

# SEMINAR

## GOLD NANOPARTICLES

*Insights about their electrostatic and plasmonic properties*

MONDAY,  
OCTOBER 16

ROOM 711, USTH BUILDING,  
18 HOANG QUOC VIET, CAU GIAY, HANOI

🕒 14:00-15:30

### Abstract:

The seminar focuses on understanding the work function (WF) of surfaces, a critical factor in electronic properties. While WF is well-defined for flat, pure materials, it becomes complex with rough or modified surfaces, as seen in nanoparticles. Knowing WF is crucial for surface reactivity and electric transport, particularly in photovoltaics. Gold nanoparticles serve as an ideal metallic nano-object for studying WF at the nanoscale. The seminar will showcase experiments employing STM, AFM, and KPFM to explore factors like nanoparticle size, surfactant presence, and surface interactions. Additionally, the plasmonic properties of gold nanoparticles will be discussed, including recent findings on their color and optical characteristics



**Prof. Olivier Pluchery**  
Department of Physics  
Sorbonne University  
Institute of NanoSciences, France

### Speaker's biography:

Olivier Pluchery earned his PhD in laser physics from the University of Paris-Saclay in 2000. He then pursued post-doctoral research at Bell-Labs in New Jersey, USA. In 2002, he became an associate professor at Sorbonne University and was later promoted to full professorship in 2017. His research, based at the Institute of Nanosciences in Paris, centers on the electronic and electrical properties of gold nanoparticles, with a focus on their optical and plasmonic characteristics. Pluchery is known for his comprehensive course on plasmonics, including lab work and a dedicated textbook. He has authored 70 research papers and two books, and founded the Or-nano research network. Pluchery's patent led to the creation of Bichromatics, a start-up producing pigments using plasmonic colors for the luxury market. He also maintains strong ties with various companies and serves on the steering committee of Systematic, a French industrial network in optics and photonics.