



פרופסור פאבל בלוב

דיקאן, הפקולטה לפיזיקה והנדסה,
ראש המחלקה לננופוטוניקה ומטא-חומרים,
האוניברסיטה לטכנולוגיות מידע, מכניקה ואופטיקה,
סנט פטרסבורג, רוסיה

Professor Pavel Belov

Dean, Physics and Engineering Faculty,
Head, Nanophotonics & Metamaterials Department,
University of Information Technologies, Mechanics and Optics (ITMO),
St. Petersburg, Russia

הרצאה | Lecture

RECENT PROGRESS IN ALL-DIELECTRIC AND HYBRID OPTICAL ANTENNAE AND METASURFACES

Abstract

We suggest and verify experimentally a novel type of optical nanoantennas made of high-permittivity low-loss dielectric spheres. In addition to the electric resonances, they exhibit very strong magnetic resonances at the nanoscale. By placing a point-like dipole source near a single dielectric particle driven at the magnetic resonance results the radiation pattern similar to that of a Huygens source with the enhanced forward and vanishing backward emission. We also introduce a novel concept of superdirective nanoantennas based on the generation of higher order optically-induced magnetic multipoles. We present our recent results on femtosecond laser-assisted reconfiguration of all-dielectric and hybrid nanoantennae and metasurfaces. In particular, we propose a novel concept for ultrafast manipulation by scattering properties of an individual silicon nanoantenna with a magnetic dipole resonance by means of generation of electron-hole plasma.

The Lecture will be held on Thursday,
12 April 2018, at 15:00,
Room 011, Classroom Building, Faculty of Engineering,
Tel-Aviv University, Ramat-Aviv

ההרצאה תתקיים ביום חמישי,
12 באפריל 2018, בשעה 15:00,
בחדר 011, בניין כיתות חשמל,
אוניברסיטת תל-אביב, רמת-אביב

כיבוד קל יוגש לפני ההרצאה | Light refreshments will be served before the lecture