

Special Issue

Theoretical Investigations of Reaction Mechanisms

Message from the Guest Editor

Knowledge of reaction mechanisms and driving forces of chemical processes is crucial for the molecular design, the optimization of reaction conditions, and the planning of a chemical synthesis. Elucidation of reaction mechanisms and key factors controlling chemical reactions may be effectively achieved using computational quantum chemical methods, which represent powerful tools for the interpretation and understanding of experimental results and provide invaluable information, complementary to the experimental data, about molecular systems and processes. Computational methods are indispensable for mechanistic studies of reactions proceeding via formation of short-lived intermediates that cannot be detected experimentally, being the only possibility to obtain information about intimate details of the chemical processes when experimental methods cannot help in the understanding of the reaction mechanisms. Previously unpublished manuscripts that report mechanistic studies of organic, inorganic or organometallic reactions with help of computational methods or deal with understanding of the key factors and driving forces governing chemical processes are welcome for this Special Issue.

Guest Editor

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Message from the Editor-in-Chief

As the premier open access journal dedicated to experimental organic chemistry, and now in its 25th 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 multidisciplinary topics bridging biochemistry, biophysics and materials science, as well as timely reviews and topical issues on cutting edge fields in all these areas.

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