

Mineralization of Calcium Carbonate for CO₂ Recovery in 2-Amino-2-Methyl-1-Propanol
(AMP)

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Carbon capture and sequestration recognized as compromising method to reduce greenhouse gas effect from industry consuming fossil fuel. Industry contributes 21% of global greenhouse gas emission in economical section (IPCC, 2014). Absorption and regeneration is well established approach to control polluted flue gas emitted using amine as absorber and heat to recycle the amine in regeneration. Heat dissipation of regenerator becomes drawback of the process. In this work, mineralization as alternative of thermal treatment investigated. Mineralization can convert 97.4% of CO₂ absorbed in the AMP while thermal treatment release 68% of carbon dioxide captured in absorption process. Effect of the process parameter on crystal morphology also reported to attain correlation. It is found that stirring rate has proportional growth on crystal size while temperature and reactant concentration take part in morphology of crystal.