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Introduction to Fifth Special Issue on Electroporation-Based Technologies and Treatments

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Introduction to Fifth Special Issue on Electroporation-Based Technologies and Treatments

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This special issue of the *Journal of Membrane Biology* contains reports on recent developments in the field of electroporation by participants in the International Workshop and Postgraduate Course on Electroporation-Based Technologies and Treatments held in November 2014 in Ljubljana. This was the eighth session of what is now an annual event, first organized in 2003. The 66 participants—students, young scientists, invited lecturers, faculty members, and special guests—came from 15 countries (Algeria, Belgium, China, Croatia, France, Germany, Ireland, Israel, Italy, Lithuania, Macedonia, Netherlands, Slovenia, Spain, and United States). In addition to lectures on the physics, electrical engineering, and biology of electroporation, this year's sessions included topical talks on electrochemical processes associated with pulsed electric field exposures, electroporation in food and biomass processing, systemic electrochemotherapy, and electrochemotherapy of colorectal liver metastases. One of the features of this week-long workshop course is the practical training offered each afternoon. Organized and led by associates of the Laboratory of Biocybernetics of the Faculty of Electrical Engineering at

the University of Ljubljana, and by visiting researchers, these laboratory sessions provide a unique opportunity for hands-on experience guided by experts, with activities including gene electrotransfer, ratiometric fluorescence microscopy, microbial inactivation, electrical characterization of artificial membranes, treatment planning for electrochemotherapy, and molecular dynamics simulations. The school is now an established and unique platform for the acquisition of theoretical and practical knowledge of electroporation mechanisms and applications.

The workshop and postgraduate course were conducted within the scope and with the support of the European Associated Laboratory on Pulsed Electric Fields Applications in Biology and Medicine (LEA EBAM) and co-organized by COST TD1104 Action (<http://www.electroporation.net/>).

The peer-reviewed selection of articles in this issue provides a cross section of the ongoing electroporation-related research being carried out by participants at the Ljubljana meeting. We are grateful to the contributors for their efforts in presenting their recent results, which will challenge readers, whether new or old in the field, to evaluate assumptions and consider new ideas, and we are especially grateful to our scientific colleagues who reviewed the manuscripts.

Finally, we acknowledge the indispensable support of the agencies, societies, and companies who sponsor the school, in particular, the Slovenian Research Agency, the Centre National de la Recherche Scientifique (CNRS), and the Bioelectrochemical Society, which have sponsored the school from its very beginning, and also IGEA (Italy), Mediline (Slovenia), Iskra Medical (Slovenia), BIA Separations (Slovenia), LTFE (Slovenia), and Betatech (France), who made it possible to increase student participation through reduced fees and lodging expenses.

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