



Catalysts

an Open Access Journal by MDPI

CiteScore: 7.6

Impact Factor: 4.0

Special Issue Reprint

Design and Application of Combined Catalysis

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As an efficient and powerful tool, green catalysis is widely used in the catalytic production of various compounds in different fields. Recently, more efficient catalysts and/or novel strategies were developed to improve catalytic efficiency and reduce the catalysis cost. Among them, combinatorial catalysis allows the exploration of innovative chemical reactions, whereas the single-catalysis mode alone results in a poor reaction with low efficiency or even fails in promoting a reaction. This Special Issue, titled “Design and Application of Combined Catalysis”, highlights the expanding role of combinatorial catalysis in addressing the inefficiencies of single-catalytic modes and reducing catalysis costs across diverse fields. Bringing together advances in catalyst design, innovative synthesis strategies, and mechanistic insights into multi-catalysis synergy, this Special Issue exhibits the dynamic evolution of combinatorial catalysis systems. Beyond showcasing technical progress, it underscores the importance of combinatorial catalysis as a key tool for achieving efficient compound production through sustainable approaches. The research presented in this Special Issue vividly demonstrates how the synergistic interplay between different catalysts can lead to remarkable enhancements in activity, stability, and selectivity, thereby paving the way for more sustainable and economically viable chemical processes.



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