Abstract

This paper explains about identifying wood types using amacroscopic image on wood surfaces which have specific characteristics,such as cross-section, radial, and tangential. Generally, on the identifica-tion process of wood types, traders and carpenters only do the checkingwhich focuses on the cross-section part, it happened because of the dif-ficulty of identifying the radial and the tangential wood surfaces. Byusing the convolutional neural network method, it can extract imageswith several layers, so that it is possible to do an identification processon all three wood surfaces. There are approximately 3,000 images whichconsist of 3 species of wood with each cross-section, radial and tangentialsurfaces. Identification results showed great potential even though therewas a small amount of misclassification caused by similarities in differentspecies and differences in similar species. Within the process, classifica-tion results obtained by the amount training accuracy 89% and testingaccuracy 96% for the cross-section, 79% for the radial and 88% for thetangential planes. Thus, the identification of wood surfaces with highaccuracy result was at the cross-section surface.abstractenvironment.

Keywords:Macroscopic, Image, Convolutional Neural Network, CrossSection, Radial, Tangential.