ZEPLER INSTITUTE

UNIVERSITY OF Southampton

Recent advances in metamaterials and metasurfaces from Down Under

The Zepler Institute presents

Professor Yuri Kivshar

Nonlinear Physics Center, Australian National University, Canberra, Australia

Abstract

Rapid progress in the fields of plasmonics and metamaterials is driven by their ability to enhance near-field effects with subwavelength localisation of light, and a majority of such effects is usually associated with electric and magnetic response of nanoscale structures such as "meta-atoms". This talk will summarise research from our group in Canberra on electromagnetic metamaterials and metasurfaces with different functionalities including hyperbolic dispersion and all-dielectric nanophotonics. In particular, we will review the emerging field of nanophotonics aiming at the manipulation of strong optically-induced electric and magnetic Mietype resonances in dielectric nanostructures with high refractive index. Unique advantages of dielectric resonant nanostructures over their metallic counterparts are low dissipative losses and strong enhancement of magnetic field as well as a new physics and entirely novel functionalities associated with simple geometries not much explored in plasmonics especially in the non-linear regime.

All staff and students are invited to attend.

www.zeplerinstitute.com/events

Professor Yuri S. Kivshar

Yuri S. Kivshar received PhD in 1984 in the Ukraine. After working at several research centers in USA and Europe, he moved to Australia in 1993 where he established Nonlinear Physics Center. Kivshar's research interests include nonlinear optics, metamaterials, and more recently nanophotonics. He is Fellow of the Australian Academy of Science, OSA, APS, and IOP. He received many awards including the Pnevmatikos Prize in Nonlinear Science (Greece), Lyle Med-al (Australia), State Prize in Science and Technology (Ukraine), and Harrie Massey Medal (UK).

Friday 20 May 2016, 13:30 - 14:30

B46 4050 (ORC Boardroom), Highfield Campus