

Catalysis for Energy and Environment

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Owing to the ever-growing demand for clean energy, and high pollution of air, soil, and water, environmental preservation is one of the most critical challenges for the scientific community. In this context, biomass as a renewable feedstock has been gaining importance to meet the global need for fuels and chemicals from sustainability perspectives. Studies on heterogeneous catalysts applied in bio-energy, biomass, and environmental depollution are in dynamic growth. Several types of heterogeneous catalysts have been developed and applied in different fields such as clean energy production, biomass valorization, wastewater treatment, soil remediation, and air depollution.

My research group has been involved in the development of low-cost, stable heterogeneous catalytic systems for viable solutions to chemical manufacturing and environmental remediation by accomplishing zero discharge. A series of catalysts for biomass conversion, cathode materials for Li-ion batteries, supercapacitor electrodes, environmental sensors, and soil remediation have been developed and industrialized from my group. The proposed talk will throw light on our recent research and technological advancement in these areas.

References:

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