

SEMINARIUM - ON 3

Uprzejmie zawiadamiamy, że w **ŚRODĘ**

8 listopada br., o godz. 10.00

w sali 203 (bud.1) odbędzie się seminarium, na którym

Dr. Travis Wade

Ecole Polytech, CNRS, Palaiseau

wygłosi referat na temat:

„Template synthesis of nanowires”

Streszczenie

I will present an overview of template synthesis as it applies to our nanomaterials research. This bottom-up approach is motivated by our desire to find an alternative to the big, top-down approaches to nanoscience, such as clean-rooms and X-ray lithography. Using universally available templates and materials, and very modest synthesis techniques, we have created a variety of interesting and useful structures. Starting with homogeneous ferromagnetic nanowires, we were able to study and manipulate spin-dependent transport. Next we branched into multilayer GMR and spin-valve structures for spintronics. Carbon nanotube molecules were grown in templates by CVD self assembly. The carbon nanotubes grown using a cobalt catalyzer show spin-valve, ballistic transport, and Coulomb blockade effects. Also, we have started to study templated semiconductor nanorods with the amazing result that their behaviour is very similar to that of the carbon nanotubes and can be reduced to a scaling law. With two contacts a scientist can study many interesting phenomena such as magnetoresistance and electron transport in nanostructures. Two contacts, however, is not enough if one wants to make a device such as a transistor for applications or research. A third contact or electrode is needed. An aspect of our research is the development of templates that allow placement of a third electrode close enough to the nanowires or carbon nanotubes for an electric field effect. At this time we have two possible template structures for field-effect transistors. The template acts as a skeleton for the nanoscale synthesis and macroscale contact of an infinite variety of materials and structures.

Obecność pracowników naukowych Oddziału obowiązkowa, goście mile widziani.

Roman Puźniak

Andrzej Wiśniewski