The special issue on biological effects of electromagnetic fields

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It is my distinct honor to thank Dr. Peter Kevan and Editorial Board for providing me with the opportunity to publish the third special issue of the Journal dedicated to the world experience in studying the potential hazard and benefit of electromagnetic fields. The papers included in this issue were presented at the Fifth International Workshop “Biological Effects of Electromagnetic Fields” and a Conference on Magnetotherapy that took place in Siena, prior to the Workshop.

The Fifth International Workshop “Biological Effects of Electromagnetic Fields” took place at the resort Città del Mare, located at about 30 km east of Palermo, from September 28 to October 1, 2008. This meeting originated in 2000 as a “Millennium Workshop of Biological Effects of EMFs” and took place at the Greek Island of Crete. Since then, every other year this Workshop took place at different island in Mediterranean Sea: Rhodes, Kos, Crete, and in 2008—in Sicily.

The resort offered wonderful environment at Terrasini Bay as well as to visit the capital of Sicily, Palermo. The participants had the opportunity to visit main attractions in Palermo and exceptional churches that maintained the symbiosis of Byzantine and Arab architecture and interior. This was an excellent symbolic act of transferring the site of the Workshops from Greek Islands to an Italian Island. In addition, after 1-h drive, participants were at amazing little town of Erice, site of the International Center Ettore Majorana.

The Sicily meeting went under the leadership of Prof. Antonio Lo Casto from University of Palermo. The

Workshop was sponsored by the Local Government of Sicily, University of Palermo and a number of Italian and International organizations. Recognizing the importance of this meeting to bring together young scientists from the Mediterranean area, East Europe and Middle East, the Bioelectromagnetics Society for the fourth time provided a sponsorship to the Workshop.

The scientific program included 14 plenary lecturers presented by recognized scientists like Dr. P. Vecchia, Dr. P. Kostarakis, Dr. M. Grandolfo, Dr. C. Ohkubo, Dr. D. Miklavcic, Dr. A. Pakhomov, Dr. R. Cadossi, Dr. M. Markov, Dr. A. Colbert, Dr. M. Israel, Dr. F. Prato, Dr. T. Kalkan. The plenary lectures covered large spectrum of topics—from ICNIRP guidelines and standards of exposure to MFs in different countries, to clinical application, to nanoporation. The Workshop was opened with a very exciting lecture of Prof. Panos Kostarakis who described with photos and short videos the origin and history of the Workshop.

The platform and poster presentations were separated in 14 sessions for platform presentations and two poster sessions. Two series of sessions took place: Biological/Medical and Engineering/Dosimetry gave the podium for 59 presentations. Due to large number of posters, two afternoons were secured for viewing 60 posters and this provided much better opportunity for discussions among more than 200 scientists from 32 countries, including North America, Japan, Australia. Very large group of scientists came from Europe, including Italian fellows. Especially, I would like to emphasize the attendance of 10 scientists from Iran. A very compact group from The Netherlands uses the Workshop to enter the field of bioelectromagnetic research. Following the traditions of the Workshops, Prof. Lo Casto offered free accommodation to 35 young scientists from countries with low monthly income.

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I believe that this Workshop series belongs to the people, not to countries or organizations. I was pleased to see young people who presented papers at previous meetings as students, and now being team leaders. This fact is enough to prove the importance of the Palermo meeting. It provided the opportunity for low cost of participation and friendlier atmosphere than at large international meetings.

This special issue includes 22 papers selected from presentations at Siena and Palermo meetings. The first two papers are of great environmental importance since they represent the worldwide standards for exposure to electromagnetic fields and a systematic description of the wireless technologies in use, in different parts of the world. Further, two papers were discussed on the principles of measurements of electromagnetic fields, followed by papers on shielding from electromagnetic fields with industrial and transport origin. Mathematical modeling of electromagnetic fields and evaluation of the electromagnetic fields from MRI units represent a plausible link to laboratory biological studies.

The papers on clinical use of electromagnetic fields begin with a brief excursion in the use of magnetotherapy through the centuries, followed by three papers that discussed the principle of clinical dosimetry and methodological challenges to conduct clinical trials. Of particular interest are papers on TAMMEF therapy that explain the principles and results of using musically modulated magnetic fields.

Effects of cellular communication on EEG are discussed in an attempt to evaluate the potential hazard of these signals for human brain. New hypothesis of participation of trigger points and systemic effects in magneto therapeutic effects are also presented. Probably, the most interesting is the pioneering paper on the effects of static magnetic fields on the apoptosis in bone marrow stem cells in rats.

Once again, I would like to thank the Journal and especially the authors who accepted my invitation and contributed for the execution of this project.