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High added value substances from biomass and waste materials

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Abstract

Green chemistry is a fundamental tool in the implementation of Circular Economy. Problems such as global warming, resource depletion, energy demand growth, can find a solution in the application of the Principles of Green Chemistry[1], which can be summarized in the concepts of recycling and emissions containment. In the last two decades our group has developed a series of catalytic systems, based on the use of nanostructured materials applied in typical organic and organometallic[2] reactions (Suzuki, Heck, Ullmann etc.) operating in minimum impact conditions, for example through the use of eco-friendly substrates and solvents (water, ionic liquids, etc.) and with low temperature and pressure values. Recently[3] this experience and these tools have found space in the valorization of biomass and waste materials.



Biography

Michele Casiello currently works at the Department of Chemistry, Università degli Studi di Bari Aldo Moro. Michele does research in Catalysis, Environmental Chemistry and Green Chemistry. His most recent publication is "Steel slag as low-cost catalyst for artificial photosynthesis to convert CO2 and water into hydrogen and methanol."

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