

CO₂ Adsorption of Amine-Silane immobilized Zeolite A

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The carbon dioxide capture and storage (CCS) has been considered as one of the promising remedy of global warming and CO₂ problem. Specially, CO₂ capture in the post-combustion process of fossil fueled power plant is urgently necessary due to large single point emission of CO₂. Even though liquid sorption removal by using liquid amines such as MEA(Monoethanolamine) and DEA(diethanolamine) was commercialized, this has drawback of corrosion and expenditure of power consumption. So, the use of solid amine has been challenged to develop. In this context, the amine zeolite composite has been studied to be utilized as CO₂ adsorbent due to zeolitic high surface area and alkali metal cation property with amine functional group. In order to achieve zeolite-amine composite, the amine silane was prepared and immobilized onto zeolite A via one-pot synthesis and CO₂ adsorption behavior was observed.