

# 3<sup>rd</sup> International Conference on Tissue Science & Regenerative Medicine

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## Biomaterials for tissue engineering

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Tissue Engineering is a major upcoming area where biomaterials are finding increasing applications. It involves the regeneration of damaged living tissue with the help of scaffolds made from biocompatible and biodegradable materials. Tissue Engineering provides an excellent alternative solution for the repair and regeneration of damaged human tissue as opposed to permanent implants. Biomaterials form a crucial part of tissue engineering and there are many requirements for the ideal properties of biomaterials to produce an ideal scaffold, such as the suitable mechanical, thermal properties, biocompatibility and processability. There are mainly two different types of biomaterials, synthetic and natural polymers. This symposium will focus on these two types of biomaterials and their use in a range of tissue engineering applications including bone, cardiac, skin, dental and nerve tissue engineering. All aspects of research involving biomaterials in the context of tissue engineering such as synthesis/production, manufacturing and processing, characterisation, *in vitro* and *in vivo* functioning of the biomaterials will be covered. This will be a truly interdisciplinary symposium.

## Biography

Ipsita Roy is a microbial biotechnologist with special expertise in bacterial-derived biodegradable polymers. She is currently a Reader at the School of Life Sciences, University of Westminster, London. She was awarded the prestigious Inlaks Scholarship and the Overseas Research Students Award to study for her PhD at the University of Cambridge. During her time at Cambridge she was awarded the Churchill College Scholarship, the Lundgren Scholarship, Leche Trust Scholarship and the Cambridge University Philosophical Society Fellowship Award. Her PhD at the Department of Biochemistry was on a B12-dependent enzyme, methylmalonyl-CoA mutase. Her postdoctoral work was at the University of Minnesota, USA, at the Bioprocess Technology Institute, where she worked on fatty acid biosynthesis. She taught at the Indian Institute of Technology, India, for four years as an Assistant Professor. During this time she worked actively on the production of biodegradable polymers from *Streptomyces*. She has been at the University of Westminster since 2000 and leads the Applied Biotechnology Research Group. Her group is currently focussed on the production of novel Polyhydroxyalkanoates, PHAs, a family of biodegradable and biocompatible polymers produced by bacteria under nutrient limiting conditions. These polymers have a wide range of applications and are hence of both academic and commercial importance. Her group has pioneered the production of PHAs from Gram positive bacteria such as *Bacillus* sp., which lack immunogenic properties and hence are highly suitable for medical applications. These include applications in the area of hard tissue engineering, soft tissue engineering, wound healing and drug delivery. She has published over 100 research papers in her area, chaired and organised sessions and presented her work at numerous international conferences. She is an editor of the Journal of Chemical Technology and Biotechnology (JCTB) and has edited an 'In Focus' Journal on Biodegradable Polymers, a special issue of the JCTB. Currently she is editing another In Focus Issue on 'Drug Delivery'. She regularly reviews manuscripts for many journals including Biomaterials, Biomacromolecules, Journal of the Royal Society Interface, Journal of Chemical Technology and Biotechnology, Journal of Applied Physics, Material Science and Engineering, Applied Microbiology and Biotechnology, Tissue Engineering, Antonie van Leeuwenhoek, Biotechnology Journal and Reactive and Functional Polymers. She is on the BBSRC, NSERC, Canada, FWF, Austria and NSFC, China, grant-reviewing panels and is the Vice Chair, Biotechnology section, SCI, London, UK. She has been appointed expert in the field of Materials Science and Engineering by the Italian Agency for the Evaluation of University and Research (ANVUR). She has also been appointed by the European Research Council Executive Agency, "ERCEA" to the panel involved in the peer review evaluation of proposals.

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