



Solid State Institute  
המכון למצב מוצק

TECHNION  
Israel Institute  
of Technology



הטכניון  
מכון טכנולוגי  
לישראל

**SPECIAL SEMINAR**

**סמינר מיוחד**

## **"Generation of circularly polarized high-order harmonics: dynamical symmetries and conservation laws."**

*Ofer Kfir*

*Physics Department and Solid State Institute,  
Technion*

### Abstract

Generation of high harmonics of visible/IR light fields had led to numerous scientific and technological advancements since its discovery 25 years ago, including attosecond spectroscopy of atoms, molecules and condensed matter and tabletop high-resolution imaging of nanostructures. However, interaction with chiral degrees of freedom (magnetism, molecular chirality, etc.) was limited because the polarization of bright high harmonics was restricted to the linear (non-chiral) regime.

I will present the first demonstrations of circularly polarized high harmonics and important emerging developments. The role of spatiotemporal dynamical symmetries and conservation laws for energy, linear and angular momenta of the photons participating in the process will be discussed. Finally, I will discuss our progress towards probing magnetization with nanometric spatial resolution and femtosecond temporal accuracy as well as generation of helically polarized attosecond pulses.

**ההרצאה תתקיים ביום חמישי, ה-21.4.16 בשעה 12:30**

**בבניין המכון למצב מוצק, בחדר הסמינרים.**

**The lecture will take place on Thursday, 21.4.16 at 12:30**

**at the seminar room of the Solid State Institute.**

**Ph.D. Student of Associate Professor Oren Cohen**