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## Preliminary study of biogas upgrading and purification by pressure swing adsorption (Conference Paper)

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### Abstract

Biogas upgrading has led to the enhancement and enrichment of biomethane content. It is one of the most sought after the process of separating gas. A few technologies have been developed in order to increase the ability of biomethane such as water scrubbing, chemical scrubbing and pressure swing adsorption (PSA) as for quality vehicle fuel and some of them are in the market already proving to be effective and practicable. The use of PSA system in this project focuses on increasing the concentration of biomethane gas, decreasing the concentration of carbon dioxide gas and eliminating the other portion of gas impurities. The PSA system uses high pressure and the application of molecular sieves such as activated carbon, silica gel and zeolite to adsorb all the typical elements that found in the biogas. The PSA proved to be the best choice of technology for the separation of carbon dioxide from biogas nowadays. Throughout the experiment, carbon dioxide was reported that it was able to be adsorbed onto the surfaces of the molecular sieves paving the way for methane content percentage to be increased.

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