
Organic Nanophotonics

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Abstract

Nanophotonics deals with the generation, modulation, guiding and detection of photons in a confined system at the nanoscale. Utilizing organic functional molecules as the building blocks of nanophotonic materials and components has great potential due to the multiple advantages, including the molecular design ability and tailorable properties. In this talk, the main focus is on organic crystalline nanowires, detailing the mechanism that led to their growth and exemplifies the linear as well as non-linear photonic properties. The development of destruction-free transfer enables fast and large-scale integration of highly oriented organic nanowires into semiconductor, metallic electronic or photonic platforms. Finally, future potential of organic nanowires is highlighted by presenting hybrid photonic/plasmonic platforms as passive and active nanoplasmonic elements.

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