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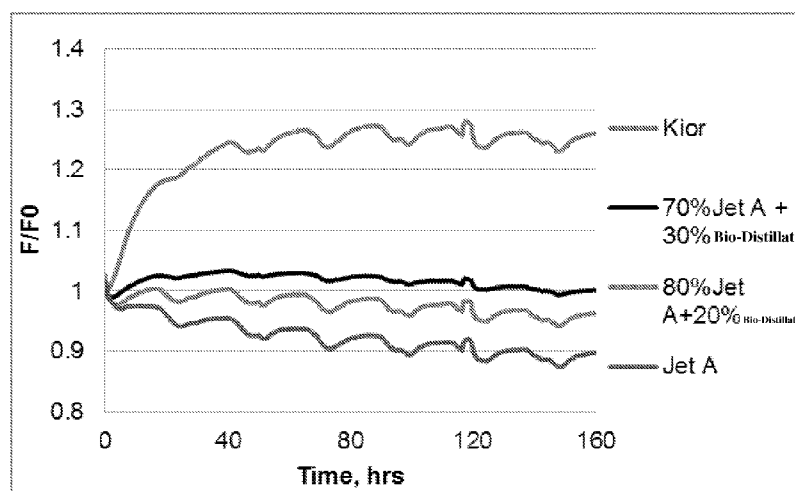
- with international search report (Art. 21(3))
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(54) Title: RENEWABLE FUEL COMPOSITION AND METHOD OF USING THE SAME

FIG. 1



(57) Abstract: Disclosed is an alternative fuel composition derived from the conversion of biomass at an elevated temperature, with conversion optionally in the presence of a catalyst, which is capable of reducing, and thereby improving, a low temperature property of a distillate. A process is also disclosed for mixing such renewable composition with the distillate.

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER INV. C10L1/00 C10L1/04 C10L1/06 C10L1/08 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) C10L		
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) EPO-Internal, COMPENDEX, INSPEC, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y Y A	US 2009/301930 A1 (BRANDVOLD TIMOTHY A [US] ET AL) 10 December 2009 (2009-12-10) abstract paragraphs [0015] - [0019], [0024], [0025], [0027] - [0029], [0035], [0040], [0041], [0057] - [0063], [0066] - [0069], [0080] - [0086] ----- GB 2 399 571 A (CHEVRON USA INC [US]) 22 September 2004 (2004-09-22) abstract paragraphs [0001] - [0006], [0017], [0074] - [0080] ----- US 2009/234030 A1 (GOUMAN RUDOLF ROBERT [NL] ET AL) 17 September 2009 (2009-09-17) paragraphs [0001] - [0003] ----- -/-	1-22, 25-34 22-24, 34-36 22-24, 34-36 1-36
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Keipert, Olaf	

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2010/002886 A1 (KIOR INC [NL]; O'CONNOR PAUL [NL]; YANIK STEVE [US]) 7 January 2010 (2010-01-07) the whole document -----	1-36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/044955

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-36

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-36

Distillate fuels comprising: a) an aromatic-lean component selected from the group consisting of: (i) a renewable distillate produced by a Fischer-Tropsch process; (ii) a non-renewable distillate produced by a Fischer-Tropsch process; and (iii) a renewable component of a hydroprocessed/hydrotreated triglyceride or triglyceride derived fatty acid alkyl ester; and b) an aromatic-rich component comprising an at least partially hydrotreated bio-distillate fraction produced from the conversion of biomass at an elevated temperature. Methods of dispensing fuel into an internal combustion engine through dispensing equipment having an elastomeric seal, the methods comprising introducing into the engine a fuel comprising distillate mixtures as defined above.

2. claims: 37-52

A distillate mixture comprising: a) a first component selected from the group consisting of: a petroleum distillate, distillate range hydrocarbons produced by a Fischer-Tropsch process, and mixtures thereof, said first component having a low temperature property; and b) a second component comprising an at least partially hydrotreated bio-distillate fraction produced from the conversion of biomass at an elevated temperature; wherein said distillate mixture has a low temperature property which is improved as compared to the low temperature property of said first component.

3. claims: 53-69

Bio-distillate compositions boiling in the range of from about 320 to about 700°F, the compositions being characterised by their content of cycloparaffins; wherein said bio-distillate compositions have been at least partially hydrotreated.

4. claims: 70-83

A low temperature property improving composition comprising a bio-distillate fraction produced from the thermo-catalytic conversion of a biomass, wherein said bio-distillate fraction has been at least partially hydrotreated; and wherein said low temperature property improving composition is capable of improving a low temperature property value of a distillate component selected from the group consisting of: a petroleum distillate, distillate range hydrocarbons produced by a Fischer-Tropsch process, and mixtures thereof.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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