

Title (en)  
Process for bleaching lignocellulosic pulp

Title (de)  
Verfahren zum Bleichen von lignocellulosischem Zellstoff

Title (fr)  
Procédé de blanchiment de pâte lignocellulosique

Publication  
**EP 1304412 A3 20030625 (EN)**

Application  
**EP 02028861 A 20000322**

Priority  
• EP 00302354 A 20000322  
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• JP 22906899 A 19990813

Abstract (en)  
[origin: EP1039020A1] Lignocellulose pulp is bleached by bleaching a pulp in aqueous alkali solution with oxygen and treating the pulp with an enzyme, while a liquid fraction delivered from the enzyme treatment step is subjected to a penetration treatment through a separation membrane, for example, reverse osmosis membrane, to separate a permeated fraction from a non-permeated fraction; the permeated fraction is fed to the alkali-oxygen bleaching (oxygen delignification) step and is used as a liquid medium of the bleaching system; and non-permeated fraction is subjected to a xylooligosaccharide-collecting procedure. <IMAGE>

IPC 1-7  
**B01D 61/00**; **B01D 61/02**; **B01D 61/14**; **B01D 63/00**

IPC 8 full level  
**D21C 5/00** (2006.01); **D21C 9/147** (2006.01); **D21C 11/00** (2006.01)

CPC (source: EP)  
**D21C 5/005** (2013.01); **D21C 9/147** (2013.01); **D21C 11/0042** (2013.01)

Citation (search report)  
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• [A] US 4908311 A 19900313 - SASAKI TAKASHI [JP], et al  
• [A] EP 0301522 A2 19890201 - SHOWA DENKO KK [JP]  
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• [A] DATABASE WPI 26 November 1990 Derwent World Patents Index; AN 1991-012408, XP002239390  
• [A] PAICE M G ET AL: "Viscosity-enhancing bleaching of hardwood kraft pulp with xylanase from a clone gene", BIOTECHNOLOGY AND BIOENGINEERING. INCLUDING: SYMPOSIUM BIOTECHNOLOGY IN ENERGY PRODUCTION AND CONSERVATION, JOHN WILEY & SONS. NEW YORK, US, VOL. 32, PAGE(S) 235-239, ISSN: 0006-3592, XP002084960  
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**EP 1039020 A1 20000927**; **EP 1039020 B1 20040218**; CA 2301371 A1 20000923; CA 2301371 C 20090901; CA 2627846 A1 20000923; CA 2627846 C 20110104; EP 1304412 A2 20030423; EP 1304412 A3 20030625; EP 1304412 B1 20050914

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**EP 00302354 A 20000322**; CA 2301371 A 20000320; CA 2627846 A 20000320; EP 02028861 A 20000322