Abstract:
The presently disclosed subject matter provides methods of oxidative conversion of variable hydrocarbon feed to C2-C3 olefins, syngas, low molecular weight paraffinic hydrocarbons and aromatic hydrocarbons. In certain embodiments, the hydrocarbon feed can be combined with an oxygen source and carbon dioxide within a reactor including a catalyst to generate one or more of olefins, aromatic hydrocarbons, C2-C3 paraffinic hydrocarbons, linear hydrocarbons greater than C4, and syngas. Any C2-C3 paraffinic hydrocarbons and/or linear hydrocarbons greater than C4 can be returned to the hydrocarbon feed.
**INTERNATIONAL SEARCH REPORT**

**International application No.**
PCT/IB2016/056875

A. **CLASSIFICATION OF SUBJECT MATTER**
- IPC(8) - C10G 35/04; C10G 35/06; C10G 35/09; C10G 59/04 (2017.01)
- CPC - C10G 35/04; C10G 35/06; C10G 35/09; C10G 59/04 (2017.02)

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)

Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

See Search History document

C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>GB 853,596 A (BADISCHE ANILIN &amp; SODA-FABRIK AKTIENGESELLSCHAFT) 09 November 1960 (09.11.1960) entire document</td>
<td>1-17</td>
</tr>
<tr>
<td>A</td>
<td>US 4,384,948 A (BARGER) 24 May 1983 (24.05.1983) entire document</td>
<td>1-17</td>
</tr>
</tbody>
</table>

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
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  - "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 claiming

"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

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"&" document member of the same patent family

Date of the actual completion of the international search

17 April 2017

Date of mailing of the international search report

05 MAY 2017

Name and mailing address of the ISA/US

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PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (January 2015)