

Search history

Search 1: SFT=(Ebullated bed reactor) (Results 488)
Search 2: feedstock (Results 85462)
Search 3: hydroprocessing system (Results 139)
Search 4: heterogeneous catalyst (Results 9695)
Search 5: 1 and 2 (Results 315)
Search 6: 5 and 3 (Results 18)
Search 7: 6 and 4 (Results 8)
Search 8: 7 and pd<20150922 (Results 3)

Title: EBULLATED BED HYDROPROCESSING METHODS AND SYSTEMS AND METHODS OF UPGRADING AN EXISTING EBULLATED BED SYSTEM

Abstract: An ebullated bed **hydroprocessing system**, and also a method for upgrading a pre-existing ebullated bed **hydroprocessing system**, involves introducing a colloidal or molecular catalyst, or a precursor composition capable of forming the colloidal or molecular catalyst, into an **ebullated bed reactor**. The colloidal or molecular catalyst is formed by intimately mixing a catalyst precursor composition into a heavy oil **feedstock** and raising the temperature of the **feedstock** to above the decomposition temperature of the precursor composition to form the colloidal or molecular catalyst in situ. The improved ebullated bed **hydroprocessing system** includes at least one **ebullated bed reactor** that employs both a porous supported catalyst and the colloidal or molecular catalyst to catalyze hydroprocessing reactions involving the **feedstock** and hydrogen. The colloidal or molecular catalyst provides catalyst in what would otherwise constitute catalyst free zones within the ebullated bed **hydroprocessing system**. Asphaltene or other hydrocarbon molecules too large to diffuse into the pores of the supported catalyst can be upgraded by the colloidal or molecular catalyst. A slurry phase reactor may be positioned upstream from one or more **ebullated bed reactors** or converted from a pre-existing **ebullated bed reactor**.

Classifications:

International (IPC 8-9): B01F13/00 B01F15/02 B01F15/04 B01F3/14 B01F5/06 B01J19/00 B01J27/047 B01J27/051 B01J35/00 B01J37/00 B01J37/02 B01J37/04 B01J37/08 B01J37/20 B01J38/00 B01J38/68 B01J8/00 B01J8/08 B01J8/18 B01J8/20 B01J8/22 C10C1/00 C10G11/00 C10G45/00 C10G45/04 C10G45/16 C10G45/34 C10G45/46 C10G45/56 C10G47/00 C10G47/02 C10G47/06 C10G47/24 C10G47/26 C10G47/30 C10G49/00 C10G49/04 C10G49/10 C10G49/12 C10G49/16 C10G65/00 C10G65/02 C10G65/10 C10G65/12 C10G67/08 G01S19/06 G01S19/12 G01S19/46 H04W64/00 (Advanced/Invention); B01J38/68 C10G47/02 C10G47/26 C10G65/02 (Advanced/Non-invention); C10G45/00 C10G47/00 (Core/Invention)

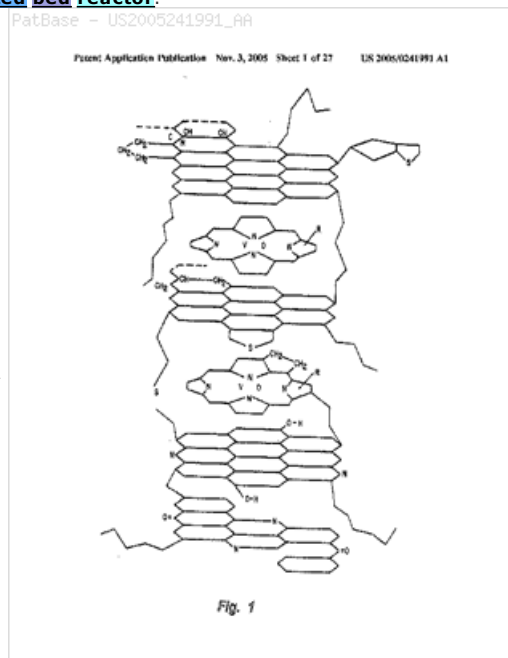
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US: 208/100 208/108 208/108P 208/108S 208/109 208/110 208/111 208/111.3 208/112 208/112P 208/211 208/213 208/222 208/420 208/421 208/48.00RP 208/48R 208/59 208/89 208/90 208/97 366/141 366/141P 366/190 366/190S 366/336 366/336S 366/342 366/342S 422/129 422/129S 422/140 422/140S 422/187 422/187P 422/190 422/224 422/224S 422/225 422/225S 422/606 422/631 422/646 422/649

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Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: HEADWATERS HEAVY OIL LLC

Assignee(s): (std): HEADWATERS TECH INNOVATION LLC ; LEE LAP KEUNG ; HEADWATERS HEAVY OIL LLC ; KHEDUOTERS KHEHVI OJL LLS ; KHEHDUOTERS KHEHVI OJL EHLEHLSI ; HYDROCARBON TECH AND INNOVATION LLC ; LOTT ROGER K ; QUALCOMM INC

Assignee(s): LOTT ROGER K10819-18 AVENUEEDMONTONA1T6J 6P2CA ; TAPCO INT A MICHIGAN CORP ; TAPCO INT CORP ; DEUTSCHE BANK NEW YORK BRANCH ADMINISTRATIVE AGENT AG AS ; WILMINGTON TRUST FSB COLLATERAL AGENT AS ; HEADWATERS HEAVY OIL LLC A UTAH CORP ; HEADWATERS HEAVY OIL LLC SOUTH JORDAN ; HEADWATERS HEAVY OIL LLC300 - 10653 SOUTH RIVER FRONT PARKWAYSOUTH JORDANUT84095US ; HEADWATERS TECHNOLOGY INNOVATION LLC ; HEADWATERS INC GRANTOR AS ; HEADWATERS RESOURCES INC A UTAH CORP ; HEADWATERS TECHNOLOGY INNOVATION GROUP INC A UTAH CORP ; HEADWATERS INC ; HEADWATERS RESOURCES INC ; HYDROCARBON TECHNOLOGY AND INNOVATION LLC

Inventor(s): (std): LOTT ROGER K ; LEE LAP KEUNG ; ROGER K LOTT ; THOMAS K ROWLAND ; LALITAPRASAD V DAITA ; MARC ICHER ; LOTT RODZHER K ; LI LAP KEUNG ; LOTT ROGER ; KEUNG LOTT ROGER K LEE LAP

Inventor(s): LAP KEUNG LEE ; LOTT ROGER K EDMONTON ; LOTT ROGER K10819-18 AVENUEEDMONTONA1T6J 6P2CA ; LEE LAP KEUNGUS ; LEE LAP KEUNG WEST WINDSOR ; LI LAP-KEUNG

Agent(s): CASSAN MACLEAN; SMART AND BIGGAR; CASSAN MACLEAN IP AGENCY INC; ADAM HOLGER; ADAM HOLGER ET AL; LEHMANN MARIA ISABEL; SULEIMAN I AL AMMAR LAW OFFICE; WORKMAN NYDEGGER, (F/K/A WORKMAN NYDEGGER AND SEELEY); WORKMAN NYDEGGER F K A WORKMAN NYDEGGER AND SEELEY; WORKMAN NYDEGGER; WORKMAN NYDEGGER,1000 EAGLE GATE TOWER; WORKMAN NYDEGGER 1000 EAGLE GATE TOWER

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Title: FIXED BED HYDROPROCESSING METHODS AND SYSTEMS AND METHODS FOR UPGRADING AN EXISTING FIXED BED SYSTEM

Abstract: A fixed bed **hydroprocessing system**, and also a method for upgrading a pre-existing fixed bed **hydroprocessing system**, involves preliminarily upgrading a heavy oil **feedstock** in one or more slurry phase reactors using a colloidal or molecular catalyst and then further hydroprocessing the upgraded **feedstock** within one or more fixed bed reactors using a porous supported catalyst. The colloidal or molecular catalyst is formed by intimately mixing a catalyst precursor composition into a heavy oil **feedstock** and raising the temperature of the **feedstock** to above the decomposition temperature of the precursor composition to form the colloidal or molecular catalyst in situ. Asphaltene or other hydrocarbon molecules otherwise too large to diffuse into the pores of the fixed bed catalyst can be upgraded by the colloidal or molecular catalyst. One or more slurry phase reactors may be built and positioned upstream from one or more fixed bed reactors of a pre-existing fixed bed system and/or converted from one or more pre-existing fixed bed reactors.

Classifications:

International (IPC 8-9): A61K39/12 B01J27/047 B01J27/051 B01J35/00 B01J37/02 B01J37/04 B01J37/08 B01J38/00 B01J8/00 B01J8/02 C07K14/025 C10G45/00 C10G45/16 C10G47/00 C10G47/02 C10G47/26 C10G49/04 C10G65/02 C10G65/04 C10G65/12 (Advanced/Invention); B01J38/68 C10G47/02 C10G47/26 C10G65/04 (Advanced/Non-invention); B01J8/00 (Core/Invention)

International (IPC 1-7): B01J8/00 B01J8/02 C10G45/00 C10G45/16 C10G47/00 C10G47/02 C10G47/26 C10G65/04 C10G65/12

CPC: B01J27/047 B01J27/051 B01J35/0013 B01J37/02 B01J37/086 B01J38/00 B01J38/68 C10G45/00 C10G47/00 C10G49/04 C10G65/02 C10G65/12

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US: 208/108 208/213

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JP F-Index: B01J27/051/M B01J37/04/102 B01J37/08 C10G47/02

PatBase - US2005241992_AA

Patent Application Publication Nov. 3, 2005 Sheet 1 of 26 US 2005/0241992 A1

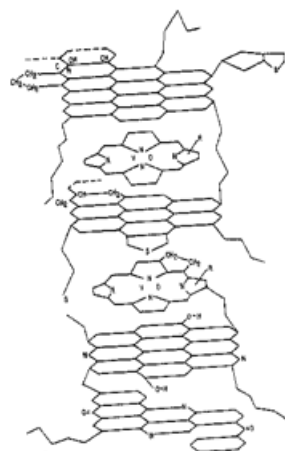


Fig. 1

Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: HYDROCARBON TECHNOLOGY AND INNOVATION LLC

Assignee(s): (std): LOTT ROGER K ; LEE LAP KEUNG ; QUINN PETER C ; KHEDUOTERS KHEHVI OJL LLS ; HEADWATERS HEAVY OIL LLC ; HYDROCARBON TECH AND INNOVATION LLC

Assignee(s): HYDROCARBON TECHNOLOGY INNOVATION LLC ; WILMINGTON TRUST FSB COLLATERAL AGENT AS ; DEUTSCHE BANK NEW YORK BRANCH ADMINISTRATIVE AGENT AG AS ; HEADWATERS HEAVY OIL LLC A UTAH CORP ; HEADWATERS INC ; HEADWATERS INC GRANTOR AS ; HEADWATERS RESOURCES INC A

UTAH CORP ; HEADWATERS TECHNOLOGY INNOVATION GROUP INC A UTAH CORP ; TAPCO INT A
MICHIGAN CORP ; HEADWATERS RESOURCES INC ; TAPCO INT CORP ; HYDROCARBON TECHNOLOGY AND
INNOVATION LLC

Inventor(s): (std): LOTT ROGER K ; LEE LAP KEUNG ; QUINN PETER C ; LOTT ROGER K LEE LAP KEUNG QUI ; LOTT RODZHER K
; KUINN PITER K ; LI LAP KEUNG

Inventor(s): PETER C QUINN ; LAP KEUNG LEE ; ROGER K LOTT ; LI LAP-KEUNG ; LOTT ROGER ; QUINN PETER ; LOTT
ROGER K LEE LAP KEUNG QUINN PETER C

Agent(s): CASSAN MACLEAN; CASSAN MACLEAN IP AGENCY INC; ADAM HOLGER; CARPINTERO MARIO; YESIM
METIN; WORKMAN NYDEGGER, (F/K/A WORKMAN NYDEGGER AND SEELEY); WORKMAN NYDEGGER F K A
WORKMAN NYDEGGER AND SEELEY; WORKMAN NYDEGGER

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK
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KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO
RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: METHODS AND SYSTEMS FOR UPGRADING HEAVY OIL USING CATALYTIC HYDROCRACKING AND THERMAL COKING

Abstract: Methods and systems for hydroprocessing heavy oil **feedstocks** to form upgraded material use a colloidal or molecular catalyst dispersed within heavy oil **feedstock**, pre-coking hydrocracking reactor, separator, and coking reactor. The colloidal or molecular catalyst promotes upgrading reactions that reduce the quantity of asphaltenes or other coke forming precursors in the **feedstock**, increase hydrogen to carbon ratio in the upgraded material, and decrease boiling points of hydrocarbons in the upgraded material. The methods and systems can be used to upgrade vacuum tower bottoms and other low grade heavy oil **feedstocks**. The result is one or more of increased conversion level and yield, improved quality of upgraded hydrocarbons, reduced coke formation, reduced equipment fouling, processing of a wider range of lower quality **feedstocks**, and more efficient use of supported catalyst if used with the colloidal or molecular catalyst, as compared to a conventional hydrocracking process or a conventional thermal coking process.

Classifications:

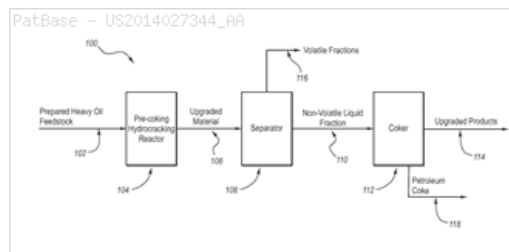
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CPC: C10G69/06 B01J23/28 B01J27/043 B01J27/047 B01J27/051 B01J35/026 B01J35/108 B01J35/109 B01J37/04 B01J37/086 B01J37/20 C10B55/00 C10B57/045 C10G9/005 C10G47/12 C10G2300/206

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Probable Assignee: HEADWATERS HEAVY OIL LLC

Assignee(s): (std): GENDLER JEFFREY ; HARRIS EVERETTE ; HEADWATERS HEAVY OIL LLC ; HEADWATERS TECH INNOVATION LLC

Assignee(s): HEADWATERS INC ; HEADWATERS RESOURCES INC ; TAPCO INT CORP ; HYDROCARBON TECHNOLOGY AND INNOVATION LLC ; HEADWATERS TECHNOLOGY INNOVATION LLC ; DEUTSCHE BANK NEW YORK BRANCH ADMINISTRATIVE AGENT AG AS

Inventor(s): (std): GENDLER JEFFREY ; HARRIS EVERETTE

Agent(s): CASSAN MACLEAN; CASSAN MACLEAN IP AGENCY INC; TANI AND ABE PC; WORKMAN NYDEGGER; GUYNN JOHN M ET AL

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