



SECTION DE PHYSIQUE

COLLOQUE DE PHYSIQUE

24, QUAI ERNEST-ANSERMET, CH-1211 GENÈVE 4

Lundi 4 juin 2018, 12h30

Ecole de Physique, Grand Auditoire

«Upconversion Nanoparticles in Nanobiomedicine»

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Abstract:

The field of upconversion in ion doped system can be traced back to an idea of Bloembergen in 1959 [1]. Bloembergen proposed that IR photons could be detected and counted through sequential absorption (ESA) within the levels of a given ion in a solid. Role of energy transfer in upconversion was recognized by Auzel in 1966 [2]. Medical science has begun to focus their attention on the use of nanomaterials to improve diagnosis and treatment of diseases with the ultimate goal of moving into personalized medicine. The need to develop more efficient drug delivery procedures motivated us to propose novel nano-carrier based on lanthanide upconverting nanoparticles (UCNPs). They offer significant advantages in biological applications, particularly the extension of the system applicability to deep tissue regions of the body, a reduced scattering of the excitation wavelength, reduction of autofluorescence, and decrease in photodamage to the system under study. We will discuss relevant biological applications of these upconverting nanoparticles as a platform for drug delivery, imaging and nanothermometry

Après le colloque, une collation en compagnie du conférencier sera offerte aux participants.

Prof. Dmitry Abanin

Genève, le 17 mai 2018/nc

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