Graphene Nanophotonics and Optoelectronic Applications

Xiao, Sanshui

Publication date: 2018

Document Version
Publisher's PDF, also known as Version of record

Link back to DTU Orbit

Citation (APA):
Graphene Nanophotonics and Optoelectronic Applications

Sanshui Xiao (Invited)*

1DTU Fotonik, Department of Photonics Engineering, Center for Nanostructured Graphene, Technical University of Denmark, Kgs. Lyngby, Denmark.
*E-mail: sxi@fotonik.dtu.dk

Abstract

With unique possibilities for controlling light in nanoscale devices, graphene has opened new perspectives to the nanophotonics community with potential applications in metamaterials, modulators, photodetectors, and sensors. Following a brief introduction of graphene, I will first present some fundamental work of graphene nanophotonics, e.g., excitation of graphene plasmon polaritons [1], pushing graphene plasmons to low wavelengths [2], investigating of graphene plasmon-phonon interactions [3], and light-matter interactions in graphene-metal hybrid structures [4]. Then I will review our recent activities on novel integrated graphene-based optoelectronic devices including graphene based silicon ring-resonator modulators [5], graphene plasmonic waveguide modulators [6], and high-energy-efficiency graphene microheats [7].

Reference