

Special Issue

Catalytic Concepts for Methane Combustion

Message from the Guest Editors

Methane release from vehicles, agriculture, or mining must be abated in order to control the emission of this greenhouse gas into the atmosphere. One option is the catalytic oxidation of methane to carbon dioxide, with the latter having a much lower global warming potential. To this end, both academia and industry have focused on the development of catalysts operating at temperatures as low as possible. Therefore, it is of essential importance for commercial applications to provide fundamentals describing the catalytic performance under “real” off-gas conditions. Addressing this demand, studies affording new insights into this field are highly welcome to contribute to this Special Issue. The focus will be put on (i) recent developments in designing novel catalysts, (ii) mechanistic understanding of factors affecting catalyst performance, and (iii) their efficient usage. Catalysis under dynamic conditions, understanding the role of off-gas components affecting catalyst activity, or promoting techniques (light, fields, plasm) lowering the combustion temperature are just a few examples of the current hot spots in the field.

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