

Plasmon-based nanophotonics: Challenges and perspectives

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Abstract

The field of plasmonics deals with diverse effects and phenomena brought about by electromagnetic excitations, in which free electron oscillations in metals are coupled to electromagnetic fields in dielectrics, - surface plasmons (SPs). There exist various metal-dielectric configurations supporting SP modes that can be strongly confined, down to nm-sized cross sections, without cutoff.

Starting with introducing the very basic concepts of plasmon-based nanophotonics and associated grand expectations, I'll discuss the current challenges and realistic perspectives with the emphasis on nanophotonic components and quantum plasmonics, mentioning also a few potentially rich developments in gradient metasurfaces and thermophotovoltaics.

All staff and students are invited to attend this Zepler Institute Invited Speaker Lecture. The lecture will be followed by opportunities for questions. Refreshments will be available.

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Biography

Sergey I. Bozhevolnyi received his M.Sc. and Ph.D. degrees from the Moscow Institute of Physics and Technology in 1978 and 1981, respectively, and a Dr.Scient. degree from Århus University, Denmark, in 1998. Since 2003, he has been a Professor at the University of Southern Denmark (formerly Aalborg University), where he now leads the SDU Nano Optics Centre. During 2001–2004, he was also the Chief Technical Officer (CTO) of Micro Managed Photons A/S, a company set up to commercialise plasmonic waveguides. His current research interests are within linear and nonlinear nano-optics and photonics, being centered at plasmonics, including nanophotonic components, metasurfaces, thermophotovoltaics and quantum plasmonics. He is a Fellow of the OSA.

Friday 25 November 2016, 14:00 - 15:00. ORC Boardroom