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(54) Title: CATALYSTS, SYSTEMS AND METHODS OF STEAM REFORMING, AND METHODS OF MAKING STEAM REFORMING CATALYSTS

(57) Abstract: The present invention provides catalysts, reactors, and methods of steam reforming over a catalyst. Surprisingly superior results and properties obtained in methods and catalysts of the present invention are also described. For example, a coated catalyst was demonstrated to be highly stable under steam reforming conditions (high temperature and high pressure of steam). Methods of making steam reforming catalysts are also described.



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# INTERNATIONAL SEARCH REPORT

Internation No  
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|---|---|-----------------------|
| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>IPC 7 C01B3/38 C01B3/40 H01M8/06 B01J19/00 B01J21/00<br>B01J23/00 B01J23/40 B01J37/10   |   |                       |
| According to International Patent Classification (IPC) or to both national classification and IPC   |   |                       |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>IPC 7 C01B H01M B01J  |   |                       |
| 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 practical, search terms used)<br><br>EPO-Internal  |   |                       |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |   |                       |
| Category °  | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
| X   | US 2003/017105 A1 (WANG YONG ET AL)<br>23 January 2003 (2003-01-23)<br>cited in the application<br>paragraphs '0039!, '0043!; claims<br>12-15,17; tables<br>paragraphs '0046! - '0049!<br>-----   | 1-38                  |
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| <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.  |   |                       |
| <input checked="" type="checkbox"/> Patent family members are listed in annex.  |   |                       |
| ° Special categories of cited documents :   |   |                       |
| *A* document defining the general state of the art which is not considered to be of particular relevance<br>*E* earlier document but published on or after the international filing date<br>*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)<br>*O* document referring to an oral disclosure, use, exhibition or other means<br>*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<br>*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<br>*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.<br>*&* document member of the same patent family |                       |
| Date of the actual completion of the international search   | Date of mailing of the international search report  |                       |
| 9 December 2004   | 27/12/2004  |                       |
| Name and mailing address of the ISA   | Authorized officer  |                       |
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016   | Holzwarth, A  |                       |

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
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