


Mokuzai Gakkaishi  JWRS
The Japan Wood Research Society

[Available Issues](#) | [Japanese](#) >> [Publisher Site](#)

Author: Keyword: [ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1880-7577

PRINT ISSN : 0021-4795

Mokuzai Gakkaishi

Vol. 52 (2006) , No. 3 p.168-172



[\[PDF \(299K\)\]](#) [\[References\]](#)

Mechanical Properties of Wood in an Unstable State due to Temperature Changes, and an Analysis of the Relevant Mechanism II.[†]

Selective and uniform elimination of chemical constituents from wood blocks

Yue Wang¹⁾, Kazuya Minato¹⁾ and Ikuho Iida¹⁾

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

(Received August 10, 2005)

(Accepted October 26, 2005)

Abstract: In order to prepare wood specimens for subsequent measurements of mechanical properties, we examined the selective and uniform elimination of wood constituents from a 4 mm thick cross section of hinoki (*Chamaecyparis obtusa* Endl.). The results are summarized as follows:

1) Lignin was uniformly eliminated by a modified Kludiz's method (45°C, ~72h) throughout the block. Moreover, the amount of remaining lignin could be controlled by varying the reaction duration. The uniformity was confirmed also by a consideration of reaction kinetics.

2) The elimination of hemicellulose was carried out in an 0.4% aqueous solution of NaOH under high temperature and pressure. These conditions promoted the instantaneous and uniform diffusion of the reagent into the interior of the wood block. As a consequence hemicellulose was easily eliminated even from the thick cross section. The amount of remaining hemicellulose could be controlled by varying the concentration of NaOH.

The method proposed here assures the uniformity of wood constituents throughout the wood block, and would be widely applicable to purposes other than the mechanical tests, although the lack of uniformity between inner and outer layers of cell wall may remain.

Keywords: wood block, uniform elimination, lignin, hemicellulose



[\[PDF \(299K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Yue Wang, Kazuya Minato and Ikuho Iida: Mokuzaigakkaishi Vol. 52, No. 3, 168-172 (2006) .

doi:10.2488/jwrs.52.168

JOI JST.JSTAGE/jwrs/52.168

Copyright (c) 2006 by The Japan Wood Research Society



[Japan Science and Technology Information Aggregator, Electronic](#)

