SMACD 2017

14th International Conference on Synthesis, Modeling, Analysis and Simulation Methods and Applications to Circuit Design

12th - 15th of June 2017, Giardini Naxos - Taormina, Italy.

Special Session on

"Modelling and circuit design in Electroporation"

Call for Papers

Electroporation phenomenon, by which the permeability of biological membranes to impermeable molecules can be increased upon the application of external pulsed electric field (PEF), has gained increasing attention over the past decades due to its medical, biotechnological, industrial and environmental applications. Efficient optimization of such applications require an expansion of our knowledge of basic interaction mechanisms between the biological structures and the electric field, which can be pursued by experiments and modelling. Analytical, circuital and numerical models of electroporation provide an aid in the interpretation of experimental results, allow to study phenomena occurring on spatial and temporal scales that are not observable in the experiments, and provide support to the experimental design. On the other hand, the design and set up of circuits and systems for PEF generation and delivery, which require fast switching elements, wideband and high-voltage component, is another important challenge in this research field.

This Special Session will be focused on innovative approaches to the modelling of electroporation phenomenon, at both single-cell and multi-cellular levels, with particular attention, but not limited to, circuital, multi-compartment and field models.

Moreover, new technologies, methodologies and tools for the design, synthesis and control of power systems and PEF generators, as well as innovative solutions for ns and sub-ns pulse generation, and new materials for pulse application and delivery will be also given insight.

Topics include, but are not limited to:

- Modelling of electroporation
- Circuits and systems for PEF generation
- Control systems for high voltage pulses
- Tools for design and synthesis of power electronics for PEF
- New materials for electrodes and pulse applicators
- Fast switching technologies
- Generation of ns and sub-ns pulses
- Micro- and nanotechnologies for single-cell electroporation

Important dates

- 17th February 2017 — Paper Submission Deadline
- 1st April 2017 — Author Notification
- 15th April 2017 — Camera Ready Paper Submission
- 15th April 2017 — Early Registration Deadline

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Submission and paper specifications

- all prospective Authors are invited to electronically submit regular papers of their work (paper length up to 4 proceedings pages) through the website of SMACD 2017 (submissions opening: mid December);
- all prospective Authors should prepare the manuscript according to the IEEE double-column conference paper template style: the working language for the conference will be English, which will be used for all presentations and printed material;
- the papers submission will follow the same calendar of regular papers and will be reviewed as the others: Authors should only indicate the Special Session when submitting their own paper on our submission system (EasyChair).

Organizers

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