



## Applications of Nanocatalysts in Biomass Conversion

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Deadline for manuscript  
submissions:

**closed (30 September 2021)**

### Message from the Guest Editors

Concerns about depleting fossil fuels and global warming effects are pushing our society to search for new renewable sources of energy with the potential to substitute coal, natural gas, and petroleum. In this sense, biomass—the only renewable source of carbon available on Earth—is the perfect replacement for petroleum in the production of fuels and chemicals. In the last decades, heterogeneous catalysis has played a central role in the rapid development of the petrochemical industry. Similarly, heterogeneous catalysis has been key in moving forward technologies for the conversion of biomass (and derivatives) into fuels and chemicals. However, the different chemical compositions of biomass, compared to petroleum, pose new requirements regarding catalysts. Thus, when applied to biomass conversion processes, water tolerance, multifunctionality, robustness, and resistance to impurities become important features. Controlling the shape and morphology of these solids at the nanoscale is also a relevant factor for controlling selectivity and directing synthesis towards obtaining the desired products.





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