



[12] Patent

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[21] Application No.: GCC/P/2001/1169 [22] Filing Date: 06/02/2001 [72] Inventors: 1- Michael Whysall, 2- Ludovicus J. M. Wagemans [73] Owner: UOP LLC, 25 East Algonquin Road, Des Plaines, Illinois 60017-5017, USA [74] Agent: Nassir Ali Kadasa	[51] Int. Cl. ⁷ : B01D 53/047 [56] Cited Documents: - EP 0305663 A1 (UNION CARBIDE CORP.) 08 March 1989 - US 4475929 A (FUDERER, A.) 09 October 1984 - US 3738087 A (MC COMBS, N.R.) 12 June 1973 - US 4129424 A (ARMOND, J.W.) 12 December 1978 - EP 0324171 A2 (UNION CARBIDE CORP.) 19 July 1989 - JP 62-273026 A (MITSUBISHI HEAVY IND. LTD.) 27 November 1987

[54] VERY LARGE-SCALE PRESSURE SWING ADSORPTION PROCESSES

[57] Abstract: A process which overcomes limitations to the capacity of PSA units for a wide variety of gas separations by achieving capacities in excess of about 110 thousand normal cubic meters per hour (100 million standard cubic feet per day) in a single integrated process train and departs from the practice of using a purge step equal to or less than the duration of the adsorption step. By increasing the purge time relative to the adsorption step combined with supplying the purge gas for any adsorption bed in the train from one or more other adsorption beds and during the provide-purge step, the other adsorbent beds simultaneously provide the purge gas to essentially all adsorbent beds undergoing the purge step and the single train can provide for significant increases in capacity with a minimum loss in recovery or performance.

No. of claims: 8