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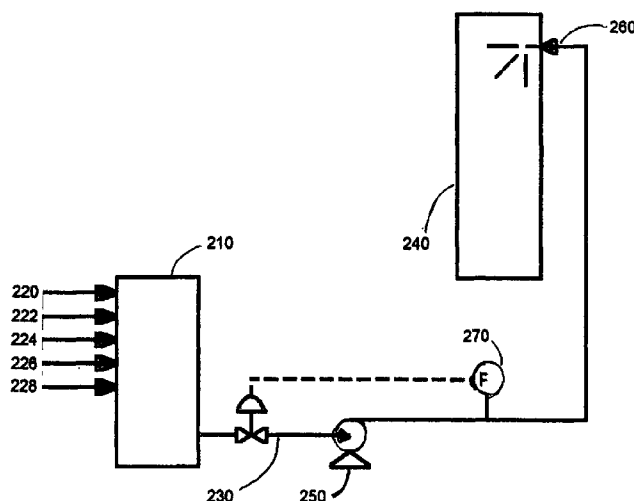
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(54) **Title:** SELECTIVE CRACKING AND COKING OF UNDESIRABLE COMPONENTS IN COKER RECYCLE AND GAS OILS



(57) **Abstract:** Undesirable gas oil components are selectively cracked or coked in a coking vessel by injecting an additive into the vapors of traditional coking processes in the coking vessel prior to fractionation. The additive contains catalyst(s), seeding agent(s), excess reactant(s), quenching agent(s), carrier(s), or any combination thereof to modify reaction kinetics to preferentially crack or coke these undesirable components that typically have a high propensity to coke. Exemplary embodiments of the present invention also provide methods to control the (1) coke crystalline structure and (2) the quantity and quality of volatile combustible materials (VCMs) in the resulting coke. That is, by varying the quantity and quality of the catalyst, seeding agent, and/or excess reactant the process may affect the quality and quantity of the coke produced, particularly with respect to the crystalline structure (or morphology) of the coke and the quantity & quality of the VCMs in the coke.



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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - C10G 9/14 (2008.01) USPC - 208/131 According to International Patent Classification (IPC) or to both national classification and IPC		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Searched US Pre-grant Publications, US Patent Full-Text, EPO Abstract, JPO Abstract, Google Internet and Google Scholar databases for: coke drum, inject, catalyst, additive, crack, drum, heavy aromatic, seed, calcin, anode, binder, carbonium, entrainment, particle, residence time, upheal, catalyst.		
C DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X --- Y	US 2002/0032788 A1 (ETTER) 16 February 2006 (16.02.2006), entire document, especially para [0017], [0027], [0034], [0037], [0072], [0101], [01 11], [0130], [0289], [0318], [0337], [0348], [0358], [0362], [0381], [0502], [0505], [0506], [0535], [0547], [0552], [0559], [0581], [0594], Fig. 9.	1-3, 5, 6, 10-25, 29-31, 34 ----- 4, 7-9, 26-28, 32-33, 35-36
Y	US 6,251,307 B1 (LECOURS et al.) 26 June 2001 (26.06.2001) col 1, ln 33-34 - col 2, ln 50 - col 5, ln 67 - col 6, ln 1-2.	26-28
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Y	US 5,174,891 A (BECRAFT) 29 December 1992 (29.12.1992) col 2, ln 29-31 .	9
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