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# Bioelectrochemistry

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## Editorial

The present Special Issue of Bioelectrochemistry, the official scientific journal of the Bioelectrochemical Society (BES), contains selected contributions of oral and poster presentations at the XIXth International Symposium on Bioelectrochemistry and Bioenergetics. The symposium, as the main biannual conference of BES, was organized by Justin Teissie and Luis M. Mir, April 1–4, 2007 in Toulouse, and was attended by more than 180 participants, mainly members of the BES.

The scientific program included three plenary lecturers. Prof. I. Willner, Hebrew University of Jerusalem, on "Design of new architectures and motors based on biological processes", Prof. J. Wang, Arizona State University, on "Nanomaterials for monitoring and controlling biomolecular interactions" and the awardee of the Giulio Milazzo Prize 2005, Prof. E. Neumann, University of Bielefeld, on "Twenty five years (1982–2007) of functional electrotransfer of naked gene DNA into cells".

The winner of the Giulio Milazzo Prize 2007 is Prof Dieter Walz, Basel, previous Principal Editor (1999–2005) of our journal Bioelectrochemistry. The prize lecture was on "Modelling of bioelectrochemical phenomena". The Luigi Galvani Prize 2007 was awarded to Dr. Mojca Pavlin, Ljubljana, in recognition of her excellent work on "Theoretical and experimental analysis of diffusion of ions and molecules during cell electroporation – the relation between transient and stable pores", also documented here.

Generally, all contributions of this issue of Bioelectrochemistry cover and reflect the various scientific topics of our community and document the progress of science and technology at the interface between physics, chemistry and life sciences. The research fields comprise the basics of biochemistry and biophysics, life sciences and

biotechnology as well as industrial and clinical applications. Fundamental research in bioenergetics provides elaborate concepts for energy conversions which are also used for the design of new biosensors. The bioenergetics and biotechnology of membrane organization and function continues to provide new concepts and methods for drug delivery and for direct transfer of genetic material. Electrical and molecular mechanical forces are clearly the key elements of the cohesion of cell membrane structures and membrane functions in a tissue.

The controlled application of electric pulses continues to be used for the purpose of achieving major changes in the cell organization, inclusively providing controlled access to the cytoplasm. This is only one example illustrating how basic research in bioelectrochemistry offers new perspectives for biotechnological and biomedical applications.

We, the guest editors of this issue, would like to thank all participants of the Toulouse Meeting and all the contributors to this special issue for their efforts to promote progress to the broad field of Bioelectrochemistry. We thank the Principal Editor Eberhard Neumann for his engaged help of editorially managing this Special Issue.

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