



Plasmonic Nanoresonators

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Message from the Guest Editor

Design and application of plasmonic nanoresonators is an inspiring, beautiful, and rapidly developing research area. All phenomena of photonic resonators have been rediscovered, and analogous theoretical approaches have been developed, thus initializing novel classes of applications. The uniqueness of nanoresonators is that the large local electromagnetic-field enhancement is accompanied by a small mode volume, which allows improving fluorescence due to the Purcell effect and realizing permanent modification of materials in nanolithography. Non-classical light-matter interaction phenomena including strong coupling and collective emission as well as lasing have unique characteristics originating from the involved plasmonic modes. Thus, it becomes possible to realize all-optical signal processing, to catch and monitor individual as well as interacting molecules in intracavity sensing, and to localize them by overcoming the diffraction limit in imaging. Moreover, light-matter interaction phenomena can be completely controlled in space and time simultaneously in predesigned nanoresonators.





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Message from the Editor-in-Chief

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