Nanophotonics Over Macroscopic Scales and its Associated Fabrication Challenges

Marin Soljačić, MIT (USA)

Abstract

In nanophotonics, we create material-systems which are structured at length-scales smaller than the wavelength of light. When light propagates inside such effective materials, numerous novel and exciting phenomena can emerge, enabling a variety of novel applications. However, in order to make use of these opportunities for many real-world applications of interest, one has to have the ability to implement nanophotonic structures over large scales. Printing techniques are often useful for implementation of such structures, especially when the wavelength of interest is sufficiently long. In this talk, I will present some of our recent theoretical and experimental progress in exploring these opportunities, as well as novel physics phenomena that emerges in this process.