
Editorial

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Biographical notes: Nathan Quinlan is a Senior Lecturer of Mechanical and Biomedical Engineering at National University of Ireland Galway. He completed his DPhil at the University of Oxford on needle-free intradermal powder drug delivery. His research interests include cardiovascular flow, respiratory air flow, and the development of meshless computational methods. In particular, his group investigates mechanical stress on cells due to turbulent and transitional blood flow induced by cardiovascular devices. He is the secretary the Smoothed Particle Hydrodynamics European Research Interest Community, and a recipient of the Bronze Medal of the Bioengineering Section of the Royal Academy of Medicine in Ireland.

Nicholas Dunne is a Reader of Biomaterials Engineering and has been awarded the prestigious Leverhulme Trust Senior Research Fellowship by the Royal Academy of Engineering (2010) and an Orthopaedic Research Society/British Orthopaedic Research Society Fellowship (2008). He is an academic member of the Advanced Materials and Processes Research Cluster at Queen's University Belfast. He has developed a strong, translational research programme focusing on injectable orthopaedic bone cement systems and tissue engineered bone scaffolds for load-bearing applications. He is currently the Spokesperson for Young Scientists Forum to European Society of Biomaterials and President of the Young Scientists Forum-UK Society of Biomaterials.

This special issue of the *International Journal of Nano and Biomaterials* consists of invited papers based on research talks presented at 'Bioengineering in Ireland', the 17th Annual Conference of the Bioengineering Section of the Royal Academy of Medicine in Ireland, held in Galway on 28th and 29th January 2011. The conference provides a forum for discussion of current research across the whole spectrum of bioengineering, including biomechanics (from subcellular to musculoskeletal scales), biomaterials, bioelectronics, neural engineering, tissue engineering, and medical devices. The quantity (over 120) and quality of research presentations at the conference reflect the rapid growth of biomedical engineering research in Ireland over the past two decades. Much of this research activity has been carried out in partnership between academia and

the medical device industry, which plays an increasingly important role in Ireland. The scope of research displayed at the conference, and in this issue, testifies to the essential role of engineering in modern and future healthcare.

The papers selected for publication in this special issue describe research on the synthesis of new biomaterials, engineered vascular tissue, the electrical activity of cells, the development of medical diagnostic tools, and new methodology for in vitro biomechanical studies. This compact cross-section of biomedical engineering spans a striking range of scientific domains, highlighting the interdisciplinary nature of the field.