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Polyoxometalates (POMs) as Catalysts for Biomass Conversion

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Message from the Guest Editors

Dear Colleagues,

Polyoxometalates (POMs) are unique complex metal oxides with outstanding properties and remarkable applications. They are solid superacids that exhibit pseudo-liquid phase behavior and are capable of replacing mineral acids for plant utility. As solid acid catalysts, they can enable numerous catalytic transformations. For instance, there is currently a paradigm shift from fossil-based resources to biobased resources at refineries or upcoming biorefinery facilities. In this context, many breakthroughs are expected in the catalytic application of polyoxometalates, also called heteropoly acids, towards the conversion of biomass to biofertilizers, biochemical, biofuels and biomaterials. Other classes of polyoxometalates, including Dawson-type, Anderson-type and others, are underutilized. Likewise, W- and Mo-containing polyoxometalates have been studied in detail for their catalytic role. With these new ideas in mind, the Editors of this Special Issue venture into the unknown by launching this Special Issue, entitled “Polyoxometalates (POMs) as catalysts for biomass conversion.”