



**UNIMORE** Dipartimento di Scienze Fisiche,  
Informatiche e Matematiche  
UNIVERSITÀ DEGLI STUDI DI  
MODENA E REGGIO EMILIA



## FIM-S3 SEMINAR

# Linear and ultrafast plasmonics with a single nano-object

**Wednesday May 12<sup>th</sup>, 2021 – 16.00**

Online streaming using Google Meet

Link: <https://meet.google.com/yud-upbp-mno>

## Speaker

**Natalia DEL FATTI** – University of Lyon 1 (France)

## Abstract

The large size and environment dependences of the optical response of metal nano-objects have led to considerable interest in the academic and industrial domains. In particular, they have been extensively exploited to design new optical materials or to create nanosensors, opening the fields of nanophotonics and plasmonics.

Because of the very weak optical response of a single nano-object, most investigations have been performed simultaneously probing a large number of particles, only providing mean information. This limitation can be overcome by investigating individual nanoparticles, which requires development of high sensitivity detection schemes.

In this talk, after introducing a far-field optical method to investigate single-particle light scattering and absorption based on spatial modulation spectroscopy, we will discuss plasmonic experiments on single metal nanoparticles, focusing on the impact of the local environment on the optical response. Extension of this method to ultrafast nonlinear spectroscopy will then be introduced, permitting to investigate the optical, acoustic and thermal responses at the nanoscale.

In collaboration with

