BioMed Research International

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Special Issue on

Trends in Electroactive Polymers and Composites for Tissue Engineering Strategies

CALL FOR PAPERS

During the last decade, science has promoted tremendous advances in the development of materials for biomedical and tissue engineering applications, with a variety of materials morphologies, from micro- and nanoparticles, fibres, and three-dimensional scaffolds capable of mimicking the natural human extracellular matrix (ECM).

Electricity is present in many functions of human body and understanding the electrical properties of tissues and cells has received increasing interest in recent years. Apart from the biological and chemical stimuli, electrical signals are present in many functions of living cells; that is, they generate electromotive force, control current flow, and charge storage. Moreover, an electrical voltage in the range of -60 to -100 mV exists across the plasma membrane, with the inside of the cell remaining more negative than the outside.

Conductive polymers have highly easily tunable structures and it has been shown that electrical stimuli applied during *in vitro* cell culture may modify cell behaviour (e.g., adhesion and proliferation). Moreover, piezoelectric polymers and composite systems have shown potential for locally delivering electrical cues to cells. Researchers are invited to contribute original research and review articles describing current and expected challenges to this special issue.

Potential topics include, but are not limited to:

- Processing of piezoelectric polymers and ceramics
- Synthesis and processing of conductive polymers
- New processes and technologies for development of electroactive composites and nanocomposites for biomedical applications
- Biodegradable and bioresorbable polymers, as well as scaffold design
- Characterization of the electroactive polymers and ceramics
- Biomedical applications of carbon nanotube-based biomaterials
- Drug delivery systems and kinetics
- Tissue engineering applications, both *in vitro* and *in vivo*

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/bmri/biomaterials/epct/.

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