

ANALYSIS OF LITERATURE MODELS OF OXIDATION OF METHANE AT MODERATE TEMPERATURES

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Abstract: The interest to the partial oxidation of methane at moderate temperatures below 1000 K is explained by its role in the promising processes of direct conversion of gas-phase hydrocarbons into other chemical compounds, first of all, in the process of Direct oxidation of Methane To Methanol (DMTM). The optimization and technological development of such processes need a reliable kinetic model. This study presents the critical analysis of published models that have been used for simulating partial oxidation of methane at different conditions and temperature ranges and the results of their preliminary testing in terms of their capability to describe the DMTM process.

Keywords: natural gas; methane; partial oxidation; methanol; formaldehyde; oxygenates

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