

Eutectic Mixture-Promoted Hollow MgO Fibers Synthesized via Electrospinning for High-Temperature CO₂ Capture

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Eutectic mixtures (EM) of alkali nitrate salts are known to promote the CO₂ capture capacity of magnesium oxide. However, such EM-MgO sorbents experience agglomeration and drastic structural changes during sorption-regeneration due to EM melting at high temperatures. In this study, hollow MgO fibers were synthesized via electrospinning in order to utilize the hollow core as an EM carrier and consequently protect the promoter during high-temperature CO₂ sorption. The loading of EM on the MgO fiber was optimized and the resulting sorbent was characterized by XRD, BET, and SEM analyses. The CO₂ sorption behavior was then analyzed using thermogravimetric analysis. It is expected that the hollow fiber structure will offer several advantages to the EM-MgO sorbent. This work was supported by the Energy Efficiency & Resources (No. 20163010092210) of the Korea Institute of Energy Technology Evaluation and Planning (KETEP) grant funded by the Korea government Ministry of Trade, Industry & Energy.