



Séminaire régulier

Mardi 11 Octobre 2016 à 11h00
Salle des séminaires Richard Planel, bâtiment D1

Manijeh Razeghi

*Center for Quantum Devices, Department of Electrical Engineering and Computer Science,
Northwestern University, Evanston, IL 60208, USA.*

razeghi@eecs.northwestern.edu

The Wonder of Nanotechnology

Nature offers us a full assortment of atoms, but nanoengineering is required to put them together in an elegant way to realize functional structures not found in nature.

A particular rich playground for nanotechnology is the so-called III-V semiconductors, made of atoms from columns III and V of the periodic table, and constituting compounds with many useful optical and electronic properties in their own right. Guided by highly accurate simulations of the electronic structure, modern semiconductor optoelectronic devices are literally made atom by atom using advanced growth technology such as molecular beam epitaxy and metal organic chemical vapor deposition to combine these materials in ways to give them new properties that neither material has on its own. Modern mastery of materials growth and characterization with the help of such techniques allows high-power and highly efficient functional devices to be made, such as those that convert electrical energy into coherent light or detect light of any wavelength and convert it into an electrical signal.

This talk will present the latest world-class research breakthroughs that have brought quantum engineering to an unprecedented level, creating light detectors and emitters over an extremely wide spectral range from 0.2 to 300 microns.

Contact: Fabrice Raineri Tel : 01 69 63 63 92 Email: seminaires@lpn.cnrs.fr

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