

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ב' 15.04.2019
(י' בניסן, תשע"ט), בניין דן קאהן, אודיטוריום 1, 14:30.

מרצה: דריה נגרי

מנחה: פרופ' ח כרמל רוטשילד

על הנושא:

Generating an Ideal light source

The seminar will be given in English

תקציר ההרצאה:

High radiance and uniform light source can be useful in any optical system. In imaging for example, the lack of uniformity damages the resolution of a system. Also, for excitation systems, such as in lithography, the uniformity of the light source limits the resolution and the control over the process. However, thermodynamics sets a trade-off between high radiance and uniformity, which is why laser illumination benefits high radiance, but suffers from poor uniformity due to speckles.

In this talk I'll review a novel design for an ideal light source enabling high radiance, with minimal reduction in uniformity. We demonstrate, by simulation, spatial decoherence of light propagation through a random (pre-defined) scattering medium, benefiting the evolution of the standard deviation in the optical path, exceeding the temporal coherence of the source. Using this method, we can tailor an inner scattering fiber where the output coherence is a free parameter of the source and the fiber. We discuss the advantages of our static method over the common dynamic techniques, that are limited by a long exposure time.

בברכה,

ד"ר דניאל אורי
מרכז הסמינריון