



Russell Berrie Nanotechnology Institute
Technion - Israel Institute of Technology



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▶ "Biological Lasers and Fractal, Multi-Beam
Lasing From Hybrid Optical Resonators"

Wednesday,
25 April, 2018

14:15 refreshments

14:30 lecture

Solid State Auditorium

RBNI
Monthly
Seminar
Series
2018



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ABSTRACT

Recent advances in the realization of biological lasers, and the development of hybrid optical resonators for speckle-free imaging, will be described. Visible lasers in R-phycoerythrin (RPE), flavin mononucleotide, and a fluorescent protein have been demonstrated and characterized. A novel optical resonator has also enabled the first observation of fractal laser modes. Four basic transverse fractal modes have been observed, one of which closely resembles the Sierpinski Triangle which is an exact fractal. By pixelating the plane transverse to the optical axis with an array of microrefractive elements, this resonator generates hundreds to thousands of microlaser beams and is ideally-suited for speckle-free imaging. Images and video of unicellular, motile cells, recorded with this new imaging modality, will be presented