



School of Nano Science



IPM Condensed Matter &
Statistical Physics Group

Weekly Seminar

Super-resolved 3D imaging

Invited Speaker:

Dr. Ali-Reza Moradi

Optics Research Center, Institute for Advanced Studies in Basic Sciences , Zanjan, Iran

Abstract:

Most of biology specimens, in particular living cells, are transparent and differ only slightly from their surroundings in terms of the amplitude of the light wave. 3D imaging methods, including digital holographic microscopy (DHM) and integral imaging (II), provide non-invasive quantitative phase contrast imaging and are suitable techniques for such samples. As for other imaging techniques the enhancing of the resolution of these methods are of high interest. In this talk, we report the results of our recent approaches toward improving the resolution in 3D imaging: Microsphere-assisted super-resolved DHM and Structured illumination DHM. Some of the applications of the methods for quantitative visualization of 3D structures will be also presented. The potential of the methods to serve as a table-top device and its integrability with other methods such as optical trapping and fluorescent microscopy will be presented and discussed.

Wednesday, 1 Azar 1396 (November . 22, 2017), 14:00-15:00

Seminar Room (classroom A), Farmanieh Building, IPM