

Optics Communications Special Issue on “Nonlinear Optics in Metamaterials”

Submission Deadline: July 1, 2009

Guest Editors: **Natalia Litchinitser**, University at Buffalo, The State University of New York, USA and **Michael Scalora**, Charles M. Bowden Research Facility, RDECOM, US Army Aviation and Missile Command, USA.

Scope: Metamaterials can fundamentally change nonlinear light-matter interactions and present unparalleled opportunities for light manipulation. Optics Communications invites manuscript submissions in the area of nonlinear optics in metamaterials. The goal of this issue is to highlight, through a collection of original contributions, recent advances in nonlinear nanostructured metamaterials, including metal-dielectric and semiconductor-dielectric composites, waveguides, graded refractive index engineered structures, and apertures on metallic substrates. Broad technical areas include (but are not limited to):

- Mechanisms of nonlinear optical response in metamaterials
- Harmonics generation and parametric effects in magnetic and negative index metamaterials with $\chi^{(2)}$ and/or $\chi^{(3)}$ nonlinearity. Nonlinear wave mixing and wavelength conversion effects
- Nonlinear guided wave structures
- Temporal and spatial soliton propagation
- Bistability and multistability
- Measurement and characterization techniques for metamaterials
- Nonlinear effects in graded-index and periodic metamaterials
- Novel approaches to loss compensation
- Ultrashort pulse propagation phenomena
- Surface plasmon and field localization induced enhancement of harmonic generation in centro-symmetric materials.

The authors interested in submitting a manuscript should contact Dr. Natalia Litchinitser at natashal@buffalo.edu, Dr. Michael Scalora at michael.scalora@us.army.mil, and Dr. Benjamin Eggleton at optcom@physics.usyd.edu.au. Please upload your paper to Optics Communications at <http://ees.elsevier.com/optics> and indicate in the cover letter that the paper is submitted to the special issue on “Nonlinear Optics in Metamaterials.” All submissions including invited will be reviewed in accordance with the normal procedures of the journal.