Eur. Phys. J. Appl. Phys. **46**, 32601 (2009)
DOI: 10.1051/epjap/2009039

THE EUROPEAN PHYSICAL JOURNAL
APPLIED PHYSICS

Editorial

This special issue contains a selection of peer-reviewed papers based on talks presented at the First International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Metamaterials'2007 (http://www.metamorphose-eu.org/Congress/). This congress was held in Rome on 22–26 October 2007. The congress was organized by the Virtual Institute for Advanced Electromagnetic Materials and Metamaterials (METAMORPHOSE VI; http://www.metamorphose-vi.org/) and was hosted by the University Roma Tre (Italy).

The event was sponsored by a number of technical international and national organizations, publishing companies, funding bodies, and European Networks of Excellence and industries. The congress comprised a three-day conference (22–24 October) and two-day school (25–26 October) belonging to the European Doctoral School on Metamaterials (http://www.school.metamorphose-eu.org/).

The Conference Program includes a set of Keynote talks on the state of the art of metamaterial research in microwaves and optics given by Profs. George Eleftheriades and Vladimir Shalaev, respectively. It contained also 40 oral sessions (regular, focused, and invited sessions), which were organized into four parallel sessions each day and 2 poster sessions. During the conference, approximately 320 papers were presented by the delegates, representing 40 different countries of the five Continents.

The first three articles deal with the challenging problem of homogenization of complex materials and metamaterials. In the following two articles, the authors consider the problem of surface wave propagation in metal-semiconductor structures and magnetized ferrite layers filled with a wire medium. Three articles deals with specific cases of metamaterials: chiral materials, periodic layered materials and metamaterials based on periodically loaded transmission lines. Finally, two application-oriented articles describe the use of metamaterials in microwave devices and antennas.

The second edition of the Congress on Advanced Electromagnetic Materials in Microwaves and Optics was in Pamplona, Spain, on 21–26 September 2008.

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Article published by EDP Sciences