

# Nanotechnology Seminar Series

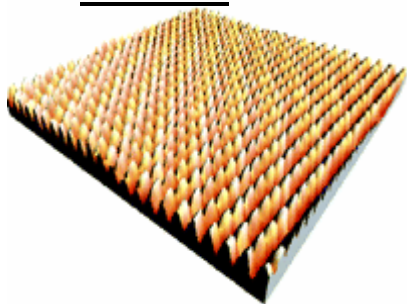
The Nanotechnology Seminar Series is intended to bring together faculty members, students, and guests for exchanging ideas and research experience in the multidisciplinary field of nanotechnology.

**Topic:** “Dye-sensitized solar cells” - student presentation  
by Ray Sturdevant; supervisor Dr. M. Tzolov

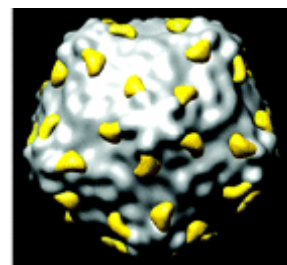
**Abstract:** The presentation will start with an overview of the organic solar cells with special emphasis on the specific features making them attractive for practical applications. A more in depth discussion of the dye sensitized solar cell is in order including their principle schematics and operational mechanisms. This presentation will include the technological steps we took to manufacture the solar cells at LHUP and the basic parameters of the operational solar cells derived from the current-voltage characteristics in dark and under illumination. Additional characterization was done using impedance spectroscopy, along with infrared spectroscopy of the titania nanoparticles. All of the characteristics of the cells were obtained in both darkness and white light conditions allowing for a clear observation of the operation of the cells. The results from our attempt to improve the technology will be shown and additional areas having the potential for further improvement will be outlined. Lastly, some ideas for future work will be discussed aiming to increase the efficiency of the ordered organic-inorganic 3-dimensional bulk heterojunction.

**When:** Dec. 12<sup>th</sup>, 12-12.50 p.m. with 25 min. for presentation, 15 min. for questions, and 10 min. for discussion of the spring schedule of the seminar and other related topics.

**Place:** Ulmer Hall, room 219



**All faculty members and interested students are kindly invited.**



For questions and comments contact Dr. Marian Tzolov ([mtzolov@lhup.edu](mailto:mtzolov@lhup.edu)).