

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C10G 47/02, 47/00, 65/00, 45/00, C07C 4/02, B01J 8/00, 8/04, F28D 21/00	A1	(11) International Publication Number: WO 99/41329 (43) International Publication Date: 19 August 1999 (19.08.99)
(21) International Application Number: PCT/US99/02380 (22) International Filing Date: 3 February 1999 (03.02.99) (30) Priority Data: ① 09/023,734 ✓ 13 February 1998 (13.02.98) ✓ US (71) Applicant: ① MOBIL OIL CORPORATION [US/US]; 3224 Gallow's Road, Fairfax, VA 22037 (US). (72) Inventors: ① BRADWAY, Robert, Allen; 16 Ashton, Drive, Voorhees, NJ 08043 (US); TSAO, Yingyen, P.; 723 S. Bryn Mawr Avenue, Bryn Mawr, PA 19010 (US). (74) Agents: PRATER, Penny, L. et al.; Mobil Oil Corporation, 3225 Gallow's Road, Fairfax, VA 22037 (US).		(81) Designated States: CA, IN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report. / 1 PD 1 appl ⁿ . 2 INVS. IPC : C10G 47/02, 47/00 65/00 etc. 1 PER 2/8/99

(54) Title: HYDROPROCESSING REACTOR AND PROCESS WITH LIQUID QUENCH**(57) Abstract**

A method and reactor system for catalytic hydrotreating and hydrocracking of liquid hydrocarbon feedstocks in order to produce a feedstock having a reduced contaminant level are disclosed. A feedstock (11) is introduced into a first reaction zone (18) of a reactor system (10) having a plurality of successive reaction zones, each having a hydroprocessing bed therein. Hydrogen gas (14) is introduced into the reactor system for flow through and over the catalyst beds in contact with the liquid in order to react with the feedstock producing an effluent. A stream having the same composition as the feedstock introduced into the first reaction zone is introduced into at least one quench stream downstream of the first reaction zone. Quench gas (42) is injected into each quench zone in an amount sufficient in combination with the effluent from the immediately upstream reaction zone to reduce the temperature of the effluent to a predetermined range. An effluent product (30) is recovered from the last reaction zone (28).

