

عنوان مقاله:

improve of Membrane processes for the upgrading of biogas

محل انتشار:

سومین کنگره ملی مهندسی نفت (سال: 1390)

تعداد صفحات اصل مقاله: 15

نویسندگان:

Nasrolah shakiba sefat - National Iranian South Oilfields Company

zahar estakhr - Department of Islamic Azad University, Fars Science and Research Branch Iran

Bizhan honarvar - Department of Islamic Azad University, Fars Science and Research Branch Iran

Abdolreza kazemi ebad shapouri - Islamic Azad University, Fars Science and Research Branch Iran

خلاصه مقاله:

Biogas is a clean environment friendly fuel that is produced by bacterial conversion of organic matter under anaerobic (oxygen-free) conditions. Membrane processes have been identified as one of the most effective means for upgrading biogas and this topic has already received considerable attention the production of methane through the microbial degradation of organic wastes. This strategy does indeed offer the possibility of using a large variety of renewable feed stocks (food and agricultural wastes, manure, crop residues, municipal and industrial wastewater, landfill, etc.) for an alternative production of gaseous fuel. Several analyses have also shown that biomethane production through energy crops can lead to larger yields in Joule per hectare as compared to for instance ethanol or biodiesel. The new membrane material was resistant to the small concentrations of sour gases and assured the reduction of H₂S and water vapour concentrations, as well. The required enrichment was achieved in the single module, however to prevent CH₄ losses the multistage or hybrid systems should be used to improve process efficiency. In the paper the results of the tests of the CH₄ enrichment was showed that using the capillary module with glassy polymers, such as polyimide membranes, it was possible to achieve the enrichment of CH₄ from the concentrations of 55–85% up to 91–94.4%.

کلمات کلیدی:

Biogas, Methane (enrichment), Membrane process, Biogas upgrading, CO₂-selective membrane

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/260187>

