Objectives

The human organism does not function solely on the basis of biological or biochemical cellular reactions, but also on the basis of electromagnetic fields. The humans are indeed "electromagnetic beings". It has been established that electromagnetic fields operating at various frequencies can have useful and beneficial effects in clinical medicine, either for diagnosis or treatment. To mention a few of the best of non-ionizing frequency band applications: the therapeutic benefits of electrotherapy, the clinic effects of direct currents (electrolysis), the clinical effects of external electric impulses on the cardiac muscle (pacemaker, defibrillators), clinical effects of micro measurements generated by pulse magnetic fields to improve healing in tissue repair and bone fractures. But also, and because the very weak electrical currents are part of our human Physiology (for example at the level of communication between cells), the question of the possible disruptive effects on the human body and eventual consequences they might have for health, may legitimately be raised. The levels of the electromagnetic fields (EMFs) in the environment as a consequence of our modern life and way of living are increasing every day and so the Public exposure to EMF due to different sources is also increasing. There is an increasing great public concern and awareness of the potential health effects due to these radiations. The findings of scientific research are inconclusive, there is not unanimity of opinions and there is ongoing debate. The objective of this International Conference is to establish and consolidate a preferred forum where a multidiscipline audience with different backgrounds, as researchers, physicians, engineers, ecologists, consultants, decision and opinion makers, public authorities, meet together to present and discuss the new developments and trends on electromagnetic field analysis, simulation and application with significance to the human health. The Conference contributions concern the areas of EMF Modeling, Measurement and Simulation, Bio-effects of EMF, Environmental Safety Policy issues and International Standards. Provide a forum for exchange of experiences and discussion of results promoting joint international cooperation between R&D groups

Chairman

Carlos Lemos Antunes, Prof. Dr., University of Coimbra, FCTUC;
President of APDEE, Portugal.

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Important Dates

15th March 2013 – Digest Submission Due
15th April 2013 – Acceptance Notification
15th May 2013 – Reduced Registration Fee due
01st July 2013 – Registration, Payment, Final Paper Submission
19th – 21st September 2013 – Conference Days

Thematic Areas

AREA 1: EMFs Modeling, Measurement & Simulation

a) Computational Electromagnetics, Electromagnetic Compatibility (EMC).
b) Computation of EMFs in the Living Organism.
c) ELF EMF produced by High Voltage AC Power Cables.
d) EMFs in Radio and Wireless Communications (Mobile Phones).
e) EMFs Produced by Microwave Devices.
f) EMFs Produced by MRI Devices.
g) EMFs at Home and Workplaces.
h) EMFs Interaction with Biological Systems.
i) EMC Teaching. Mitigation Techniques.
j) Electromagnetic Interference with Medical Devices.
k) Instrumentation. Measurement Techniques.
l) Radiation, Dosimetry Measurements and Instrumentation.

AREA 2: Bioeffects of EMFs & Health Implication

a) Occupational/Residential Exposure and Risk Assessment to EMFs.
b) Epidemiologic Studies (RF and ELF).
c) EMF and Immunology.
d) Biomedical Application of EMFs.
e) EMF Therapy and Clinic Applications.
f) Endogenous Electric and Magnetic Fields.
g) Biological Laboratory Studies (In vivo/in vitro).
h) Health Impacts of MRI Devices.
i) Health Impact of Mobile Phone/Base Stations.
j) Health Impact of Overhead High Voltage Power Lines.
k) Health Impact of Lasers, UV.
l) Exposure and Cancer.
m) Behavior Sensitivity to EMFs.
n) Pathophysiologic and Biochemical Aspects of EMFs.
o) Effects of EMFs on the Central Nervous System.
p) Cardiovascular and Thermophysiological Effects of EMFs.

AREA 3: EMFs, Risk Assessment & Policies

a) Development of EMF Safety Standards & Directives.
b) Public Concerns of Health Risks from Exposure to EMFs.
c) Environmental Safety and Policy.
d) Risk Communication.
e) International Standards Harmonization.
f) Occupational/Residential Exposure and Risk.
g) Research Projects and International Cooperation.

Venue

Porto is one of the most ancient cities of Europe, with an unequaled landscape, combining harmony with the urban structure and presenting a frame of rare beauty. The historic center of the city was classified as World Heritage by UNESCO in 1996.
The "Ribeira", is delightful, with narrow streets, typical and picturesque houses recently restored, and excellent bars and restaurants with typical food. Porto is known too for the excellent and world renowned wine (Porto wine), the bridges, and for many and varied monuments like the Clerics Tower, Santa Clara Church, São Francisco Church. Porto has too a number of outstanding buildings like the Stock Enchange, São João Theatre, the São Bento railway station considered one of 16 most beautiful railway stations in the world. Recently, the *Lonely Planet*, a world leader in tourist guides, put Porto's city in 4th place in a group of 10 destinations with better quality-price ratio for 2012.

Publications

Selected papers presented at the Conference and following another reviewing process, will be published in the Post Conference issue: COMPEL Journal, Brazilian Journal of Biomedical Engineering and Monograph by IOS Press.

EHE2013 Conference Secretariat Contacts

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