Stefano Chiodini

"From UHV to liquids AFM environments. From organic semiconductors to MOFs"

In this INA internal seminar presentation I will report my PhD and PostDoc activities both focusing on Atomic force Microscopy (AFM). First, we will go through an in situ and real-time AFM experiment of an organic semiconductor thin film growth in Ultra High Vacuum (UHV). Then we will see Angstrom-resolved AFM images of a Metal Organic Framework obtained in liquid environment. Details on how to achieve atomic resolution by AFM in liquids will be discussed.

Hector Soria

"On-POM-polymerization of N-carboxyahydrides: novel strategies to hybrid materials with antibacterial properties"

Antimicrobial peptides (AMPs) are promising candidates to overcome the increasing problem of bacterial resistance towards conventional antibiotics. AMPs have been traditionally synthesised by solid phase peptide synthesis however, this procedure is often time-consuming and generates only a few milligrams of final product. In contrast, the polymerization of *N*-carboxyanhydrides offers a simple and scalable route to polypeptides with predicted and narrow molecular weight distributions. Polyoxometalates (POMs) are a class of redox-active inorganic metal-oxide clusters anions with known antimicrobial activity. Thus, the hybridisation of AMPs and POMs may serve as platform to design a new class of hybrid antimicrobial materials with synergistic properties. This short talk will focus on a novel *On-POM polymerisation* strategy as a versatile approach to new types of antimicrobial materials.