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Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XXII (OP103)

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Plasmonics: Design, Materials, Fabrication, Characterization, and Applications is currently undergoing intense developments. Novel plasmonic materials, structures, and phenomena covered under this topic span broad multidisciplinary interests from fundamental optics, physics, and chemistry to applications in nanophotonics, biophotonics, green photonics, and biomedicine.

The Plasmonics: Design, Materials, Fabrication, Characterization, and Applications conference requires a 500-word Abstract for Review.

Papers are solicited in the following areas:

THEORY, SIMULATION, AND DESIGN ACROSS ALL SUBAREAS

- plasmonic phenomena and effects
- ultrafast plasmonic effects and coherent control
- plasmon polaritonics
- surface-enhanced Raman scattering
- plasmon-enhanced nonlinear phenomena
- · luminescence enhancement and quenching
- quantum nanoplasmonics: QED effects, plasmon-assisted quantum information, spasing, and nanolasing in plasmonic nanostructures
- microscopic theory of plasmonic properties
- plasmonic imaging, including probe ultramicroscopies, superlenses, and hyperlenses
- novel plasmonic systems such as graphene
- nanoplasmonic Fano resonances
- electron-plasmon interactions
- · active plasmonics theory and design
- plasmonic thermal effects
- advanced design strategies including machine learning, inverse design
- · chiral photonics and plasmonics
- spin and angular momentum of photons and plasmons

PLASMONIC MATERIALS AND STRUCTURE FABRICATIONS

- nanofabrication of novel materials
- chemical fabrication including bottom up and self-organized processes
- lithographic and nanopatterning fabrication (top down)
- biomimetic and bio-inspired fabrication
- active, tunable, and reconfigurable methods
- rapid and large area fabrication.

PLASMONIC PHENOMENA AND CHARACTERIZATION

- quantum entanglement and interference
- spectroscopies (spectral, time-domain, combined and multidimensional)
- local probes, nano-optics, and near field phenomena
- plasmon-assisted PEEM and energy-loss spectroscopy and visualization of plasmonic phenomena
- nonlinear and coherent optical properties
- plasmonic enhanced phenomena: SERS, SEIRA, nonlinear generation, luminescence, including molecules and nanostructured metals
- extraordinary transmission, diffractive, and refractive phenomena
- novel plasmonic systems such as graphene
- Fano resonances in nanoplasmonic systems
- plasmon polariton propagation in arrays of metal nanoparticles and metal nanoplasmonic waveguides
- semiconductor plasmonics
- fundamental physics of left-handed (negative-refraction) plasmonic materials
- active plasmonics
- · topological plasmonics
- plasmonics in 2D materials.

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PLASMONICS DEVICES AND SYSTEMS

- plasmonic quantum devices
- plasmonic sensors
- nanoplasmonic waveguides and resonators
- plasmonic nanocircuits; logical nanoscale elements
- plasmonic ultramicroscopies and nanoscopic spectroscopies
- plasmonics-assisted memory
- plasmonic transistors
- plasmonic nanolasers and spasers
- nanoplasmonic antennas and their applications in nanoscopes, photodetectors, solar cells, and lighting devices
- prospective graphene nanoplasmonic devices
- sensing based on Fano resonances
- modulators and switches based on active plasmonics
- low-frequency plasmons and their applications
- · solar energy harvesting
- devices for telecommunications
- environmental applications
- medical and health applications
- photovoltaic applications and efficient light harvesting.



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Important dates

Abstracts due	7 February 2024
Registration opens	April 2024
Authors notified and program posts online	29 April 2024
Submission system opens for manuscripts and poster PDFs*	17 June 2024
Poster PDFs due for spie.org preview and publication	24 July 2024
Manuscripts due	31 July 2024
Advance upload deadline for oral presentation slides**	16 August 2024

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What you will need to submit

- Title
- Author(s) information
- Speaker biography (1000-character max including spaces)
- Abstract for technical review (200-300 words; text only)
- Summary of abstract for display in the program (50-150 words; text only)
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers for additional requirements (i.e. extended abstract PDF upload for review or instructions for award competitions)

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

How to submit your abstract

- Visit the conference page: www.spie.org/op103call
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- · Obtain funding for registration fees, travel, and accommodations
- · Attend the meeting
- · Present at the scheduled time

Review and program placement

- To ensure a high-quality conference, all submissions will be assessed by the conference chair/editor for technical merit and suitability of content
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