

ORAL PRESENTATION 5

Biochar Formulation Using Alkaline Pre-treated Oil Palm Trunks and Oil Palm Frond

Nik Azmi Nik Mahmood^a, Syed Annuar Fau'ad Syed Muhammad^a, Roslina Md Rashid^a, Md Abas Ali^b and Abdul Hadi Md Salleh^a

^a*Department of Bioprocess Engineering, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor.*

^b*Department of Chemistry, Rajshahi University of Engineering & Technology, Rajshahi-6204, Bangladesh.*

Biochar is charcoal made from plant material and agricultural biomass. The biochar is produced by slow thermo-chemical pyrolysis of biomass materials and has been proven of its benefits in soil enrichment and as a combined material for industrial heating fuel. In the present research, biochar formulation was made to utilize two types of oil palm tree biomass; oil palm trunk (OPT) and oil palm frond (OPF). The best combination of both materials was evaluated in terms of calorific heat value, moisture and ash content and compared with the standard biochar. In addition, treated OPT and OPF were compared with the untreated material to further enhance the characteristic of the biochar.

Keywords: Biochar; Alkaline pre-treatment; Oil Palm Trunk (OPT); Oil Palm Frond (OPF)