



Angelo Nacci

University of Bari, Italy

Nanostructured catalysts for green synthesis

Nanoscale materials are assuming a key role in green catalysis with a wide number of applications ranging from fuel conversion, pollution abatement to fine chemicals production. Many researchers are exploiting the high activity and selectivity of nanocatalysts to develop greener and waste-minimized processes. During the last decades, we exploited nanostructured catalysts based on several metals like Pd, Cu, Au, Zn, and Ti to perform a wide range of organometallic reactions such as Heck, Suzuki, Ullmann, Stille, carbonylations, cyclopropanations, C-H activations, CO₂ photoreduction etc. Environmentally friendly conditions were chosen to perform these processes given by the absence of phosphane ligands and the use of neoteric solvents (ionic liquids, water, emulsions

and mixtures and so on) as reaction media. This lecture deals with our recent advances in controlling the catalyst performances by choosing properly the nature of both the reaction medium and the nanocatalyst.

Speaker Biography

Angelo Nacci completed his PhD in Chemical Sciences in 1994 at Bari University (Italy). Next, he became researcher of Organic Chemistry at Chemistry Department of Bari University. In 2001 was visiting researcher at TUM University of Munich (Germany) and in 2005 became associate Professor of Organic Chemistry. He is currently the President of Chemistry Courses Degree at Bari University. Research interests are focused on: i) organometallic chemistry in ionic liquids; ii) green nanocatalysis; iii) CO₂ capture and valorization and iv) synthesis and recycling of bioplastics. He is co-author of almost 80 publications on major journals, more than 60 Communications to Congress and 1 patent.

e: angelo.nacci@uniba.it



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