

CALL FOR PAPERS

Mapping electromagnetic fields at nanometer scales is crucial for a multitude of applications ranging from biosensing to quantum optics, to optoelectronics. The near-field scanning optical microscope (NSOM), with its spatial resolution beyond the diffraction limit and high chemical sensitivity, serves as a powerful tool for studying complex electromagnetic fields near nanostructures. NSOMs are making a significant impact on novel technologies such as nanomaterials, nanophotonics, and single molecule devices. Recent developments in the field of near-field microscopy have resulted in its increased functionality. The phase and amplitude of different vector components of both the electric and magnetic fields are now accessible that allows the complete mapping of light fields at the nanoscale. Modern near-field microscopes are able to study ultrafast temporal or spectral evolution of propagating pulses in nanostructures. High local intensities in the vicinity of near-field probes greatly increase nonlinear effects. Besides technological developments, new theoretical methods also emerge devoted to the interpretation of near-field signals or acquiring additional, for example, subsurface, information.

In this special issue, we invite researches to submit original papers as well as review articles that will stimulate the continuing efforts in the development of new tools for near-field scanning microscopy as well as theoretical methods aimed at the understanding of electromagnetic fields at nanoscales.

Potential topics include but are not limited to the following:

- ▶ Local analysis of nanophotonic structures
- ▶ Data storage applications
- ▶ New types of near-field probes
- ▶ Nanotomography
- ▶ Inverse problems in near-field reconstruction
- ▶ Nanospectroscopy
- ▶ Nano-Raman, nano-two-photon, and nano-second harmonic spectroscopy
- ▶ Measurements of local density of states
- ▶ Detection of magnetic near-field
- ▶ Quantum near-field plasmonics
- ▶ Multimodal operation of near-field microscopes
- ▶ Terahertz and microwave scanning microscopy
- ▶ Near-field photonic forces for nanoparticle manipulation

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/scanning/rfsm/>.

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First Round of Reviews

Friday, 24 November 2017

Publication Date

Friday, 19 January 2018