Low metal, low water biomass-derived pyrolysis oils and methods for producing the same.

Abstract: Low metal, low water biomass-derived pyrolysis oils and methods for producing the same are provided. Metal- and water-containing biomass-derived pyrolysis oil is contacted with an acidic ion-exchange resin having sulfonic acid groups to produce a low metal, water-containing biomass-derived pyrolysis oil. The low metal, water-containing biomass-derived pyrolysis oil is removed from the spent ion-exchange resin after ion-exchange. The low metal, water-containing biomass-derived pyrolysis oil is distilled to produce a low metal, low water biomass-derived pyrolysis oil and a distillation product. The distillation product comprises one or both of an alcohol ion-exchange regenerant and an acidic ion-exchange regenerant which may be used to regenerate the spent ion-exchange resin. The regenerated acidic ion-exchange resin may be recycled. The spent alcohol and acidic ion-exchange regenerants may be recovered and recycled.

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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

CIOG 25/02(2006.01)i, CIOL 1/02(2006.01)1, CIOL 3/00(2006.01)1, CIOG 7/00(2006.01)1

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)

CIOG 25/02; C07C 5/13; C07C 5/00; CIOL 9/02; CIOL 1/18

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: biomass, ion-exchange, distillation, metal, water, pyrolysis

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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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 2009-0188158 A1 (MORGAN WILLIAM DOUGLAS) 30 July 2009 See the abstract, claims 1, 4-5, figures 1-2</td>
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<td>US 2006-0264684 A1 (JOHN PETRI et al.) 23 November 2006 See the abstract, claims 1-3</td>
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<td>A</td>
<td>US 04668243A A (SCHULZ; JORANN G.) 26 May 1987 See the abstract, column 4 lines 40-50, column 7 lines 33-36</td>
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Date of the actual completion of the international search

31 AUGUST 2011 (31.08.2011)

Date of mailing of the international search report

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Korean Intellectual Property Office
Government Complex-Daejeon, 189 Cheongsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Park Sang Ho

Telephone No. 82-42-481-8709

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<td>US 04668243A A</td>
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<td>US 04762529A A</td>
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