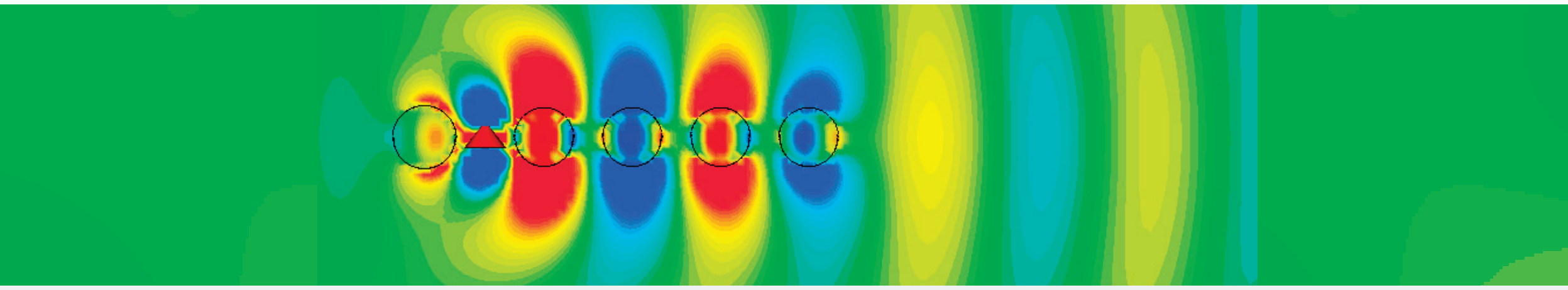
Mortimer and Raymond Sackler Institute of Advanced Studies

המכון ללימודים מתקדמים
ע"ש מורטימר וריימונד סאקלר

אוניברסיטת תל אביב
TEL AVIV UNIVERSITY



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

Lecture | הרצאה

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

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