

Seminario

Università degli Studi di Padova
Dipartimento di Scienze Chimiche

Ciclo di Seminari 'Frontiers in Chemistry'

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*Free electrons to molecular
bonds and back –
The electrocatalytic dark side of
solar fuels and solar chemicals*

Lunedì 3 Giugno 2019, ore 11.00
Aula A, Dipartimento di Scienze Chimiche
Via Marzolo 1 - Padova

Abstract:

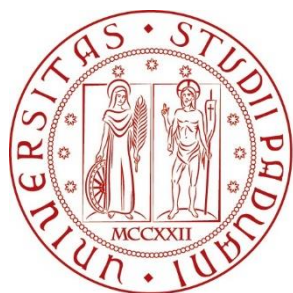
Electrochemistry and electrocatalysis play prominent roles on the dark side of solar fuels and chemicals. They lie at the heart of the interfacial conversion of free electrons into molecular bonds – and back into free electrons. For these electrochemical transformations to occur with the smallest possible energy losses and the utmost atom efficiency, optimized nanostructured multi-component catalyst materials are critical, yet for many desirable multi-electron solar fuel reactions unknown. The successful discovery and development of novel nanostructured electrocatalyst materials requires insight into the relation between their atomic-scale structure and their catalytic performance. Unraveling such relations is thus a scientific priority.

In this talk, I will highlight some advances of our recent work on the electrochemical reduction of CO₂ into value-added fuels and chemicals on conventional and unconventional non-metallic catalysts. I will also touch on novel nanostructured water splitting electrocatalysts for acid and alkaline environments. Focus will be placed throughout on a thorough understanding of structure-activity relations of the new catalytic materials and their liquid-solid interfaces.

La presenza della S. V. sarà molto gradita.

Prof. Michele Maggini

Direttore del Dipartimento
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