Special Issue

Synthesis, Characterization, and Catalytic Applications of Transition Metal Complexes

Message from the Guest Editor

Transition metals and their complexes have been widely used as catalysts due to their ability to form ions with multiple stable oxidation states. This allows them to activate organic substrates via oxidative additions and create new bonds through reductive elimination, providing valuable synthetic tools for constructing new organic frameworks. Catalysis by transition metals is essential in producing molecules with high added value, impacting fields such as pharmaceuticals, agrochemicals, materials science, and natural product synthesis. The increasing demand for fine chemicals has encouraged the development of catalytic systems aligned with green chemistry principles, emphasizing low cost, minimal waste, efficiency, and selectivity. This Special Issue focuses on original research related to the design, synthesis, characterization, and catalytic applications of transition metal complexes in bond formation or skeletal modifications. Submissions of articles and comprehensive reviews are welcomed.

Guest Editor

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Message from the Editor-in-Chief

As the premier open access journal dedicated to molecular chemistry, now in its 30th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts, and novel materials. Pushing the boundaries of the discipline, we invite papers on all major fields of molecular chemistry and multidisciplinary topics bridging chemistry with biology, physics, and materials science, as well as timely reviews and topical issues on cutting-edge fields in all of these areas.

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