

[12] Patent

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<p>[21] Application No.: GCC/P/2001/1346 [22] Filing Date: 05/05/2001 [30] Priority: [31] Priority No. [32] Priority date [33] State 09/565779 05/05/2000 US [72] Inventors: 1- Alaa Eldin M. Adris, 2- Fahad A. Al-Sherehy, 3- Mustafa Ali Suliman, 4- Tarique H. Abdulhakeem, 5- Shiekh MMJ Kareemuddin, 6- Abdullah A. Al-Nutaifi, 7- Munawwar A. Saudagar, 8- Shahid M. Azam [73] Owner: Saudi Basic Industries Corporation "SABIC", P.O. Box 5101, Riyadh 11422, Kingdom of Saudi Arabia</p>	<p>[51] Int.Cl.⁷: B01J 19/24, 8/06, 19/00, 8/24, 4/00, 19/26, 8/18 [56] Cited Documents: - EP 0330751 A (UHDE GMBH) 06 September 1989 - US 2518583 A (CHARLES C. WATSON) 15 August 1950 - US 3161683 A (JOHN E. CIOCCHETTI) 15 December 1964 - DE 19723322 A (BAYER AG) 10 December 1998 - US 2539415 A (PAUL W. GARBO) 30 January 1951 - GB 1530571 A (SUN VENTURES INC.) 01 November 1978 - US 2584391 A (FREDERICK W. LEFFER) 05 February 1952 - US 2786801 A (JOSEPH B. MCKINLEY et al.) 26 March 1957 - US 2809981 A (ALLEN R. KITTLESON et al.) 15 October 1957 - GB 754507 A (ESSO RESEARCH & ENGINEERING COMPANY) 08 August 1956 - US 2453740 A (SAM B. BECKER) 16 November 1948</p>

[54] AN APPARATUS FOR THE CONTROLLED OPTIMIZED ADDITION OF REACTANTS IN CONTINUOUS FLOW REACTION SYSTEMS AND METHODS OF USING THE SAME

[57] Abstract: An apparatus for performing continuous flow chemical reactions such as oxidation, oxidative dehydrogenation and partial oxidation processes involving a reactor design characterized by controlled/optimized addition of a reactant with the objective of: (i) avoiding the explosion regime of the reactant mixture (e.g., hydrocarbon/oxidant mixture); (ii) maximizing the selectivity of the reaction to the desired product; (iii) limiting the reactor temperature gradient and therefore the threat of reaction runaway; and (iv) controlling the operating temperature of the reaction zone so that desirable temperature range is maintained over the entire zone.

No. of claims: 21

No. of figures: 13

