Title: ENZYMATIC-ASSISTED CHLORINE DIOXIDE TREATMENT

Abstract: The present invention provides methods and compositions for chlorine dioxide delignification and/or bleaching processes using exo-acting xylanases and/or exo-acting mannanases.
## INTERNATIONAL SEARCH REPORT

**International application No.**

PCT/US20/05038851

### A. CLASSIFICATION OF SUBJECT MATTER

**IPC:**

D21C 9/14 (2006.01); C12S 3/08 (2006.01)

**USPC:**

162/73; 435/278

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)

U.S.: 162/67; 162/72; 162/73; 435/277; 435/278

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)

### 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>
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<tbody>
<tr>
<td>X</td>
<td>US 5,725,732 A (Cooper, III) 10 March 1998 (10.03.1998), col. 3, line 55 to col. 6, line 64.</td>
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<td>Y</td>
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<td>4, 6, 8, 11, 12</td>
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<td>X</td>
<td>US 5,770,012 A (Cooper, III) 23 June 1998 (23.06.1998), col. 4, line 38 - col. 8, line 64.</td>
<td>7</td>
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<td>Y</td>
<td>US 5,661,021 (Buchert et al) 26 August 1997 (26.08.1997), col. 3, line 11 - col. 13, line 27.</td>
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<td>Y</td>
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<td>4, 11, 12, 14-16</td>
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<td>Y</td>
<td>US 6,685,748 B1 (Day et al) 3 February 2004 (03.02.2004), column 1, line 47 - column 4, line 47.</td>
<td>8, 16</td>
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<td>Y</td>
<td>WO 97/11164 A1 (GENENCOR INTERNATIONAL, INC.) 27 March 1997 (27.03.1997), page 3, line 1 - page 4, line 17.</td>
<td>6, 14, 15</td>
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</tbody>
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[ ] 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
  - **B** earlier application or patent 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
  - **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

**Date of the actual completion of the international search**

17 February 2006 (17.02.2006)

**Date of mailing of the international search report**

**[1]** MAR 2006

**Name and mailing address of the ISA/US**

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Fax/Email No. (571) 273-3201

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[Signature]

Steven Griffin
Telephone No. 571-272-1160

Form PCT/ISA/210 (second sheet) (April 2005)
### INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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