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9906280-4
IP03



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: C07C 1/02	A1	(11) International Publication Number: WO 99/02471 (43) International Publication Date: 21 January 1999 (21.01.99)
(21) International Application Number: PCT/US98/12869 (22) International Filing Date: 18 June 1998 (18.06.98) (30) Priority Data: 08/888,680 7 July 1997 (07.07.97) US (71) Applicant: MOBIL OIL CORPORATION [US/US]; 3225 Gallows Road, Fairfax, VA 22037 (US). (72) Inventors: ^① KENNEDY, Clinton, Robert; 1116 St. Finegan Drive, West Chester, PA 19382 (US); ^② MARLER, David, Owen; 613 East Pleasant Grove Road, West Chester, PA 19382 (US); ^③ SHINNAR, Reuel; 110 Ash Drive, Great Neck, NY 11021 (US). (74) Agents: FURR, Robert, B., Jr. et al.; Mobil Oil Corporation, 3225 Gallows Road, Fairfax, VA 22037 (US).		(81) Designated States: AU, CA, CN, ID, JP, KR, MX, NO, NZ, SG, VN, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: PROCESS FOR HEAT INTEGRATION OF AN AUTOTHERMAL REFORMER AND COGENERATION POWER PLANT (57) Abstract A process for integration of an autothermal reforming unit and a cogeneration power plant in which the reforming unit has two communicating fluid beds. The first fluid bed is a reformer reactor containing inorganic metal oxide and which is used to react oxygen and light hydrocarbons at conditions sufficient to produce a mixture of synthesis gas, hydrogen, carbon monoxide, and carbon dioxide. The second fluid bed is a combustor-regenerator which receives spent inorganic metal oxide from the first fluid bed and which provides heat to heat the inorganic metal and balance the reaction endotherm, by combusting fuel gas in direct contact with the inorganic metal oxide producing hot flue gas. In preferred embodiments, steam is also fed to the reformer reactor and a catalyst may be used with the inorganic metal oxide. The cogeneration power plant has a gas turbine equipped with an air compressor and a combustor and in the integration a portion of compressed air is drawn off from the power plant gas turbine air compressor leaving remainder compressed air; the drawn off compressed air is introduced to the combustor-regenerator; the hot flue gas from the combustor-regenerator is mixed with the remainder of the compressed air to produce a recombined gas stream and this recombined gas stream is fed to the combustor of the cogeneration gas turbine power plant.		