

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B01J 8/44, 8/22, C10G 2/00	A1	(11) International Publication Number: WO 99/20385 (43) International Publication Date: 29 April 1999 (29.04.99)
(21) International Application Number: PCT/US98/21590 (22) International Filing Date: 14 October 1998 (14.10.98) (30) Priority Data: 08/955,130 21 October 1997 (21.10.97) US (71) Applicant: EXXON RESEARCH AND ENGINEERING COMPANY [US/US]; 180 Park Avenue, P.O. Box 390, Florham Park, NJ 07932-0390 (US). (72) Inventors: CHANG, Min; 4 Quail Run, Warren, NJ 07059 (US). COULALOGLOU, Constantine, A.; 20 Coventry Road, Mendham, NJ 07945 (US). HSU, Edward, C.; 316 Eileen Way, Bridgewater, NJ 08807 (US). (74) Agents: SIMON, Jay et al.; Exxon Research and Engineering Company, P.O. Box 390, Florham Park, NJ 07932-0390 (US).	(81) Designated States: AU, BR, CA, JP, KR, MX, NO, 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. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	

(54) Title: THROAT AND CONE GAS INJECTOR AND GAS DISTRIBUTION GRID FOR SLURRY REACTOR

(57) Abstract

A gas distribution grid (106) for a slurry reactor includes a plurality of gas injectors (10) horizontally arrayed across, and extending through, an otherwise gas and liquid impervious plate (82). The injectors (10) have a throat (20) open at both ends, with a gas pressure reducing bore (14) at one end which is the entrance end and with the other end opening into an upward opening cone (30). Flow diverting means (26) in the injectors prevents slurry solids from entering the throat (20) and being attrited by the high velocity gas jet exiting the bore (14) into the throat (20). It is preferred that the gas injectors not protrude above the top surface of the grid and flat space is eliminated by means such as angular fillers (94), to prevent solids accumulation top of the grid. A chamfer (13) may be present at the junction of the bore and throat to prevent unrestricted expansion of the gas jet entering the throat. This is useful for injecting gas into a reactive hydrocarbon synthesis slurry in a slurry reactor, with reduced catalyst attrition and deactivation.

