Grand Technion Energy Program
תוכנית האנרגיה ע"ש גרנד

excitonics Lab

Technion Israel Institute of Technology

תכנית האנרגיה ע"ש גרנד מתכבדת להזמינך להרצאה סמינריונית שתינתן ע"י:

נמרוד קריגר

בנושא:

"Changing the Color of the Sun"

Abstract

Solar energy, in all its forms, is essentially the cleanest and most renewable source in our disposal. Sunlight is inexhaustible as the source of energy in photovoltaic cells or bio-diesel crop, but with low flux density. Solving the global energy challenge requires us to think of solutions and optimize the energy conversion efficiency in these sources. No single energy conversion system can efficiently convert a broadband source such as solar radiation. Here we present two projects aiming to tackle this problem. By using a combination of fluorescent materials and energy transfer between them we alter the incoming solar spectrum, better fitting the system in question.

Research on algae, grown under sunlight and CO2 supply, show potential applications for bio-diesel production. We propose increasing algae energy absorption, by light manipulation, increasing growth rates and reducing production costs. I will present our progress on this front together with a second project aimed to increase photovoltaic efficiency by photon-splitting. Any photon with energy twice that of the PV's band-gap can potentially contribute double the current; I will present current research and our contribution.

מנחה : פרופ' כרמל רוטשילד, הפקולטה להנדסת מכונות

במסגרת עבודת מחקר לתואר מגיסטר

ההרצאה תתקיים ביום ה' 29.05.2014 בשעה 11:00 אולם 235, בניין הפקולטה להנדסת אווירונאוטיקה וחלל

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