

Stability and regeneration of supported MgO–Eutectic Mixture sorbent for CO₂ capture at warm temperature

이한영, RUBY JANE BROAS, Hiremath Vishwanath, 서정길†
명지대학교
(jgseo@mju.ac.kr†)

The development of regenerable solid sorbents for CCS technology has been intensive to actualize the deployment of commercial CO₂ capture technology which is hindered by the considerable cost of the present technology. CO₂ capture at warm temperature (250 – 500°C) with solid sorbents is more energy-effective than with liquid absorbers because of a narrower operating temperature. Magnesium oxide have received much attention as a potential candidate for warm temperature CO₂ capture and studies integrating molten salt in the solid sorbent have resulted to a remarkable absorption capacity. However, issue in the regeneration of the sorbent should be addressed. In this study, a suitable support was selected and added to the modified MgO sorbent. Properties and performance of the supported MgO was determined by XRD, BET, SEM-EDX, and TGA. Supported MgO resulted in a stable regeneration with the designed sorbent. This work was supported by KCRC through the NRF funded by Ministry of Science, ICT, and Future Planning (NRF-2014M1A8A1049258).