Progress in Electrically Active Implants – Tissue and Functional Regeneration

Tuesday - Sept 29th

09:00 – 09:05	**Welcome**	
Keynote Lecture I		
09:05 – 09:35	**Thomas Stieglitz - Neural implants in bioelectronics medicine: tools for diagnosis and novel treatment options**	
Session I: Developments in Electrical Neurostimulators		
09:35 – 09:45	John Fleming	Clinically-viable approaches for closed-loop deep brain stimulation in Parkinson's disease
09:45 – 09:55	Kevan Hashemi	An Implantable, Battery-Powered, Wireless, Stimulator
09:55 – 10:05	Franz Plocksties	Towards an Energy Autonomous Implant for Closed-loop Neurostimulation
10:05 – 10:15	Maria Kober	Development of a fully implantable rodent DBS system for long-term neurostimulation
10:15 – 10:35	**Discussion**	
10:35 – 10:45	**Coffee Break**	
Keynote Lecture II		
10:45 – 11:15	**María Angeles Pérez Ansón - Multiscale simulation of bone tissue regeneration**	
Session II: Multiscale Modelling and Simulation in the field of Implantology and Tissue Regeneration		
11:15 – 11:25	Hendrikje Raben	Numerical Model of an Electro-Stimulating Implant for a Porcine Mandibular Critical Size Defect
11:25 – 11:35	Bojana Rosic	Bayesian multiscale analysis describing mechanical response of bone tissue
11:35 – 11:45	Wiebke Radlof	Predictability of the mechanical behaviour of additively manufactured porous structures for the application in load-bearing implant structures
11:45 – 11:55	Abdul Razzaq Farooqi	Computational Modeling of Electroactive Hydrogels for Cartilage–Tissue Repair Using Electrical Stimulation
11:55 – 12:15	**Discussion**	
12:15 – 13:15	**Lunch Break**	
Keynote Lecture III		
13:15 – 13:45	**John G. Hardy - Electroactive Biomaterials for Drug Delivery, Tissue Engineering and Regenerative Medicine**	
Session III: Describing Therapeutic and Regenerative Electrical Stimulation – From Idea to Reality		
13:45 – 13:55	Kai Budde	Documenting an Electrical Cell Stimulation Experiment–Guidelines at Work
13:55 – 14:05	Abijeet Mehta	Physiological electric fields induce directional migration of mammalian cranial neural crest cells
14:05 – 14:15	Judith Evers	Characterisation of the electrode-tissue interface of chronically implanted stimulated and un-stimulated deep brain stimulation electrodes
14:15 – 14:25	Konstantin Butenko	Stochastic optimization of deep brain stimulation in the entopeduncular nucleus in a hamster model

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Wednesday – Sept 30th

09:00 – 09:05	**Welcome**	
Keynote Lecture IV		
09:05 – 09:35	**Yiannos Manoli - The Vision of Deep-Brain Recording neuroDSM – a Digital Fully-Immersible Silicon Neural Probe**	
Session IV: Electrical Conductive and Piezoactive Materials and Energy Supply to Electrically Active Implants		
09:35 – 09:45	Sofiane Bouhedma	Bioheat-based thermoelectric power supply to electrically active implants
09:45 – 09:55	Dennis Flachs	Biocompatible energy-harvester based on FEP-piezoelectrets
09:55 – 10:05	Amir Azinfar	Tuning the surface morphology of polyelectrolyte multilayer films by changing the chain length of the PSS macromolecule on a nanometer scale and examining its mechanical properties in pure water and NaCl solution
10:05 – 10:15	Thomas Distler	Enzymatically Crosslinked Oxidised Alginate Gelatine Hydrogels for Cartilage Tissue Engineering and their Potential for Conductive Hydrogel Derivatives
10:15 – 10:35	**Discussion**	
10:35 – 10:45	**Coffee Break**	
Live Poster Session		
10:45 – 11:15	**Abstract #1-12**	
11:15 – 11:45	**Abstract #14-34**	
11:45 – 12:15	**Abstract #36-48**	
12:15 – 12:30	**Closing**	

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