



Organometallic Homogeneous Catalysis

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Message from the Guest Editor

Dear Colleagues,

Organometallic homogeneous catalysts (*OHCs*) have become essential tools in organic synthesis, especially in the production of fine chemicals. One of the advantages of *OHCs* is their selectivity, which allows the formation of the desired products with high performance. This is due to their ability to promote the selective activation of C–E (where E = H or heteroatom) bonds and subsequent coupling reactions. The use of *OHCs* has allowed the development of environmentally benign catalytic processes for obtaining polymers, allylic acetates, alcohols, aldehydes, ketones, and esters in good yields, with high stereoselectivity, and at an industrial scale by catalytic oxidation, hydroformylation, polymerization, metathesis, and a range of other transformative processes. Moreover, *OHCs* have been successfully employed at laboratory scale in CO₂ reduction processes, selective dehydrogenation of formic acid, and nitrogen fixation processes, among others.

This Special Issue aims to show the state-of-the-art and future applications of *OHCs* and includes experimental and theoretical studies as well as revisions.

