RESEARCH PAPERS

在管式填充床反应器中甲醇部分氧化蒸汽重整制氢的模拟研究

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收稿日期　修回日期　网络版发布日期　接受日期

摘要　Hydrogen production by partial oxidation steam reforming of methanol over a Cu/ZnO/Al2 O3
cata lyst has been paid more and more attention. The chemical equilibria involved in the
methanol partial oxidation steam reforming reaction network such as methanol partial
oxidation, methanol steam reforming, decomposition of methanol and water-gas shift reaction
have been examined over the ranges of temperature 473-1073 K under normal pressure. Based
on the detailed kinetics of these reactions over a Cu/ZnO/Al2O3 catalyst, and from the
basic concept of the effectiveness factor, the intraparticle diffusion limitations were
taken into account. The effec tiveness factors for each reaction along the bed length were
calculated. Then important results were offered for the simulation of this reaction
process.

关键词　methanol partial oxidation steam reforming　chemical equilibria　diffusional limitations

effectiveness factor

分类号

DOI:

Simulation Studies of the Hydrogen Production from Methanol Partial Oxidation Steam Reforming by a Tubular Packed-bed Catalytic Reactor

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Abstract Hydrogen production by partial oxidation steam reforming of methanol over a Cu/ZnO/Al2 O3
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Key words methanol partial oxidation steam reforming; chemical equilibria; diffusional limitations; effectiveness factor

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