THE SCIENCE PROGRAM PRESENTS

Plasmonic Crystals
Dr. Slobodan Vukovic, Principal Research Fellow/Professor of Physics, Institute of Physics, University of Belgrade, Serbia

Thursday, February 18, 2010
12:00 noon–1:00 p.m. followed by lunch
TAMUQ – LH 144 / 1st Floor

Recent development and a rapid expansion of nanophotonics has been particularly based on subwavelenth confinement and manipulation of light along multilayered metal-dielectric interfaces. This branch of nanophotonics is called plasmonics due to electromagnetic modes that play a crucial role in the research, and are termed surface plasmon-polaritons. These can be guided by metallic nanostructures beyond the diffraction limit. Such unique capability can be utilized for the design of highly integrated photonic signal-processing systems, nanoresolution optical imaging techniques and sensors. In this talk, the basic principles and major achievements of plasmon guiding will be presented. A special emphasis will be given to planar metal-dielectric superlattices that, in the subwavelength regime, reveal optical behavior of a uniaxial crystal, and thus are called plasmonic crystals.

Dr. Slobodan Vukovic is Principal Research Fellow/Professor of Physics at the Institute of Physics/Faculty of Physics, University of Belgrade, Serbia. He received his Ph.D. in 1974 from the University of Belgrade. During the 1970’s he spent some time working at P. N. Lebedev Physical Institute, Moscow, and in the 1980’s at the Australian National University, Canberra. He is an author of more than 50 articles, and a reviewer in renowned scientific journals, as well as the editor of the book Surface Waves in Plasmas and Solids, World Scientific, 1986. His research interests are in nanophotonics, nanoplasmonics, surface and nonlinear effects in plasma physics, and laser interaction with matter.
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