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Introduction

Unique electromagnetic features of metamaterials that have been demonstrated over the past two decades have created prospects of advancement in new photonics and nanophotonics applications including negative index engineering, superlensing, optical cloaking, and passive and active integrated photonic circuitry.

This sixth conference (the third one held in Prague) in a series of SPIE conferences on metamaterials has brought together the scientific communities of metamaterials, plasmonics, and nanomagnetism. It has provided an overview of recent activities in the field of artificial nanomaterials with tailored electromagnetic properties. The conference provided a forum to stimulate interaction among people involved in both fundamental research and those interested in future applications of metamaterials and also took advantage of the synergy arising from other 20 parallel conferences held at the SPIE Congress on Optics and Optoelectronics organized in Prague by the Institute of Physics, Academy of Science of the Czech Republic, and SPIE.

The speakers presented recent achievements in the investigation of emission properties and plasmon-mediated energy transfer of metallic nanoparticles, ultrafast and nonlocal effects in metallic metamaterials, in analytical description of metal-insulator-metal structures, novel techniques for retrieval of effective parameters of metamaterials, and description of quantum metamaterials with gain. New concepts of plasmonic devices for light transport in the subwavelength scale such as plasmonic nanorod and nanoparticle arrays that may potentially considerably surpass the optical field confinement of silicon waveguide were discussed in several interesting presentations. In the field of nanophotonic magneto-optical plasmonic structures there have been reported a large variety of strongly enhanced magneto-optical phenomena or even entirely novel nonreciprocal and unidirectional effects.

The chairs of this conference would like to thank all participants who contributed to the meeting, the SPIE team, and the program committee members.

Vladimir Kuzmiak
Peter Markos
Tomasz Szoplik

