

ABSTRACT

The present application relates to a method and a device system for producing an ethylene-device steam cracking raw oil and a nano charcoal material from waste plastics. The method comprises: first carrying out thermal cracking on waste plastics to obtain hydrocarbon cracked oil and gas; then carrying out gas-liquid separation on the hydrocarbon cracked oil and gas so as to obtain crude cracked oil and cracked gas; then carrying out decarbonization treatment on the cracked gas to obtain a nano charcoal material; and sequentially carrying out hydrocracking and fractionation on the crude cracked oil so as to obtain ethylene-device steam cracking raw oil. The device system comprises a thermal cracking unit, a gas-liquid separation unit, a hydrocracking unit, a fractionation unit and a decarbonization unit. The method and the device system provided by the present application can produce an ethylene-device steam cracking raw material having a high proportion of acyclic alkanes, and said raw material can achieve a relative high target product yield when being used for producing downstream products; and the production process is free of carbon dioxide emission, and is green and clean. The device system provided by the present application has a simple structure and is industrially applicable.

FIG. 1