

**NICOLAU, DAN V.**

**Honorary Member, CANADA**

**Professor of Bionanoengineering**



**Qualifications:** Meng, MSc, Ph.D. (Bucharest), FSPiE.

**Research statement:** My research and teaching interests focus on biological engineering, in particular at its intersection between Nano- Bio- and Info. The new discipline of biological engineering is emerging from the application of engineering concepts, technologies and devices to biology and medicine. My present and near future research concentrate on the design and fabrication of dynamic hybrid nanodevices, including those based on molecular motors; single molecule diagnostic devices fabricated by semiconductor micro- and nano-fabrication; and the study of the „intelligent” behaviour of microorganisms in microfluidic networks.

**Biography:** Prof. Dan Nicolau holds a Chair in Bionanoengineering in the Department of Electrical Engineering and Electronics. Dan has a Ph.D. in Chemical Engineering, a MS in Cybernetics, Informatics & Statistics and a Meng in Polymer Science & Engineering, all gained in Romania. He has published more than 80 papers in peer-reviewed scientific journals, a similar number of full papers in conference proceedings, 6 book chapters and edited a book (with Uwe Muller, on microarray technology and applications), edited or co-edited the proceedings of more than 20 conferences (totalling nearly 1000 contributions) and was the guest editor of an issue of *Biosensors & Bioelectronics*. Dan has been the principal investigator of 14 major research projects from 2000 (when he joined the academia after many years in industrial and corporate R&D), totalling approx 2.5mil pounds (equivalent), 30% of which was from international funding institutions. He is a Fellow of the International Society of Optical Engineering (SPIE).

Dan's present research aggregates around three themes: (i) micro/nano-structured surfaces for micro/nano-arrays fabricated via classical microlithography, micro-ablation and Atomic Force Microscopy; (ii) dynamic micro/nanodevices, such as microfluidics/lab-on-a-chip and devices based on protein molecular motors, with applications in diagnosis, drug discovery and biocomputation devices; and (iii) intelligent-like behaviour of microorganisms in confined spaces, which manifests itself in the process of survival and growth. Professor Nicolau represents the University of Liverpool in a large FP6 integrated project (Charged Particle Nanotechnology) focusing on applications of nanofabricated structures in a variety of applications, including biomimetic surfaces.

**References:** <http://www.bionanoinfo.com/person.php?person=10>

<http://www.liv.ac.uk/eee/academicstaff/nicolau.htm>

<http://www.ausnano.net/index.php?page=profiles&profile=138>