

# **A Review on Enhancement of Oil Palm Solid Waste Through Torrefaction**

## **Abstract**

Biomass is one of the renewable energy sources and is easily obtained in Malaysia. Due to the substantial amount of biomass waste generated by agricultural activities, Malaysia actually has great potential for biomass power generation. The oil palm industry is the largest contributor to biomass waste in Malaysia, particularly oil palm solid waste. The raw oil palm solid waste produced low-quality products during thermochemical conversion. Thus, the torrefaction process is one of the approaches to improve the characteristics of raw oil palm solid waste. Therefore, the objectives of this study are to review the production and characteristics of solid biofuel from oil palm solid waste via the torrefaction process. Torrefaction is a thermal conversion method of biomass in the low-temperature range of 200–300 °C. Different reaction conditions such as temperature and reaction time lead to several characteristics of biofuel products. The solid fuel of pretreated oil palm solid waste has enhanced overall quality and its characteristics after torrefaction.

## **Keywords**

Biofuel; Oil palm solid waste; Torrefaction