**Abstract**

Surface-modified zeolites and methods for preparing the same.
— with international search report (Art. 21(3))
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
# INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

*C01B 39/02(2006.01)i; B01J 20/18(2006.01)i; B01J 29/06(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)

*C01B 39/02; C07C 5/22; C01B 39/66; C07C 2/66; B01J 21/00; B01J 29/04*

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

- Korean utility models and applications for utility models
- Japanese utility models and applications for utility models

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

eKOMPASS (KIPO internal) & Keywords: zeolite, hybrid polymer, external surface, seleetivation, silicon alkoxide, metal alkoxide

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>A</td>
<td>US 2008-0050308 A1 (WALTER VERMEIREN et al.) 28 February 2008 &lt;br&gt;See abstract: paragraphs [0080], [0086]: claims 1, 3-5, 9</td>
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<td>A</td>
<td>NO 2008-005264 A2 (KATHOLIEKE UNIVERSITEIT LEUVEN) 14 August 2008 &lt;br&gt;See abstract, claims 1, 9, 12</td>
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<td>A</td>
<td>US 05530170 A (JEFFREY S. BECK et al.) 25 June 1996 &lt;br&gt;See abstract: column 6, lines 13-44: claims 1-2, 6-7</td>
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<td>US 06066770 A (AN-HSIANG WU et al.) 23 May 2000 &lt;br&gt;See abstract, claims 1, 4, 8, 13</td>
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<td>A</td>
<td>US 05518956 A (JEESAN S. KIM et al.) 14 May 1996 &lt;br&gt;See abstract, claims 1, 4, 10-11</td>
<td>1-10</td>
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<td>A</td>
<td>US 06063722 A (AN-HSIANG WU et al.) 18 May 2000 &lt;br&gt;See abstract, claims 1, 3-4, 13</td>
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Further documents are listed in the continuation of Box C.  
See patent family annex.

* Special categories of cited documents:
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  * "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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Date of the actual completion of the international search  
25 NOVEMBER 2011 (25.11.2011)

Date of mailing of the international search report  
28 NOVEMBER 2011 (28.11.2011)

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Seo-gu, Daejeon 302-701, Republic of Korea

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<td>US 06096770 A</td>
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<tr>
<td>EP 0792251 B1</td>
<td>04.04.2001</td>
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<tr>
<td>JP 10-509720 A</td>
<td>22.09.1996</td>
<td></td>
<td></td>
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<tr>
<td>US 05680027 A</td>
<td>18.11.1997</td>
<td></td>
<td></td>
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<tr>
<td>US 05705726 A</td>
<td>06.01.1998</td>
<td></td>
<td></td>
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<tr>
<td>US 05849938 A</td>
<td>15.12.1998</td>
<td></td>
<td></td>
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<tr>
<td>WO 96-16005 A1</td>
<td>30.05.1996</td>
<td></td>
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<td>US 06063722 A</td>
<td>16.05.2000</td>
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