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Multifunctional Heterogeneous Catalysis

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Message from the Guest Editors

One of the challenges of chemical synthesis, which deals with multistep synthetic routes to complicated molecules, is to improve the sustainability of the processes by simplifying separation and purification procedures. Although the usefulness of heterogeneous catalysis in this regard is undeniable, the development of new catalytic systems with improved efficiency is still necessary. Especially single heterogeneous catalysts with different functionalities or different compatible heterogeneous catalysts are of great interest in terms of carrying out one-pot or sequential tandem processes, without the need for purification of the intermediate products. These systems should make the whole process more cost-effective in terms of materials, time and energy consumption, and hence more sustainable in the context of a greener chemistry. These processes can be of special interest in fields such as the conversion of natural biomass into valuable chemicals or the synthesis of pharmaceuticals, where several reaction steps are usually needed.

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