

**Seminario**

Università degli Studi di Padova  
Dipartimento di Scienze Chimiche

*Ciclo di Seminari 'Frontiers in Chemistry'*

**Prof. Jean-Michel Saveant**

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*Proton Relays and Local Concentration  
Effects in Molecular Catalysis*

**Giovedì 6 Febbraio 2020, ore 14.30**  
**Aula A, Dipartimento di Scienze Chimiche**  
**Via Marzolo 1 - Padova**

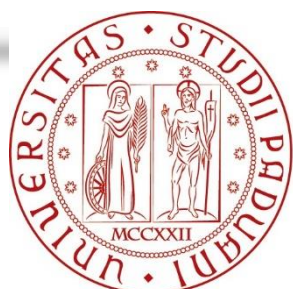
**Abstract:**

*Several examples of remarkably bidirectional or even reversible catalysis with small overpotentials have been recently described in the case of the electrochemical H<sub>2</sub> oxidation and production. This is the occasion to show that such challenging achievements are made possible by local concentration effects allowed by the installation of fast proton relays inside the catalyst molecule close to its metal center. A satisfactory kinetic model consists of two fast proton-coupled electron transfer square schemes linked together by means of two slower reactions involving changes in the metal coordination sphere. This leads to an equivalent description of the problem by means of a much more compact reaction scheme after definition of the connections with the parameters of electron and proton reactivity of the actual catalytic system. The treatment provides expressions for the catalytic cyclic voltammetric responses revealing the factors that govern the local concentration effects and the transition between bi-directionality and reversibility.*

La presenza della S. V. sarà molto gradita.

**Prof. Christian Durante**  
Dipartimento di  
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**Prof. Michele Maggini**  
Direttore del Dipartimento  
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