研究課題名=「Study of Utilization and Method for Automatic Distinction of CCA Treated Wood from House Demolition.」

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要旨=

It is necessary to distinguish the CCA treated wood from building debris, in order to recycle them as safe woody biomass. The emission spectrum of Chromium, Copper and Arsenic are detected through analysis of the CCA standard wood, by using the Laser Breakdown Spectroscopy (LIBS) method. The content determination limits of Chromium, Copper were about 10 mg/kg, which are sufficient value to distinguish CCA treated woods accurately. And, the analysis result by using the LIBS method was not affected by wood species nor dirt deposits. The real samples of building debris were also able to be distinguished accurately by optimum determined LIBS method. It is found that LIBS method using optical fibers could also determine the contents of Chromium and Copper.

We could exclusively eliminate the 97% of CCA from CCA treated wood by 2% diluted sulfuric acid pretreatment with steam at 121℃to utilize them as saccharification material.

Arsenic could be satisfactorily separated from sulfuric acid by a cation exchanging ion excluder that has large exchange retention volume.

However, in the chip manufactureing process from waste woods, intermediate treatment process with high efficiency and accuracy would be necessary.

At present, CCA treated wood meets full-scale discharge stage.

キーワード= CCA Treated Wood、LIBS（Laser Induced Breakdown Spectroscopy）、House Demolition、Saccharification Materials、Toxic Metals Separation