

## **Energy Dispersive X-Ray Analysis on Preservatives Treated Tropical Bamboo Species**

### **ABSTRACT**

The technique used in treating bamboo culms with preservatives are indisputably has some influences in determining the preservatives performance against insects and decaying fungi. The actual protection depends largely on the penetration, location and retention of the preservatives at the tissue and cell walls levels. At optimum retention levels the preservative performance should be comparable unless the preservative distribution, substrate susceptibility or fixation product had altered. In evaluating the performance of various treatment methods employed, the distribution of preservatives within the cell walls of treated bamboo must be consider. In this study, results of the energy dispersive x-ray analysis on *Gigantochloa scortechinii* treated with Copper Chrome Arsenic (CCA) and Ammoniacal Copper Quaternary (ACQ) are analyzed. The *G. scortechinii* samples were treated by soaking, vacuum pressure impregnating and high-pressure sap-displacement. Observation was carried out using the Transmission Electron Microscope (TEM) linked system to an Energy Dispersive X-ray Analyzer (EDXA). The system enable to detect preservative distribution at the cellular level and measured relative preservative content on the lumen surface, in the S2 cell wall layer and in the middle lamella.