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(71) Applicant (for all designated States except US): **CONOCOPHILLIPS ENERGY TECHNOLOGIES LLC** [US/US]; 600 N. DAIRY ASHFORD, MI 2112, Houston, TX 77079 (US).

(71) Applicants and

(72) Inventors: **GRIMES, Patrick G.** [US/US]; 2411 Hill Road, Scotch Plains, NJ 07066 (US). **BELLOWS, Richard J.** [US/US]; 208 Cypress Drive, Woodland, CA 95695 (US).

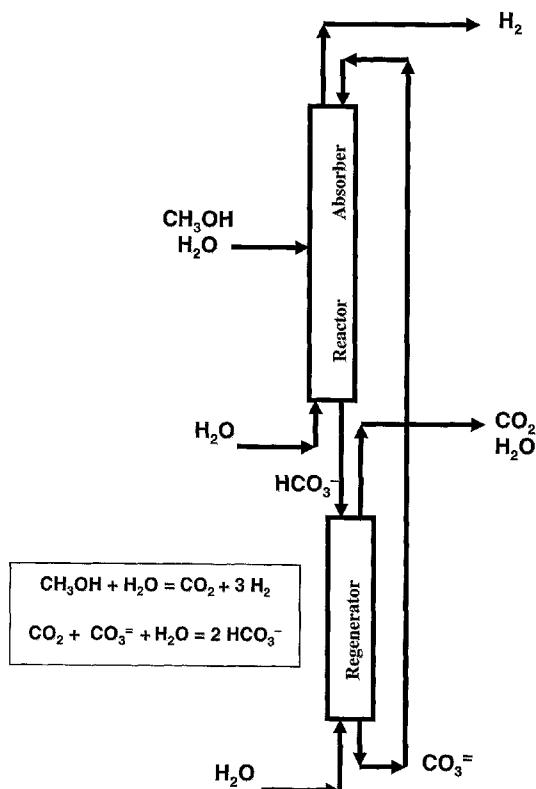
(74) Agents: **COHEN, Harvey L.** et al.; LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP, 600 South Avenue West, Westfield, NJ 07090 (US).

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(54) Title: HYDROGEN PRODUCTION USING ELECTROCHEMICAL REFORMING AND ELECTROLYTE REGENERATION



(57) Abstract: A process, preferably continuous, for producing hydrogen gas comprising contacting in the liquid phase at least one oxidizable organic substance in the presence of a mixture comprising at least one conductive catalyst and an aqueous alkaline carbonate electrolyte, wherein at least one bicarbonate composition produced by reaction of the electrolyte is regenerated and the at least one oxidizable organic substance comprises an oxygenated hydrocarbon, for example methanol and/or dimethyl ether. In a preferred embodiment the alkaline electrolyte is regenerated using steam. Various advantageous reaction schemes are described, utilizing, e.g., co-current and countercurrent stream flow and alternative tower sequence arrangements.



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