DOTTORATO DI RICERCA
UNIVERSITÀ DI PISA

DIPARTIMENTO DI FISICA "ENRICO FERMI"

CORSO DI DOTTORATO IN FISICA
AVVISO DI SEMINARIO

Martedi 4 Giugno 2013
ore 15:30

Aula 230 - I piano - Ed. C

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"Glass photonic structures at nanoscale"

Abstract: The scientific and technological activity involving the study and the development of materials at nanoscale and related converging technologies allow great progress in the conception, design and realization of systems and devices with improved performance. Fabrication of such structures, where light can be confined over nano or micro scale region is fantastic challenge for nano-science based technologies. This field asks for interdisciplinary research aiming at understanding phenomena, mastering processes and developing advanced diagnostic techniques to manipulate and probe the properties of matter at the nanoscale, thus providing tremendous opportunities for the creation of novel materials and functionalities.
In this lecture some glass photonic systems, which combine light confinement and nanocomposite structure, mainly fabricated by sol-gel and rf-sputtering techniques, are presented, and in particular: (i) rare-earth activated glass ceramic waveguides; (ii) nano-micro spheres; (iii) opal photonic crystals; (iii) 1-D microcavities; (iv) spherical microresonators. Fabrication protocols, spectroscopic, optical and structural assessment, and applications including down-converters, strain sensing, bio-sensing, integrated optics, will be presented

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