

SEMINAIRES DE LA BRANCHE PHYSIQUE



Batiment S - Fort de Palaiseau - 91120 Palaiseau

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Optical and electronic studies of nanoscale colloidal systems.

Philippe Guyot-Sionnest

The University of Chicago,

pgs@uchicago.edu

I will report on some of my activities in nanoscale colloidal materials. With spherical core/shell colloidal semiconductor dots, I will discuss the optical properties and dynamic behavior, associated in particular with Auger multiparticle decay, trion decay, and intraband relaxation contrasting with similar issues for MBE grown quantum dots. Electronic transport in assemblies of the colloidal dots is also demonstrated with a long-term goal of improved mobilities. At present the behavior is mostly similar to disordered semiconductor but there is a novel magneto-transport property, attributed to spin-blockade due to the low density of states. With colloidal metal particles, my interest is primarily on the control of Plasmon frequency, linewidth and local field enhancement that might be achievable and I will describe some results on a rather mono-dispersed sharp bipyramid Au colloidal structure.

Pour tout renseignement : haidar@onera.fr