

## 인공적으로 포어 조절이 가능한 Co based SiC-MgO-Al<sub>2</sub>O<sub>3</sub> 혼합촉매의 제조 및 특성분석

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Co/SiC composite catalysts with controlled pore structure were prepared with aid of a pore former for obtaining support materials with nanoporous architectures optimal for the synthetic fuel production. The artificial pore structure of a meso- and macroporosity was successfully developed by a two-step calcination of SiC/MgO-Al<sub>2</sub>O<sub>3</sub> supports containing over 10 wt% carbon black, not by the conventional single-step process in oxygen which is responsible for growth of small pores. The effect of the two-step process is confirmed from a dramatic enhancement in specific surface area and an increase in mesopore volume by the heat treatment in argon. The cobalt aluminates, which can lead to the degraded catalyst activities and selectivities to alkenes and higher hydrocarbons, were unformed due to the formation of magnesium aluminate. Finally, the Co-based nanocatalysts supported on the meso-macroporous SiC composite supports, were obtained by the aid of the pore former and the two-step process.