Zapraszam studentów IN na trzy wykłady o nanotechnologii w ramach " Szkoły NANO MiSMaP ". Do Polski specjalnie na tą okazję przyjedzie z Salonik prof. Stergios Logothetidis (studenci IN poznali go na NN12) z dwoma wykładami oraz dr hab. Piotr Cyganik z Uniwersytetu Jagielońskiego.

22.04 godz. 16-19, sala 4070 (MIM UW, ul. Banacha 2), prof. Stergios Logothetidis
23.04 godz. 16-19, sala 4070 (MIM UW, ul. Banacha 2), prof. Stergios Logothetidis
24.04 godz. 17:15-19:00, sala 17 (Wydział Fizyki, Pasteura 7). "Od memrystora do jednokomórkowca" dr hab. Piotr Cyganik

Prowadzący: prof. Stergios Logothetidis (Aristotle University of Thessaloniki, Physics Department) oraz dr hab. Piotr Cyganik (Uniwersytet Jagielloński)

NanoSciences and Nanotehnologies (N&N): Their Applications in Every Day Life

Prof. Stergios Logothetidis

At the 20th Century, there has been an explosive growth of Science-Technology- Applications & Tools, changing enormously our perception for the World and evolving considerably all aspects of the Everyday life. NanoSciences focus on the research and study of tools, matter and their interactions in the Nanoscale 1 - 100nm. Nanotechnologies involve processes about the design and construction of devices & systems by manipulating matter in the Nanoscale (using Building blocks of molecules), and controlling the functionalities of these devices below~100nm. Nanotechnology imitates nature, such an example is the known Lotus Leaf Effect. There are different approaches involving Top-down and Bottom-up as well as self-assembly in order to organize structures at nanoscale and even to form macrosructures.

N&N are extended to a wide scientific research area where Basic Sciences are converged (Physics, Chemistry, Biology), with other sciences such as Materials Science, Informatics, Pharmaceutical, Medicine & Engineering. The main objective is to introduce New Emerging Technologies, re-structure the knowledge generation & the existing technologies in the fields of Electronics & Informatics, Energy Generation, Health & Quality of Life, Environment & Safety, Transport & Communications, Research Tools, and in Education & Training.

Two of the most interesting from a research point and potential market are the Organic and Printed Electronics and the Nanomedicine field. It is known that the Organic & Printed Electronics Market grew from 3B€ in 2011, to 15B€ by 2015 & could rise to 60B€ by 2022, with key applications in Lighting – Displays, OPVs, Textiles, Labels, Biosensors, Medical devices, Organic Batteries & Fuel Cells, Portable Data Systems & Media, Flexible - Stretchable & Smart Textiles and Integrated Smart Systems. On the other hand, Nanomedicine is a new field created by the convergence of recent advances in Nanotechnology with modern Biology and Medicine focusing on Diagnosing - Treating & Preventing Disease and Traumatic Injury, and Preserving & Improving Human Health, using Molecular tools & Molecular knowledge of the human body. Some Nanomedicine related systems are Drug delivery, implantable devices for regenerative medicine, biosensors, biochips, nanotools for cardiovascular, orthopaedic, cancer and other diseases.