Machining of Curved Surface of Wood by Ball End Mill
― Effects of rake angle and feed speed on machined surface ―

A curved surface was created from an edge grain surface of boards of makanba and hinoki using a ball end mill attached to a CNC router. The influences of the experimental conditions, such as wood species, feed direction to the grain, feed speed, and tool rake angle on the quality of machined surface were examined.

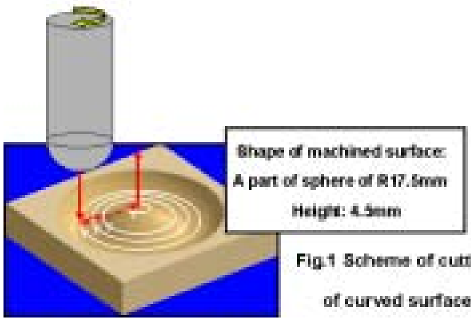

Fig.1 Scheme of cutting of curved surface

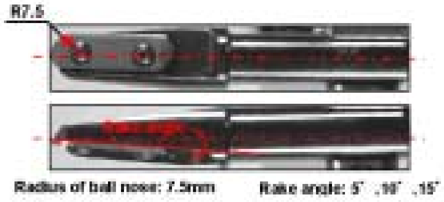

Fig.2 Shape of ball end mill

Fig.3 Primary profiles of machined surface

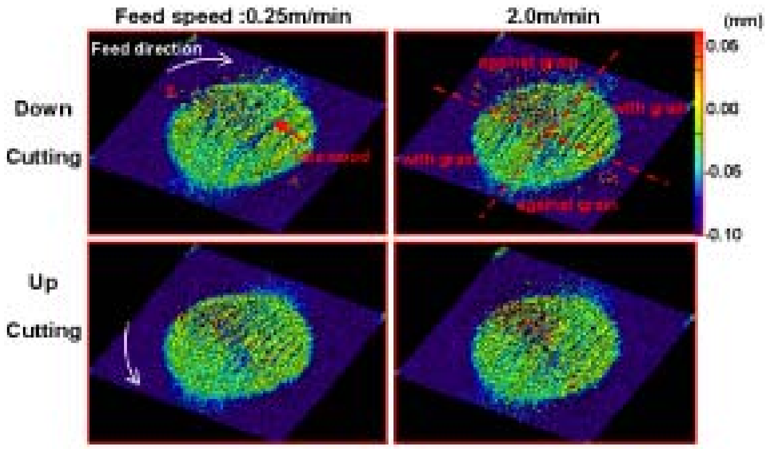

Fig. 4-1 Roughness profiles of machined surface

(Rake angle :5°, Cut off :8.0mm)

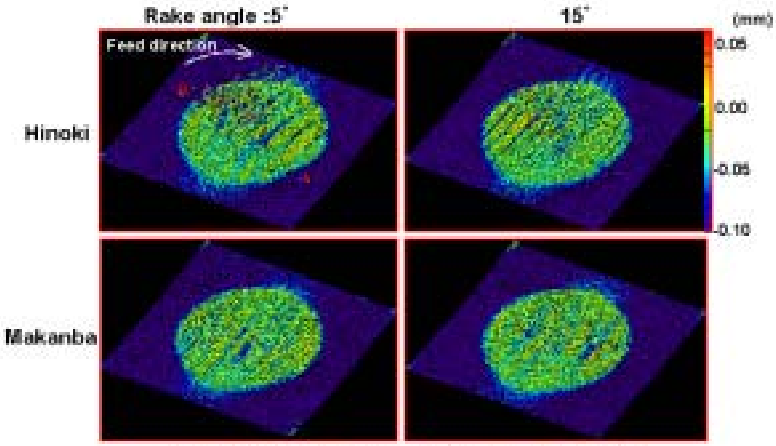

Fig.4-2 Roughness profiles of machined surface

(Down Cutting, Feed speed :0.25m/min, Cut off :8.0mm)