Special Issue

Present Challenges in Catalytic Emission Control for Internal Combustion Engines

Message from the Guest Editors

Despite the increasing market share of electric vehicles, internal combustion engines continue to be widely used in numerous sectors, ranging from transportation to energy production. Numerous efforts are still invested to enhance engine efficiency and decrease CO2 emissions. Concurrently, further improvement of the catalytic exhaust gas aftertreatment system remains a high priority. In particular, knowledge-based catalyst development is regarded as the ultimate approach for attaining near-zero pollutant emissions. This Special Issue on “Present challenges in catalytic emission control for internal combustion engines” is aimed at providing an overview on state-of-the-art catalyst characterization, performance, deactivation, and reactivation for different classes of catalysts applied to the exhausts of diesel, gasoline, or natural gas engines. The contributions to the Special Issue should preferentially include systematic and comprehensive studies for elucidating mechanistic aspects and deriving structure–activity correlations. Equally important are the contributions describing recent advances in catalyst modeling and simulation.

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