Director of Interdisciplinary Research Centre in Biomedical Materials (IRCBM), CIIT, Lahore, Pakistan and visiting professor at the King Saud University, Riyadh, Saudi Arabia .

Cyrill Bussy - Lecturer in Nanosafety, University of Manchester

Cyrill obtained an MSc Degree in Cell & Molecular Biology, specialty Microbiology, from the University Blaise Pascal, Clermont Ferrand, and then an MRes Degree in Biomedical Engineering from the University of Technology, Compiègne (UTC), both in France. He then pursued a PhD in Toxicology at the Radio-Toxicology Laboratory, French National Institute for Radioprotection and Nuclear Safety (IRSN), Fontenay-aux roses, France. His PhD studies focused on the neurochemical and neurobehavioural effects of chronic ingestion of uranium and cesium in rat brains. After a postdoctoral project on the biocompatibility of innovative nanocoatings for implants and prosthesis at the UTC in Compiègne, he moved to the French National Institute of Health and Medical Research (INSERM) at the Faculty of Medicine Mondor-Créteil, France. He evaluated how the physico-chemical properties of carbon nanotubes may influence their biological impacts on pulmonary macrophages,

in the context of occupational exposure. Part of this work was also performed at the Laboratoire de Physique des Solides (affiliated to CNRS), University of Paris Sud-Orsay. In 2010, Cyrill joined the Nanomedicine Lab, UCL School of Pharmacy, University College London, as a visiting post-doctoral scientist and was awarded a Marie Curie personal Fellowship in 2011 to assess the pros and cons of using carbon nanotubes for nanomedicine in the brain. Upon completion of the Marie Curie project, he joined the University of Manchester as a Lecturer in Nanosafety.

Dr Paul Roach - Lecturer in Biomaterials and Interface Science, Keele University

Appointed as a lecturer at Keele University in November 2009, Dr Paul Roach has established micro-fabrication and spectroscopy facilities within the Institute for Science and Technology in Medicine. His current research interests build upon his interdisciplinary background spanning synthetic organic chemistry, materials science, experimental physics and instrumentation, all with a focus on biological responses at the interface with materials. Dr Roach received a Ph.D. in Chemistry for his investigation of protein-surface interactions, within which he utilised FTIR spectroscopy alongside conventional wet assays and acoustic sensing technologies to examine initial protein-surface interactions. Since this time his work has progressed to further understanding the competitive nature of protein adsorption and conformation changes that occur, particularly with respect to surface chemistry and nano-curvature. Raman micro-spectroscopy has allowed more detailed investigation into cell interactions, and tissue components/ structure. This work has led to a number of invited talks and review publications, drawing clinical and industrial interest. Dr Roach sits on the steering group and local management committee for the EPSRC funded Regenerative Medicine Centre for Doctoral Training, and has recently been elected to the UK Society for Biomaterials council.

Jennifer Ramirez – Product Manager, Thermo Fisher Scientific

Jennifer studied the wetting behavior of high surface area, hydrophobic stationary phase particles using Raman spectroscopy at the University of Utah, where she completed a doctoral degree. Since graduation, Jennifer has spent a brief amount of time as a contractor with the US Army working on liquid chromatography. She went back to Raman spectroscopy, joining Thermo Fisher Scientific in 2010 as a Raman Training Instructor. In 2014, Jennifer joined the Raman Marketing Group in Madison as the Product Manager for dispersive Raman instrumentation.

More biographies will be added as they become available.