

VICHEIN TRONGCHITTHAM : CARBONIZATION OF COAL IN FLUIDIZED BED
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Raw coal samples recieved from Ban Poo Mine, Lamphoon province were crushed and prepared into four particle size ranges (0.5-1.0 mm., 1.0-2.0 mm., 2.0-4.0 mm. and 4.0-6.0 mm.). The experiments were devided in two parts. In part one, it was carbonized in a Modified Fischer Assay retort at final temperatures 250-600 °C with a heating rate of 5 °C/min. The result showed that the yield of char was 53.0 (%W), tar oil 3.4 (%W) and gas 15.6 lits at 600 °C. In part two , it was carbonized in a fluidized bed reactor at 325-600 °C at the same heating rate. The result showed that the yield of char was 51.0 (%W) with 0.3 (%W) tar oil at 600 °C. The proximate analysis of char were fixed carbon 65.8 %, volatile matter 17.6 %, ash content 16.5 % and calorific value 6,457 cal/g at 600 °C. Coal tar consisted of saturated hydrocarbon : unsaturated hydrocarbon : aromatics in the order 0.3081 : 0.3051 : 0.3868. Noncondensibile gases from carbonization in fluidized bed composed of methane, carbondioxide and oxygen.