



UNIVERSITY
OF TRENTO - Italy
Department of Physics

Prof. Paolo Fornasiero

*Department of Chemical and Pharmaceutical Sciences, INSTM and ICCOM-CNR,
University of Trieste*

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Polo Ferrari 1 – Room n. A106

Nanocatalysts for more sustainable chemical processes: opportunities and challenges

Abstract:

Heterogeneous transition metal catalysts are generally based on nanoparticles, that nowadays can be synthesized with uniform size and shape. The extraordinary advances in material science support a new vision for nanoscale-inspired design and synthesis of industrially important catalysts. This precise structural and morphological control, coupled with the possibility to modulate the metal-support interactions, allowed us to have a step change increase in the activity, selectivity and stability of many industrially and environmentally important catalysts. [1-5] Furthermore, single atom catalysts [6] and metal-free [7-9] based materials are becoming an essential strategy in sustainable catalysis. In this context, green organic synthesis, renewable energy conversion, pollution prevention and control are the real challenge of the 21st century and the focus of the present talk.

Contacts:

Department of Physics
Via Sommarive, 14
38123 Povo, Trento
df.supportstaff@unitn.it

Scientific Coordinator:

Albino Perego