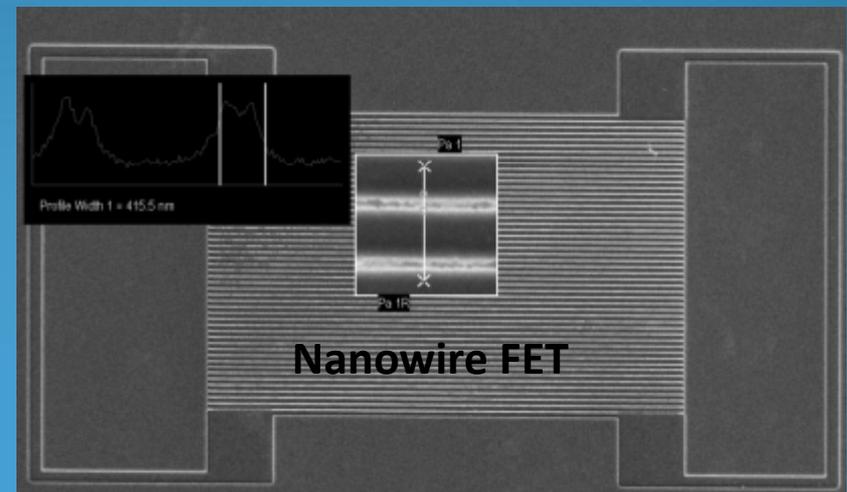


Nano Physics and Materials

Courses

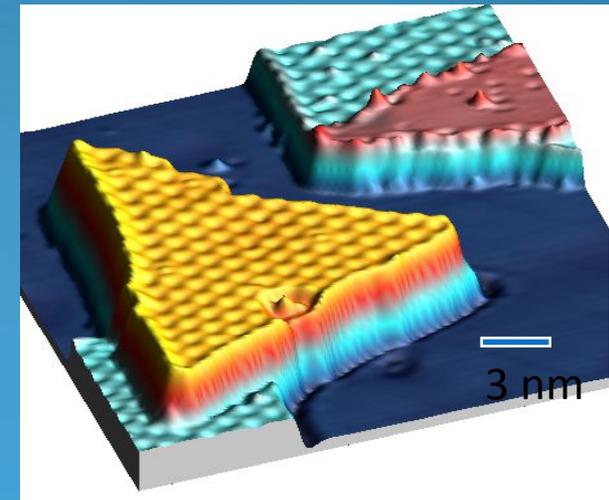
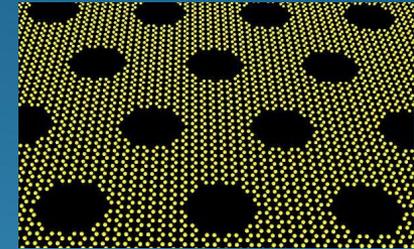
- > Optoelectronics
- > Semiconductor Physics
- > Nano-composites
- > Polymer Chemistry
- > Nano-optics
- > Surface Science
- > Multiscale Modelling and Simulation
- > Nano-electronics



Nano Physics and Materials

Recent projects

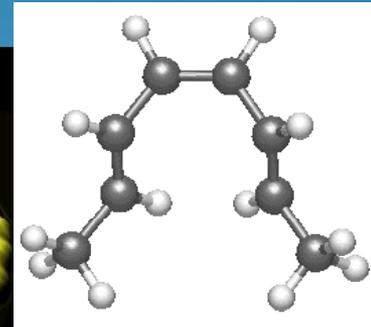
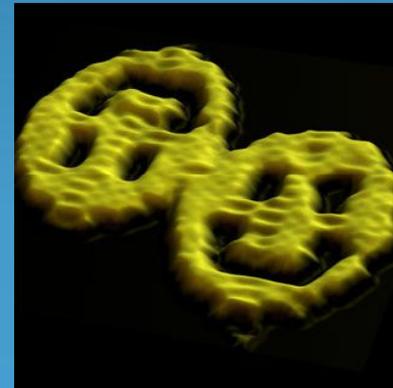
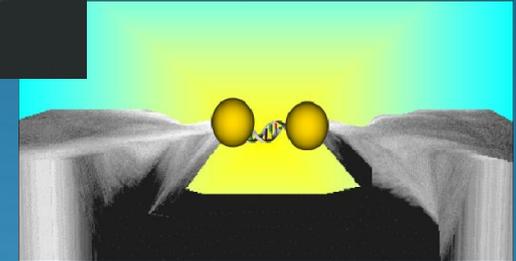
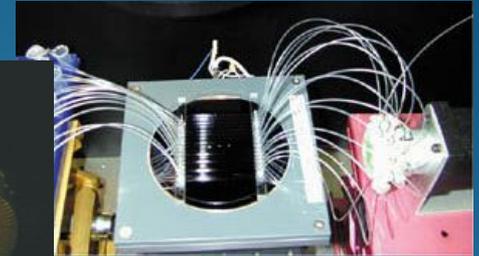
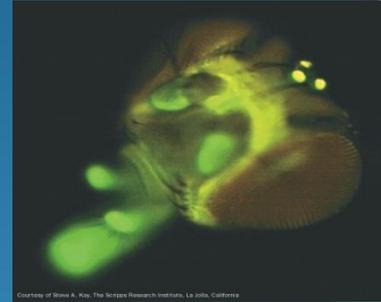
- > Nanostructures in solar cells
- > Nanoengineered Graphene
- > ZnO conducting transparent films
- > Nanowire field effect transistors as sensors
- > Nanostructured surfaces as antireflecting coatings
- > Light emitting semiconductor nanostructures
- > Plasmonic nanostructures



Nanobiotechnology

Courses

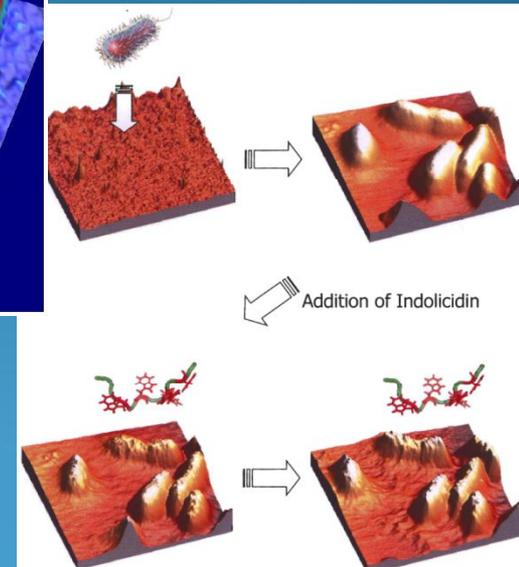
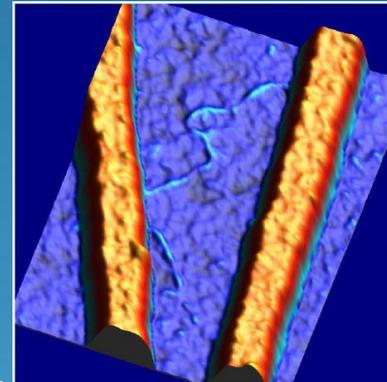
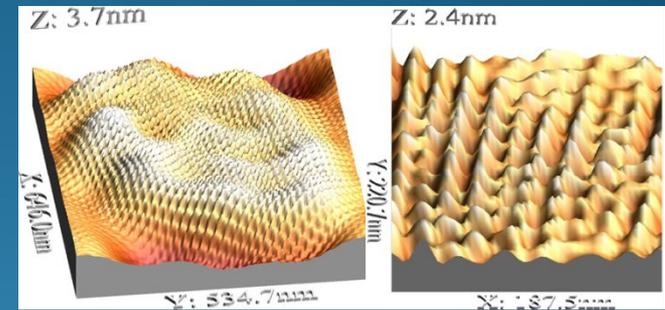
- > Reaction Engineering
- > Advanced Gene Technology (High throughput screening)
- > Molecular Electronics
- > Molecular Modeling
- > Reactions on surfaces
- > Mass Spectroscopy
- > Self Organizing Biostructures (drug delivery systems)
- > NMR Spectroscopy



Nanobiotechnology

Recent Projects

- > Cadmium Biosensor
- > Design and production of new peptide antibiotics and proteins in *E. coli* and yeast
- > Antimicrobial Peptides and their action towards bacteria
- > Electrostatic trapping and alignment of nanoparticles
- > Peptide Surfactant: Production and Characterisation of KA₆
- > S-layer proteins and their use as a biosensor
- > Design of surfaces for tissue engineering
- > Quadruplex DNA for molecular electronics
- > DNA-AMP interaction studies with SPR
- > Construction of DNA-Nanoparticle conjugates for application in molecular electronics and biosensing
- > Development of a novel biosensor for fast cardiac marker detection in blood samples



Nanotechnology

- Network of collaboration partners for projects available:
 - > Within this University:
 - > Structural material group
 - > Biotechnology department
 - > Chemistry department
 - > stem cells laboratory (Health science)
 - > External:
 - > Aalborg hospital
 - > several companies such as Novozymes, Danisco, Radiometer,...
 - > several groups at different danish and european universities
 - > <http://homes.nano.aau.dk/fp/AAU-Nano-education>