

International Energy Journal, Vol.5. No.1, June 2004[HOME](#) | [ABOUT](#) | [LOG IN](#) | [REGISTER](#) | [SEARCH](#) | [CURRENT](#) | [ARCHIVES](#)[Home](#) > [Vol.5. No.1, June 2004](#) > **Islam****Fixed Bed Pyrolysis of Scrap Tyre for Liquid Fuel Production***Md. Nurul Islam, Mohammad Narul Islam, Mohd. Rafiqul Alam Beg***Abstract**

The thermochemical conversion of scrap tyre into liquid fuel by continuous fixed bed pyrolysis process has been taken into consideration in this study. The scrap tyre was characterized through proximate, ultimate and thermo-gravimetric analysis to investigate its suitability as feedstock for this consideration. Scrap tyre in particle form was pyrolysed in an externally heated 0.28 m³ fixed bed reactor with nitrogen as a carrier gas. A biomass source heater in cylindrical shape and a gravity feed type reactor feeder were used to heat and to feed the reactor respectively. The pyrolysis products were liquid, char and gas. The product yields were significantly influenced by the process conditions. At an optimum reaction condition of fixed bed temperature of 450°C, feedstock size of 3 ? 5 cm and operating time of 75min, an oil yield of 64 wt % of dry feed stock was obtained. The oil obtained at this optimum process condition was analyzed for their properties as an alternative fuel and was compared with petroleum products. The fuel properties compared were physical properties, calorific value, elemental (CHNOS) analysis and chemical composition using Fourier Transform Infra-Red (FTIR) spectroscopy.

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