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Plasmon-Enhanced Photon Emission in Nanostructures

Guest Editor:

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Message from the Guest Editor

Since the existence of surface plasmons was first predicted in 1957, extensive studies have been conducted in both theoretical and experimental sides, showing that plasmons are not only exotic phenomena but also a powerful tool for flexibly manipulating light–matter interaction and thus tailoring photon emission properties. With the development of nanofabrication technology, a variety of nanostructures can be precisely fabricated, such as nanoantennas, metasurfaces, and waveguides, which provides new possibilities for making full use of plasmons to enhance photon emission for applications ranging from information process to energy harvesting.

This Special Issue invites manuscripts that introduce the recent advances in plasmon-enhanced photon emission in nanostructures. All theoretical, numerical, and experimental papers and review papers are welcome. Topics include, but are not limited to, the following:

- Large Purcell enhancement of nanoantennas and nanocavities;
- Plasmonic metasurfaces for wavefront control of classical and non-classical light;
- Broadband/perfect thermal absorber/emitters;
- Photovoltaics, infrared stealth/cloaking, and radiative cooling, etc;
- Plasmon-enhanced optical sensing/detecting;
- Plasmonics in 2D materials;
- Nanostructures for generation/enhancement of quantum photon emission;
- Near field nano optics and near field thermal radiation of nanostructures;
- Surface plasmon polaritons (SPPs) coupling and propagation in nanostructures, e.g., gratings, waveguides, grooves, etc.;
- Surface-enhanced Raman scattering with nanostructures;
- Plasmonic nanoparticles: fundamentals and applications.