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61/702,620 18 September 2012 (18.09.2012) US(71) Applicants: **EXXONMOBIL UPSTREAM RESEARCH COMPANY** [US/US]; P. O. Box 2189, (CORP-URC-SW359), Houston, TX 77252-2189 (US). **SOLID CARBON PRODUCTS LLC** [US/US]; 1959 North 1450 East, Provo, UT 84604-5718 (US).

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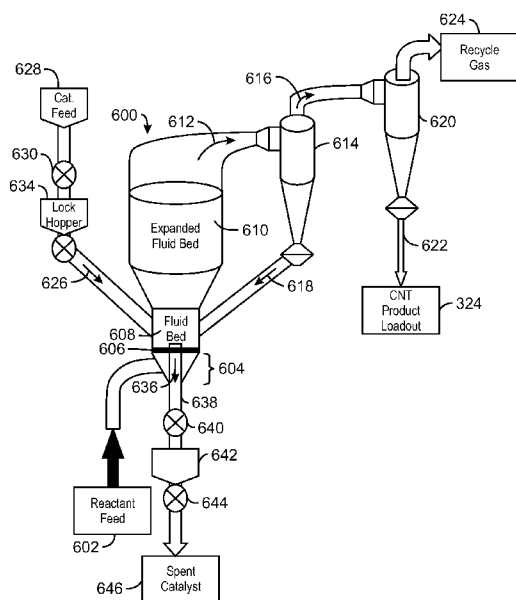
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(54) Title: REACTOR SYSTEM FOR THE PRODUCTION OF CARBON ALLOTROPES



(57) Abstract: Systems and a method for forming carbon allotropes are described. An exemplary reactor system for the production of carbon allotropes includes a hybrid reactor configured to form carbon allotropes from a reactant gas mixture in a Bosch reaction. The hybrid reactor includes at least two distinct zones that perform different functions including reaction, attrition, catalyst separation, or gas separation.

FIG. 6

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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