Electromagnetic field interaction with biological tissues for cancer and regenerative medicine

Bangor, 13 July 2018, Pontio PL5

Coffee and Welcome Remarks: 8:30-9:00

M1: Dielectrophoresis, sensing and stem cells analysis	Chair: Arnaud Pothier *UNILIM/XLIM, France*
9:00-9:30 (Keynote)	**Trends in the biomedical applications of dielectrophoresis** Ron Pethig, *The University of Edinburgh, UK*
9:30-9:50	**Isolation and characterization of the Cancer Stem cells (CSCs): one question, many answers** Sofiane Saada, *UNILM/CAPTuR, France*
9:50-10:10	**BiCMOS integrated microfluidic cell sorting platform for cell study** Arnaud Pothier*, UNILIM/XLIM, France*
10:10-10:30	**Dielectric characterization of brain cancer cell lines** Wesam Gamal, *Bangor University, UK*

Coffee Break 10:30-11:00

M2: Electrostimulation approaches	Chair: Caterina Merla *ENEA, Italy*
11:00-11:30 (Keynote)	**Developing plastic bioelectronic devices for measuring and manipulating cells in vitro and in vivo** *Rodney O'Connor, Ecole des Mines de Saint-Etienne/ Center of Microelectronis of Provence, France*
11:30-11:50	**Electro-permeabilization of isolated cancer stem cells with a push-pull configuration of high power MOSFETs** *Ilan Davies, Creo Medical/Bangor University, UK*
11:50-12:10	**Ultra-short pulsed electric fields: a first study on cancer stem cells** *Caterina Merla, ENEA, Italy*
12:10-12:30	**Disruption of microtubule dynamics by nanosecond pulsed electric fields in U87 human glioblastoma cells** *Lynn Carr, UNILIM/XLIM, France*

Buffet Lunch 12:30-13:30

A1: Tissue level applications and thermal effects	Chair: Chris Hancock *Creo Medical, UK*
13:30-14:00 (Keynote)	**Microwaves in biological tissues; ripples or tsunamis?** *Paul Sibbons, Northwick Park Institute for Medical Research, UK*
14:00-14:30 (Keynote)	**Creating biological scaffolds and matrices for clinical application** Tahera Ansari, *Northwick Park Institute for Medical Research, UK*
14:30-14:50	**Factors that control temperature gradient when microwave energy is used to heat tissue** *Malcom White, Creo Medical, UK*

Coffee Break 14:50-15:20

A2: New microwave energy delivery approaches and non-thermal effects	Chair: Cristiano Palego *Bangor University, UK*
15:20-15:40	**A Miniature flexible microwave applicator for the ablation of pancreatic tumours at 5.8GHz** *William Taplin, Creo Medical/Bangor University, UK*
15:40-16:00	**Preclinical efficacy of a microwave and adrenaline based haemostat utilizing a novel coaxial cable structure** *Shaun Preston, Creo Medical/Bangor University, UK*
16:00-16:20	**Microwave electric field at 2.45 GHz modulates the β-adrenergic response of human embryonic stem cell-derived cardiomyocytes** *Catrin Williams, Cardiff University, UK*

16:20-16:30 Final Remarks and Greetings

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