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(71) Applicant (for all designated States except US):
CHEVRON U.S.A. INC. [US/US]; 6001 Bollinger
 Canyon Road, San Ramon, CA 94583 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HOMMELTOFT,**
Sven, Ivar [DK/US]; 1708 Millburn Drive, Pleasant Hill,
 CA 94523 (US). **ZHOU, Zhen** [CN/US]; 4 Commodore
 Drive D233, Emeryville, CA 94608 (US).

(74) Agents: **ABERNATHY, Susan, M.** et al.; Chevron Cor-
 poration, Law Department, Post Office Box 6006, San
 Ramon, CA 94583-0806 (US).

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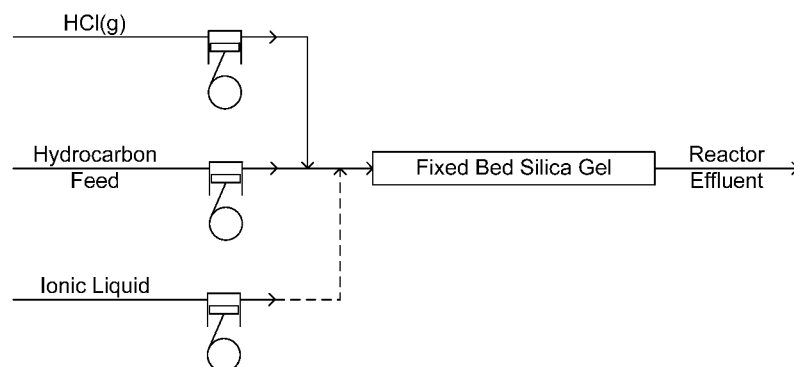
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FIGURE 1



(57) Abstract: A process, comprising: a) introducing an acidic ionic liquid to a reactor comprising a solid support; b) feeding to the reactor a feed stream comprising a Brnsted acid and a hydrocarbon mixture comprising: i. at least one alkylatable hydrocarbon, and ii. at least one alkylating agent; and c) collecting one or more liquid hydrocarbon products in an effluent from the reactor, wherein the one or more liquid hydrocarbon products are oligomer products, alkylate products, or mixtures thereof, made from the alkylatable hydrocarbon. Also, a process, comprising: a) introducing an acidic ionic liquid to a reactor comprising a solid support; b) feeding to the reactor a feed stream comprising a Brnsted acid and a hydrocarbon mixture; c) cooling the reactor by evaporating a volatile hydrocarbon from a reaction zone in the reactor; and d) collecting one or more liquid hydrocarbon products made from the hydrocarbon mixture.