Preparation and characterization of MgO-based molten salt for CO_2 absorption-desorption at warm gas temperature

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While magnesium oxides are promising absorbents due to its high carbon capture capacity at warm gas temperature (200-400 ℃), their slow CO_2 absorption-desorption kinetic should be improved for industrial application. In this work, eutectic mixture of different metal salts were embeded into magnesium oxide in order to enhance the CO_2 capture kinetic and capacity. The prepared MgO-based molten salt was characterized by BET, ICP, XRD, and SEM, and the effect of molten salt on the kinetic, capacity, and regenerability of sorbent was investigated. This work was supported by KCRC through the NRF funded by Ministry of Science, ICT, and Future Planning (NRF-2014M1A8A1049258).