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Biogas purification: Removal of CO₂ and H₂S by process absorption chemistry

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Biogas is a gas containing mainly methane (CH₄) and contain carbon dioxide (CO₂), hydrogen sulfide (H₂S) and other components, produced from a renewable source, particularly from anaerobic digestion of organic waste, manure and other organic substances fermentable. The biogas production has many advantages, particularly environmental point of view, because they result in two green products, biogas and organic residue. Biogas is a friendly fuel for vehicles. It can also be used to produce electricity, heat and used as a raw material in industry. In this work, a method for the purification and enrichment of biogas CH₄ will be presented, using aqueous solutions in a reactor column with and without filling with goal to remove CO₂ and H₂S through chemical absorption process. Solutions to be used will be sodium hydroxide and hydrogen peroxide at different concentrations. Based on the results obtained with the purification of biogas, the feasibility study of the purification process will be done with use of these materials, allowing a greater concentration of methane and increased energy efficiency of the mixture. For the statistical evaluation of the results, statistical software will be used for the analysis and processing of data.

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