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BOOK OF ABSTRACTS

Design of novel imidazolium based nanostructures for sustainable catalytic applications

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In a growing quest for greener processes able to reduce chemical wastes, the design of recoverable and recyclable catalysts represents a topic of paramount importance for the industry, the environment preservation and the societal progress. In this scenario, the PhD project has been focused on the development of novel hybrid materials endowed with imidazolium based organic salts as heterogeneous catalytic systems for sustainable applications: the conversion of carbon dioxide¹ and the formation of C–C bond². Several imidazolium salts have been covalently grafted onto emerging nanostructures such as carbon nanohorns (CNHs), multi-walled carbon nanotubes (MWCNTs) and polyhedral oligomeric silsesquioxanes (POSS).

All the proposed materials were easily recoverable and recyclable as well as highly active toward the formation of the desired products, showing high thermal stability and outstanding performances in terms of turnover number, productivity and selectivity. The adopted synthetic routes for the design of these hybrids pave the way to a huge spectrum of novel materials for additional catalytic applications.

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References

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