



Giovedì 20 Giugno 2019, ore 11.30

Aula D

il prof. Nicolas Alonso-Vante

Visiting Scientist al DiSC dal 23 maggio al 27 giugno 2019*

**IC2MP UMR-CNRS 7285, Université de Poitiers,
4 rue Michel Brunet, F-86022 Poitiers Cedex, France**

terrà il seminario dal titolo:

***A paradigm for the electrocatalytic center through the support
interaction***

La presenza della S. V. sarà molto gradita

**** Il prof. Alonso-Vante sarà a disposizione per colloqui con i ricercatori del DiSC. Gli interessati sono pregati di contattare il prof. Granozzi.***

Abstract

In electrocatalysis, the phenomenon of hybridization is present not only on oxide supports [1-5], but also on sp^2 domains of carbon (Graphite type) [6-8]. In this talk, the effects of the so-called strong metal support interaction (SMSI) generated from the different nature of the support with the catalytic centers will be discussed. These results should provide new avenues for improving the stability of catalytic nanoparticles by engineering surface chemistry for the electrochemical energy conversion.

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2. Tauster SJ, Fung SC, Garten RL (1978) Strong metal-support interactions. Group 8 noble metals supported on TiO_2 . *J Am Chem Soc* 100 (1):170-175
3. Horsley J (1979) A molecular orbital study of strong metal-support interaction between platinum and titanium dioxide. *J Am Chem Soc* 101 (11):2870-2874
4. Timperman L, Feng YJ, Vogel W, Alonso-Vante N (2010) Substrate effect on oxygen reduction electrocatalysis. *Electrochim Acta* 55 (26):7558-7563
5. Lewera A, Timperman L, Roguska A, Alonso-Vante N (2011) Metal-Support Interactions between Nanosized Pt and Metal Oxides (WO_3 and TiO_2) Studied Using X-ray Photoelectron Spectroscopy. *J Phys Chem C* 115 (41):20153-20159.
6. Ma J, Habrioux A, Luo Y, Ramos-Sanchez G, Calvillo L, Granozzi G, Balbuena PB, Alonso-Vante N (2015) Electronic interaction between platinum nanoparticles and nitrogen-doped reduced graphene oxide: effect on the oxygen reduction reaction. *Journal of Materials Chemistry A* 3 (22):11891-11904.
7. Sreekuttan MU, Campos-Roldan CA, Mora-Hernandez JM, Luo Y, Estudillo-Wong LA, Alonso-Vante N (2015) The Effect of Carbon-Based Substrates onto Non-Precious and Precious Electrocatalytic Centers. *ECS Trans* 69 (17):35-42.
8. Campos-Roldán CA, Ramos-Sánchez G, Gonzalez-Huerta RG, Vargas García JR, Balbuena PB, Alonso-Vante N (2016) Influence of sp^3 - sp^2 Carbon Nanodomains on Metal/Support Interaction, Catalyst Durability, and Catalytic Activity for the Oxygen Reduction Reaction. *ACS Applied Materials & Interfaces* 8:23260-23269.

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Prof. Gaetano Granozzi

***Il Direttore del Dipartimento
Prof. Michele Maggini***