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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,

(54) Title: CATALYTIC CRACKING REACTOR, SYSTEM, AND APPLICATION

(54) 发明名称: 催化裂解反应器和系统及其应用

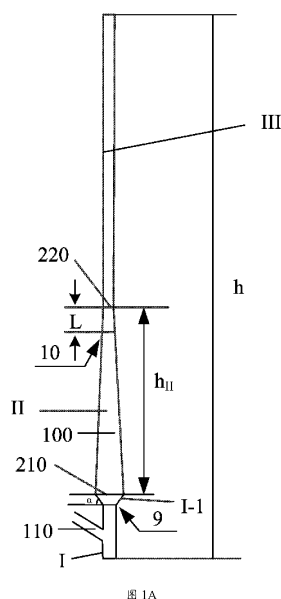


图 1A

(57) Abstract: Disclosed are a fluid catalytic cracking reactor, and a system therefore and an application thereof. The fluid catalytic cracking reactor sequentially comprises a catalytic cracking reaction zone and an outlet area from bottom to top; the top end of the reaction zone is communicated with the bottom end of the outlet area; the reaction zone comprises at least one diameter contracting reaction section, the inner diameter of the diameter contracting reaction section is continuously reduced from the bottom end to the top end, the inner diameter of the top end is greater than or equal to that of the outlet area, and the ratio of the total height of the at least one diameter contracting reaction section to the total height of the reactor is 0.15:1 to 0.8:1. By using the fluid catalytic cracking reactor and the system, chemical raw materials such as ethylene and propylene can be efficiently produced from light petroleum hydrocarbons, and when used for a catalytic cracking reaction, the contact efficiency of the raw materials and a catalyst is high, the catalytic reaction selectivity is good, the yield of high-added-value products such as ethylene and propylene is high, and the yield of byproducts such as methane is low.

(57) 摘要: 公开了一种流化催化裂解反应器和系统及其应用, 所述流化催化裂解反应器从下到上依次包括催化裂解反应区和出口区, 所述反应区的顶端与所述出口区的底端连通, 其中所述反应区包括至少一个缩径反应段, 其内径由底端至顶端连续地减小, 其顶端的内径大于或等于所述出口区的内径, 并且所述至少一个缩径反应段的总高度与所述反应器的总高度之比为 0.15:1 至 0.8:1。采用所述流化催化裂解反应器和系统, 可以从轻质石油烃高效生产乙烯、丙烯等化工原料, 当用于催化裂解反应时, 原料与催化剂的接触效率高, 催化反应选择性好, 乙烯和丙烯等高附加值产物的产率高, 甲烷等副产物产率低。

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(84) 指定国 (除另有指明，要求每一种可提供的地区保护)：ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

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