

Linear diaminosilane impregnated on silica for dry CO₂ capture

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The development of hybrid organic-inorganic sorbents has been intensively studied as a promising material for CO₂ capture. Recent studies focus on various amines by increasing the number and order of substitution of the nitrogen atoms. In this study, adsorbents were prepared via incipient wetness technique using different linear diaminosilane to silica support. Sorbents are characterized and analyzed by in situ FT-IR and TGA for CO₂ sorption capacity and adsorption/desorption cycles. The effect of an ethyl and propyl spacer against the formation of urea and other degradation products were studied.