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(71) Applicant (for all designated States except US): **ENERGY & ENVIRONMENTAL RESEARCH CENTER FOUNDATION** [US/US]; 15 North 23rd Street, Stop 9017, Grand Forks, North Dakota 58202-9017 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **OLSON, Edwin S.** [US/US]; 223 Circle Hills Drive, Grand Forks, North Dakota 58201 (US).

(74) Agents: **WESTBY, Timothy S.** et al.; CONLEY ROSE, P.C., P. O. Box 3267, Houston, Texas 77253-3267 (US).

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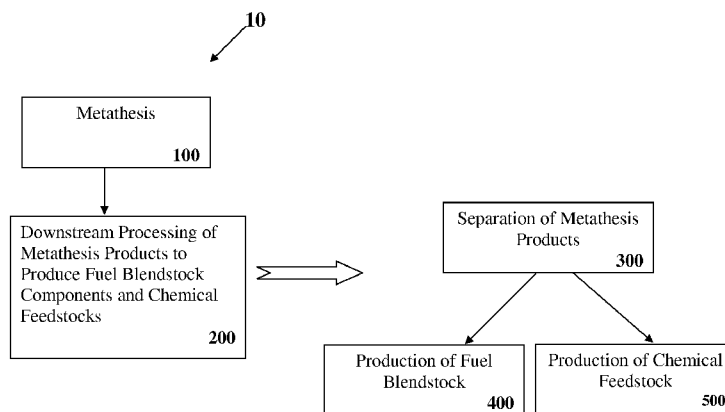


FIG. 1

(57) Abstract: A method comprising providing a starting composition comprising a polyunsaturated fatty acid, a polyunsaturated fatty ester, a carboxylate salt of a polyunsaturated fatty acid, a polyunsaturated triglyceride, or a mixture thereof; self-metathesizing the starting composition or cross-metathesizing the starting composition with at least one short-chain olefin in the presence of a metathesis catalyst to form self-/cross-metathesis products comprising: cyclohexadiene; an olefin; and one or more acid-, ester-, or salt-functionalized alkene; and reacting cyclohexadiene to produce a cycloalkane or cycloalkane derivatives. A method for producing cycloalkanes for jet fuel by providing a starting composition comprising at least one selected from the group consisting of algal and polyunsaturated vegetable oils, subjecting the starting composition to metathesis to produce metathesis product comprising an olefin, cyclohexadiene, and an acid-, ester-, or salt-functionalized alkene, and reacting the olefin and cyclohexadiene to form cycloalkane(s).



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A. CLASSIFICATION OF SUBJECT MATTER*C07C 1/20(2006.01)i, C07C 13/00(2006.01)i, C07C 255/46(2006.01)i, C07C 61/09(2006.01)i, C10L 1/04(2006.01)i*

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)

C07C 1/20; C11C 3/02; C07C 5/22; C07C 67/347

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)
eKOMPASS(KIPO internal), Google scholar & Keywords: polyunsaturated fatty acid, metathesis, cyclohexadiene, olefin.**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 4,545,941 A1 (ROSENBERG; DALE W.) 08 October 1985 See the whole document | 1-19 |
| A | US 2007-0270621 A1 (JAMES MILLIS et al.) 22 November 2007 See the whole document | 1-19 |
| A | KR 10-2003-0086323 A (DOW GLOBAL TECHNOLOGIES INC.) 07 November 2003 See the whole document | 1-19 |
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 Further documents are listed in the continuation of Box C. See patent family annex.

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