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SmartThumper™, a Non Destructive Lumber Evaluation Phone Application

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Devices currently available in the market for consumers are unaffordable and unpractical. Thus, we developed a smartphone application (App) that can measure stiffness.

SmartThumper is an affordable stiffness measuring mechanism that can be used as one of the tools to ultimately ensure the sound structure design and safe building constructions.

The objective of this research was to demonstrate the use of SmartThumper in longitudinal and transverse vibration nondestructive techniques.

139 pieces of 2 x 4 (38.1 x 88.9 mm) and 135 pieces of 2 x 8 (38.1 x 184.2 mm) southern pine lumber were evaluated.

These results indicate a potential use of SmartThumper to determine the modulus of elasticity (MOE) of structural lumber pieces and to expand the access of nondestructive techniques.

