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PENGARUH UKURAN SERBUK ARANG KAYU ULIN TERHADAP EFEKTIVITAS PEMURNIAN BIOGAS

Andri Purwata, Mastiadi Tamjidillah

ABSTRACT

This study aims to determine the effect of ironwood charcoal powder size on the effectiveness of biogas purification and generator-set performance. This research was carried out by flowing biogas from sanitary landfill to biogas purification insulator containing adsorption media with charcoal varying charcoal size variations, namely size 20, 30 and 40 mesh, then biogas stored in a storage tube then flowed to the chamber for CO2 level reading and CH4 uses a gas analyzer. From this study the following results were obtained: Biogas without charcoal (CO2 26514.66 ppm and CH4 101.07 ppm), Biogas with a size of 20 mesh (CO2 20270.08 ppm, CH4 458.35 ppm and effectiveness of 23.55%), with a size of 30 mesh (CO2 14273.31 ppm, CH4 658.75 ppm and effectiveness of 46.16%), with a size of 40 mesh (CO2 12092.66 ppm, CH4 3161.04 ppm and effectiveness of 54.39%). For the results of testing the performance of generator sets using biogas fuel which has been purified with ironwood charcoal with a size of 40 mesh, ie for no load, rotation is obtained at 3465.0 rpm, temperature 102 0C, and voltage 240 V (stable), with load 350 W obtained rotation 3203.8 rpm, temperature 236 0C, and voltage 150-240 V (unstable), with a load of 700 W obtained rotation 3360.9 rpm, temperature 220 0C, and voltage 100-200 V (unstable). Keywords: Biogas Purification, Variation in Mesh Size, Ironwood Charcoal.

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Keywords: Purification of Biogas, Mesh Size Variations, Ulin Wood Charcoal

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REFERENCES

Jatmiko, Sigit. 2015. Karakteristik Thermal Biogas Yang Difurifikasi Larutan KOH 4 (Empat) Molaritas Dibandingkan Dengan Biogas Tanpa Purifikasi. Skripsi. Jember : Universitas Jember.

Kasmawarni. 2013. Proses Aktivasi Arang Kayu Laban (Vitex Pinnata L.) Dengan Cara Pemanasan Pada Suhu Tinggi. Jurnal Litbang Industri. Vol. 3 No. 2 : 117-124.

Meynell, P.J. 1976. Methane:Planning a Digester.Great Britain : Prism Press.

Price, E.C., Cheremisinoff P.N. 1981. Biogas Production and Utilization. Inc. United States of Amerika : Ann Arbor Science Publishers.

Ruthven, Douglas M. 1984. Principles of Adsorption and Adsorption Processes. Kanada : Published Simultaneously.

Widhiyanuriyawan, Denny, Nurkholis Hamidi. 2013. Variasi Temperatur Pemanasan Zeolit Alam-NaOH Untuk Pemurnian Biogas. Jurnal Energi dan Manufaktur. Vol. 6 No.1 : 53-63.

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Editorial Address

Department of Mechanical Engineering, Engineering Faculty, Lambung Mangkurat University

Jl. Jenderal Achmad Yani Km. 35,5 Banjarbaru Telp. (0511)-4773858 Fax. 0511-4773858.

HP: 0853-3262-2556 (Andy Nugraha) and 0821-5232-0035 (Herry Irawansyah)

E-mail: jtamrotary@ulm.ac.id, andy.nugraha@ulm.ac.id, herryirawansyah@ulm.ac.id

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