Metamaterial-Based Nanophotonics

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In this talk, I discuss our recent progress in nanophotonic technologies based on metamaterials and metasurfaces, with a particular emphasis on the opportunities that material science and hybrid material platforms can provide to enhance light-matter interactions and nanoscale light control. In particular, I will discuss how various metasurface devices enabling near-field and far-field optical manipulation, and the impact that these technologies may provide with opportunities from basic science to photonic applications, from classical waves to quantum phenomena.

Andrea Alù is the Founding Director of the Photonics Initiative at the CUNY Advanced Science Research Center and the Einstein Professor of Physics at the CUNY Graduate Center. He received his Laurea (2001) and PhD (2007) from the University of Roma Tre, Italy, and, after a postdoc at the University of Pennsylvania, he joined the faculty of the University of Texas at Austin in 2009, where he was the Temple Foundation Endowed Professor until 2018. Dr. Alù is a Fellow of NAI, IEEE, AAAS, OSA, SPIE, MRS and APS, and has received several scientific awards, including the Blavatnik National Award in Physical Sciences and Engineering, the Dan Maydan Prize in Nanoscience, the AAAFM Heeger Award, the IEEE Kiyo Tomiyasu Award, the Vannevar Bush Faculty Fellowship, the ICO Prize in Optics, the NSF Alan T. Waterman award, the OSA Adolph Lomb Medal, and the URSI Issac Koga Gold Medal.