



LUND
UNIVERSITY



NANOSCIENCE COLLOQUIUM

Thursday May 22nd 2014 at 15:00, K-space, Fysicum

Some basic aspects of III-V nanowire growth

Dr. Jean-Christophe Harmand

Laboratoire de Photonique et de Nanostructures - CNRS, France

Nanowire growth is full of intriguing aspects. I will present a few mechanisms which, we think, are important in determining the growth kinetics, the morphology or the crystal structure of these nano-objects. An efficient method of investigation consists in inserting chemical markers during growth. The ex-situ observation of these markers by transmission electron microscopy provides detailed and precise information. Combining these experimental data with modeling, one can estimate crucial quantities such as surface diffusion lengths, surface energies, concentrations, super-saturation. I will detail more particularly the case of self-catalyzed growth of GaAs nanowires. Then I will focus on the atomic plane stacking in Au-catalyzed InP nanowires presenting pronounced hexagonal/cubic phase mixing. The existence of stacking correlations is revealed by a statistical analysis. The origin of these correlations will be discussed.



Host: Kimberly Dick Thelander (Solid State Physics)

This is one in a regular series of Nanoscience Colloquia, aimed at all researchers and students with an interest in nanoscience. The series is arranged by the Strategic Research Environment "The Nanometer Structure Consortium at Lund University" (nmC@LU) and by the Linnaeus environment "Nanoscience and Quantum Engineering", funded by the Swedish Research Council (VR).



Vetenskapsrådet