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(71) Applicant (for all designated States except US): **EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GUPTA, Ramesh** [US/US]; 57 Lawrence Drive, Berkley Heights, NJ 07922 (US). **DECKMAN, Harry W.** [US/US]; 2 Woods Edge Court, Clinton, NJ 08809 (US). **LETA, Daniel P.** [US/US]; 15 Rustic Trail, Flemington, NJ 08822 (US).

(74) Agents: **PURWIN, Paul E.** et al.; Exxonmobil Research and Engineering Company, 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

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(54) Title: GAS PURIFICATION PROCESS UTILIZING ENGINEERED SMALL PARTICLE ADSORBENTS

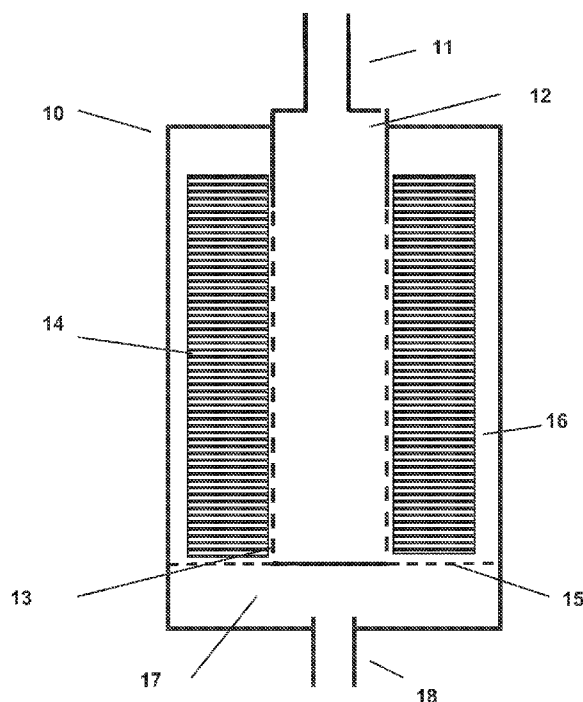


Figure 1

(57) Abstract: A gas separation process uses a structured particulate bed of adsorbent coated shapes/particles laid down in the bed in an ordered manner to simulate a monolith by providing longitudinally extensive gas passages by which the gas mixture to be separated can access the adsorbent material along the length of the particles. The particles can be laid down either directly in the bed or in locally structured packages/bundles which themselves are similarly oriented such that the bed particles behave similarly to a monolith but without at least some disadvantages. The adsorbent particles can be formed with a solid, non-porous core with the adsorbent formed as a thin, adherent coating on the exposed exterior surface. Particles may be formed as cylinders/hollow shapes to provide ready access to the adsorbent. The separation may be operated as a kinetic or equilibrium controlled process.



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