20th International Conference on Advanced Nanotechnology

September 11-12, 2017 Amsterdam, Netherlands

Jean-Luc Pelouard, Nano Res Appl 2017, 3:3 DOI: 10.21767/2471-9838-C1-001

Jean-Luc Pelouard

Université Paris-Saclay, France

Improved SWIR photo-detection in the context of sub-wavelength structuration

he extreme light confinement provided by subwavelength metal-dielectric structures pushes towards revisiting the design rules of the photodetectors. Furthermore, introducing absorbing layers in optical nano-resonators demands a dedicated electromagnetic design. Developing together semiconducting heterostructures and optical nanoantennas opens the way for performance improvements and new functionalities, introducing very promising features such as ultra-thin absorbing layers and device area much smaller than its optical cross-section. High responsivity, high-speed behavior, and carved optical response are among the expected properties of this new generation of photo-detectors. In this talk, I present a GMR InGaAs photo-detector dedicated for

FPA applications as an illustration of this global design. I discuss the cross-linked properties of the optical and semiconductor structures. Experimental results show at λ =1.55 µm an EQE of 75% and a specific detectivity of 1013 cm \sqrt{Hz} .W-1.

Biography

Jean-Luc Pelouard is a French Physicist and Researcher. His achievements include research of feasibility of InP-based heterojunction bipolar transistors and; development of first InAPGaAs/InGaAs heterojunction bipolar transistor.

jean-luc.pelouard@c2n.upsaclay.fr

/ Notes: