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(54) Title: PROCESS FOR FRACTIONATING LIGNOCELLULOSIC BIOMASS INTO LIQUID AND SOLID PRODUCTS

(57) Abstract: The invention herein is an efficient, flexible biomass fractionation process comprising digesting a lignocellulosic-biomass material at about 120-220°C and a pH of less than about 4, in an aqueous mixture containing an effective concentration of at least one solvent for lignin, and separating to recover a solid phase that contains a large fraction of the cellulose originally in the starting lignocellulosic material and a liquid phase that contains most of the lignin and hemicellulose originally in the starting lignocellulosic biomass. The process can produce a solid phase that contains at least 75% cellulose and less than 10% lignin. The cellulose-rich solid product can be converted very efficiently to glucose. The solid product can also be used in commercial pulp applications, such as papermaking or fluff pulp. Hemicellulose sugars and lignin can be used directly or converted to other products.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: **C13D 1/14**(2006.01);**C12P 7/00**(2006.01);**C13K 1/02**(2006.01)

USPC: 536/56;127/36;435/132

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. : 536/56; 127/36; 435/132

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)

EAST-USPTO Patent Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,424,417 (Torget et al.) 13 June 1995 (13.06.1995), Whole Document especially Exameple 8	1-4, 8-11, 13-16, 19, 20 --- 6-7, 12, 21-28
Y	US 200410060673 A1 (Phillips et al.) 1 April 2004 (01.04.2004) paragraph 16	5, 17, 18, 29

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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