Special Issue

Polaritons Nanophotonics: Physics, Materials and Applications

Message from the Guest Editors

Over the past decade, polaritonics has emerged as a transformative field, bridging the gap between fundamental physics and advanced photonic technologies by enabling unprecedented control over light–matter interactions at the nanoscale. By leveraging the coupling between photons and collective excitations—such as phonons, excitons, and plasmons—polaritonic systems transcend the limitations of conventional photonic materials, offering unique optical properties like extreme light confinement, enhanced nonlinearities, and tunable dispersion relations. With this Special Issue, we aim to highlight the latest breakthroughs in polaritonics, with a focus on the design, fabrication, characterization, and application of polaritonic systems in both traditional and emerging materials. We invite contributions that explore the fundamental physics underlying polaritonic phenomena, as well as their practical implementations in cutting-edge devices.

We look forward to receiving your contributions, which will help advance the field of polaritonics and drive its transition from fundamental research to real-world applications.

Guest Editors

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You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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