307e Use of Bimetallic Carbide Catalyst for Steam Reforming of Alcohols for Hydrogen Formation

Huifeng Shao, Wenping Ma, Edwin L. Kugler, and Dady B. Dadyburjor

The bimetallic carbide catalyst Co_6W_6C, which has been used to advantage in the dry reforming of methane, is considered here for the steam reforming of methanol. Such a process would be an effective way to produce hydrogen on demand and on location using a liquid fuel. Preliminary data indicate that acceptable values of the methanol/water ratio are bounded by low activity (excess water) and rapid plugging (excess methanol). A value of 1.5 (weight basis) appears appropriate. Simple kinetics indicates that a pseudo-second-order reaction rate constant for this reaction is at least comparable to that obtained for the dry reforming reaction.