Special Issue

Catalytic CO Oxidation and Preferential CO Oxidation (PROX)

Message from the Guest Editors

This Special Issue will collect recent advances and insights into CO oxidation and PROX. Catalytic CO oxidation is a widely studied reaction, because of its great practical importance in automotive exhaust gas control and in H2 purification for proton exchange membrane fuel cells. Of particular interest are the development of three-way-catalysts with low ignition temperatures to reduce automotive emissions during the engine cold start and the improvement of catalysts stability against sintering under the high operating temperatures of the exhaust gas, especially in the presence of moisture. The preferential CO oxidation (PROX) is of interest as H2 purification technology to obtain CO-free H2 for hydrogen-powered fuel cells, particularly for small-scale portable and on-board power units. PROX catalysts require high activity, selectivity, and stability. Topics of interest include metal and metal oxide catalysts, the role of metal/oxide interfaces, mechanistic studies, investigations of the nature of active sites, structure-activity-correlations, in situ/operando spectroscopy, the development and synthesis of new materials, model studies and DFT modeling.

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