



Hydrogen Production by Methanol: An Experimental & Simulation Analysis

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Hydrogen is the fuel of future. It has found its uses as an alternate energy source either by direct combustion or by electricity generation through fuel-cell. Hydrogen being the lightest gas has storage problems and risk hazards. In order to overcome these challenges idea of on-board production of hydrogen is popular among researchers. For on-board production of hydrogen process of partial oxidation of methanol is proposed and discussed in this work. For partial oxidation of methanol a fixed bed catalytic reactor is designed. In order to explain the method in detail, computer aided modeling and simulation of process is carried out using Aspen-HYSYS V7.1 tool. Simulation studies are focused to optimize the process for best possible conversion of methanol to desired product hydrogen. By simulation various parameters and response of fixed bed reactor is studied in detail. Reaction kinetics is explained on the basis of Langmuir Hinshelwood model in this work. In order to make the whole process reliable experimental rig is also designed for physical production of hydrogen by partial oxidation of methanol. Results from both simulation and experimental work are analyzed and compared. | Format: Paperback | Language/Sprache: english |...



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