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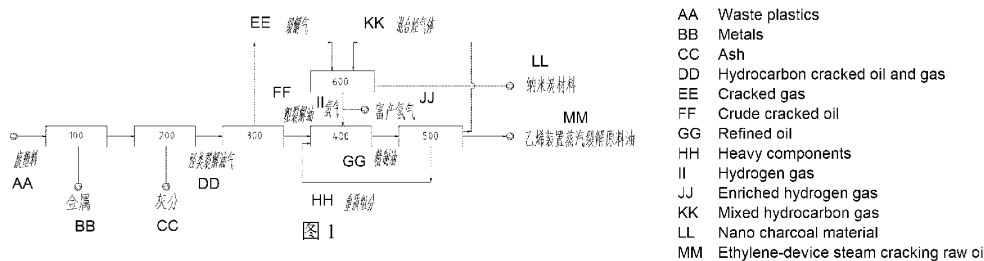


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- (81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。
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(54) Title: METHOD AND DEVICE SYSTEM FOR PRODUCING ETHYLENE-DEVICE STEAM CRACKING RAW OIL AND NANO CHARCOAL MATERIAL FROM WASTE PLASTICS

(54) 发明名称: 一种废塑料生产乙烯装置蒸汽裂解原料油和纳米炭材料的方法及装置系统



(57) 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.

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CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN,
TD, TG)。

本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本申请涉及一种废塑料生产乙烯装置蒸汽裂解原料油和纳米炭材料的方法及装置系统, 所述方法包括: 首先, 将废塑料进行热裂解, 得到烃类裂解油气; 然后, 将烃类裂解油气进行气液分离, 得到粗裂解油和裂解气; 之后, 将裂解气进行脱碳处理, 得到纳米炭材料, 将粗裂解油依次进行加氢裂解和分馏, 得到乙烯装置蒸汽裂解原料油。所述装置系统包括热裂解单元、气液分离单元、加氢裂解单元、分馏单元和脱碳单元。本申请提供的方法和装置系统能够制备得到链烷烃比例高的乙烯装置蒸汽裂解原料, 其生产下游产品能够获得较高的目标产物收率, 并且生产过程无二氧化碳排放, 绿色清洁。本申请提供的装置系统结构简单, 可以工业化应用。