



- (51) International Patent Classification:
C10G 9/20 (2006.01)
- (21) International Application Number:
PCT/US2008/073965
- (22) International Filing Date:
22 August 2008 (22.08.2008)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/957,533 23 August 2007 (23.08.2007) US
- (71) Applicant (for SM only): **SHELL OIL COMPANY**
[US/US]; One Shell Plaza, P.O. Box 2463, Houston,
Texas 77252-2463 (US).
- (71) Applicant (for all designated States except US): **SHELL
INTERNATIONALE RESEARCH MAATSCHAPPIJ
B.V.** [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR
The Hague (NL).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **BAUMGARTNER,
Arthur James** [US/US]; 618 Airybrook Lane, Houston,
Texas 77094 (US). **BLACKBOURN, Robert Lawrence**
[US/US]; 16410 Battlecreek Drive, Houston, Texas
77095 (US). **NGAN, Danny Yuk Kwan** [US/US]; 539
Three Corners, Houston, Texas 77024 (US).
- (74) Agent: **LUNDELL, Craig M.**; Shell Oil Company, One
Shell Plaza, P.O. Box 2463, Houston, Texas 77252-2463
(US).
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ,
EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,

[Continued on next page]

(54) Title: IMPROVED PROCESS FOR PRODUCING LOWER OLEFINS FROM HYDROCARBON FEEDSTOCK UTILIZ-
ING PARTIAL VAPORIZATION AND SEPARATELY CONTROLLED SETS OF PYROLYSIS COILS

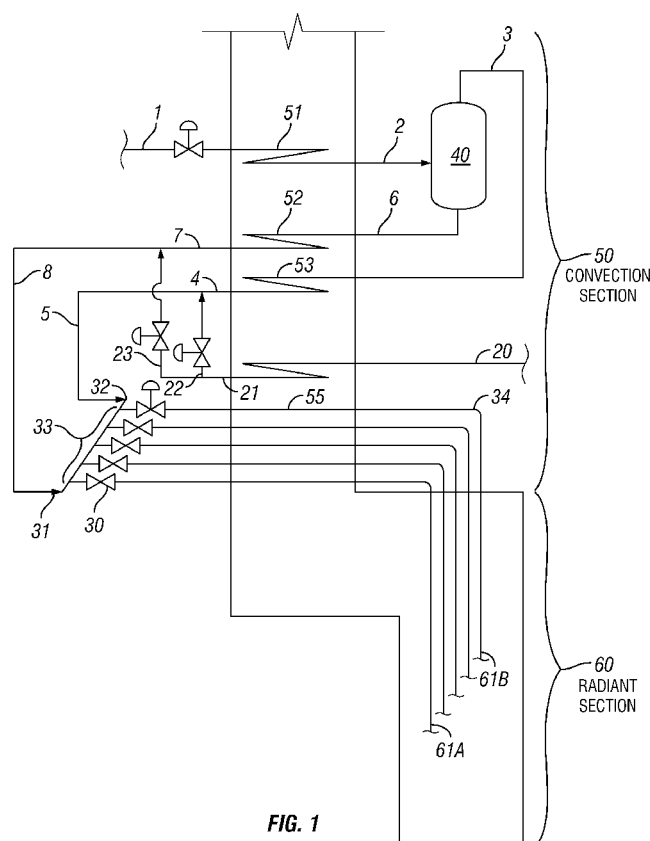


FIG. 1

(57) Abstract: A process for making lower olefins from a wide boiling range hydrocarbon feed by use of a combination of one or more vapor/liquid separation devices (40), and then pyrolytically cracking the vapor phase in separate sets of pyrolysis radiant tubes (61), thereby producing a higher level of lower olefin product. The particular set of radiant pyrolysis coils (61) associated with the particular feed fraction are matched to achieve specific target cracking severity in order to enhance the overall production of C2 and C3 mono-olefins or optimize yields for overall improved profitability.



SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, ZA, ZM, ZW.

Published:

— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

(88) Date of publication of the international search report:

5 November 2009