# NANOSTRUCTURED CATALYSTS FOR CO_2 REDUCTION

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The global issues caused by the increasing CO_2 concentration in the atmosphere and the need to exploit alternative energy sources, have pushed the research towards the optimization of nanostructured materials with tailored physical, chemical or chemical/physical properties. In particular, photo-electro catalysts have been proposed to exploit the CO_2 as raw material to obtain added-value products. In this framework, an overview of the most promising materials presented in literature for the CO_2 reduction are given, together with an overview of 2D and 3D catalysts prepared within the Center for Sustainable Future Technology of the Italian Institute of Technology. In particular, Sn and Cu oxides-based electrocatalysts are proposed, together with other transition metal oxide-based catalysts. The results regarding the use of dendrimers solutions as electrolytes containing CO_2, as well as *ab-initio* simulation activity for the understanding of the active catalytic sites in 2D electrocatalysts, are also presented.
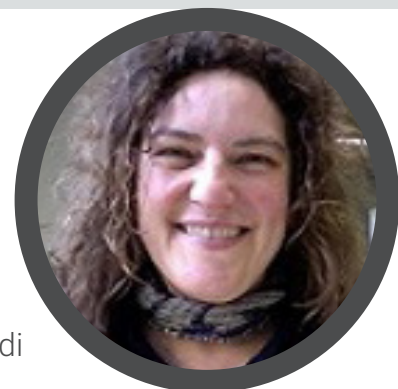
Biography

Angelica Chiodoni has completed her MSc in Material Science from Università degli studi di Torino in 2001 and PhD in Physics in 2005 from Politecnico di Torino. - Currently, she is serving as the Coordinator of the electron microscopy facilities and laboratories of Centre for Sustainable Future Technologies-Istituto Italiano di Tecnologia. She also Coordinates a scientific activity addressed to photo-electro heterogeneous catalysis of CO_2 reduction into valuable fuels and chemicals.

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