



UNIMORE Dipartimento di Scienze Fisiche,
Informatiche e Matematiche

UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA



FIM-S3 SEMINAR

Structure and function tailoring of low-dimensional metal/organic architectures: a molecular-level insight

Wednesday September 28th, 2022 – 15.00

S3 Seminar Room, 3rd floor, Physics building

Speaker

Francesco ALLEGRETTI – Technical University of Munich, Germany

Abstract

Surface-supported low-dimensional architectures combining organic linkers and ligands with suitable metal centers have gained increasing relevance due their functional flexibility, the high degree of structural control, and the potential for a variety of applications, such as single-site catalysis, chemical sensing and low-dimensional magnetism. Surface science studies under controlled conditions offer a rich playground to assess the interplay of structure and functional properties, including the role of substrate-mediated effects, molecular conformation and competing interfacial interactions. In my talk, I will discuss different strategies that can be used to prepare regular arrays of transition metal 'single sites' on model solid surfaces, by exploiting spontaneous molecular organization, metal-directed assembly and on-surface reactions to achieve unprecedented structural control. Moreover, I will present the state-of-the-art methodology that is available for gaining (sub)molecular-level insight into the geometric and electronic properties of the resulting systems, which in turn is required to enable a fundamental understanding of molecular-scale phenomena and the fine-tuning of functional properties. The results presented bode promise for the future engineering of regular bimetallic arrays with atomic precision and the design of low-dimensional systems of ever increasing sophistication

Host: Valentina De Renzi

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