

Session of Focus Materialchemie – Wednesday, **05.10.2022** 16:00 – @ Seminarraum Lehar 02 (TU-Wien, Getreidemarkt 9, BC, OG. 02, room A46) – [join us](#) on ZOOM (ID: 983 0066 2349)

Solid solutions based on Zirconia applied to Syngas production from methane: a short review

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Zirconia (ZrO_2) has been frequently studied as catalytic support for noble and non-noble metal catalysts in a variety of reactions, due to favorable characteristics related to oxygen transfer, redox and basic properties, oxygen vacancies, etc. In Syngas production from methane, Nickel supported on Zirconia has been well studied and many interesting results were reported. However, its limited thermal stability and the weak metal-support interaction somewhat hamper its application at high temperatures of reforming reactions. Zirconia-based solid solutions can provide active centers and improve catalyst properties such as surface area, metallic dispersion and stability. Oxygen vacancies help to diminish carbon deposition on the surface of the catalysts. Despite many studies, the exact role of these solids-solutions under reaction conditions is still unknown.

The present seminar will discuss recent results of Nickel catalysts supported on solid solutions of $MgO-ZrO_2$ of various composition and their application to the Partial Oxidation of Methane.