

Simultaneous CO₂ capture and Enhanced H₂ Production with Adsorptive Separation

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Simultaneous reaction was executed to be simultaneous with steam methane reaction using catalyst based on Ni/Ca/Al₂O₃ and removal of carbon dioxide using sorbent. 750°C was determined for the hybrid reaction and 950°C for the regeneration using thermogravimetric analysis. The change of ratio of sorbent/catalyst and GHSV were selected for the variables to determine the optimum condition of simultaneous reaction. The removal reaction of carbon dioxide played a role of determining step of simultaneous reaction rate because of slower reaction than methane steam catalyst reaction.