

Control of calcium carbonate polymorphism in the CO<sub>2</sub> mineralization process

Murnandari Arti, 윤민혜<sup>1</sup>, 정순관<sup>1,†</sup>  
University of Science and Technology;  
<sup>1</sup>한국에너지기술연구원  
(jeongsk@kier.re.kr<sup>†</sup>)

Chemical absorption using aqueous amine solution is considered to be the most applicable technology for CO<sub>2</sub> capture. Even though the technology is already mature, it's a major challenge that this technology estimate 70–100% electricity cost increment, mainly because of high energy consumption in the regeneration process. To help offset the electricity cost of conventional CCS technology, novel technologies propose to mineralize CO<sub>2</sub> absorbed in amine solution instead of regeneration process. In this work, different polymorph crystals of calcium carbonate were prepared by CO<sub>2</sub> mineralization process with different experimental condition such as feed rate of calcium ion source, mixing rate, and temperature. The effect of experimental parameter on the structure of CaCO<sub>3</sub> in the mineralization process was investigated.