

### Dry reforming of methane to synthesis gas over carbonaceous catalysts

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The dry reforming of methane, respectively, is promising alternatives to industrial steam methane reforming. In this study, the catalytic activity and kinetic behavior of catalytic reforming of methane with carbon dioxide over carbonaceous catalysts were investigated as a function of reaction temperature and partial pressure of methane and carbon dioxide. Activated carbon and carbon black were employed as the catalyst to examine the reaction activity. The CH<sub>4</sub> and CO<sub>2</sub> conversion were greatly influenced by the reaction temperature in the range of 1,073 ~ 1,223 K. The reaction rate of methane and carbon dioxide was affected significantly by the partial pressure. The deactivation patterns were similar to the decomposition of methane over carbonaceous catalysts. The RWGS reaction occurs over activated carbon, but it did not occur in the overall reaction mechanism over carbon black.