ONLINE ISSN : 1880-7577
PRINT ISSN : 0021-4795

Mokuzai Gakkaishi
Vol. 52 (2006) , No. 5 p.285-292

[PDF (767K)] [References]

Adsorption of Some Organic Liquids onto the Main Constituents of Wood

Takeshi Nakatani[1)], Yutaka Ishimaru[1)], Ikuho Iida[1)] and Yuzo Furuta[1)]

1) Research Division of Agriculture, Graduate School of Kyoto Prefectural University

(Received October 14, 2005)
(Accepted March 8, 2006)

Abstract: The adsorption of six kinds of organic liquid onto dry and preswollen adsorbents, i.e., wood pulp, holocellulose and wood meal, from their dilute benzene solutions were studied as the first step of clarifying the affinity of some organic liquids for the three main constituents of wood.
The results obtained were as follows : ethanol and DMSO showed stronger affinity for dry lignin than dry cellulose or hemicellulose. Comparison of adsorption onto dry and preswollen samples, suggested that less energy is necessary for adsorption of the liquids onto dry lignin than onto dry cellulose or hemicellulose by cutting their hydrogen bonds. Liquids having relatively small molar volume such as methanol can create new adsorption sites in cellulose and hemicellulose as well as lignin without so much energy, and can then approach the sites.

Keywords: adsorption, cellulose, hemicellulose, lignin, organic liquid

[PDF (767K)] [References]

Download Meta of Article[Help]
RIS
BibTeX

doi:10.2488/jwrs.52.285

JOI JST.JSTAGE/jwrs/52.285