



Solid State Institute
המכון למצב מוצק

TECHNION
Israel Institute
of Technology



הטכניון
מכון טכנולוגי
לישראל

SPECIAL SEMINAR

סמינר מיוחד

Probing of plasmonic fields in space and time using slow-electron holography

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Abstract

Low-energy electron holography (LEEH) is a technique at which coherent beams of electrons of low energy ($< 500\text{eV}$) are being produced by a point-like source, and irradiate a nearby sample. A holographic point-projection image of the sample with a magnification of up to 10^6 is formed, which can be recorded on a distant screen. Low-energy electrons are more sensitive to plasmonic fields than ones of high energy, such as in transmission-electron-microscopy. Here we developed a simulation in order to investigate the time and space behavior of emitted electron pulses from the moment they were emitted until reaching the screen and forming a holographic image after going through an interaction with a plasmonic nanostructure. We will also report on the progress in the experimental realization of our LEEH microscope. We believe this study will not only have the potential to reveal new effects in plasmonics, but also to enable us to manipulate electron wavepackets in space and in time using plasmonic fields.

ההרצאה תתקיים **ביום שני, ה-08.08.2021 בשעה 12:30**

באודיטוריום המכון למצב מוצק, קומת כניסה

The lecture will take place on **Monday, 08.08.2021** at 12:30
at the Solid State Institute auditorium, entrance floor

M.Sc. Student of Assistant Professor Michael Krueger