

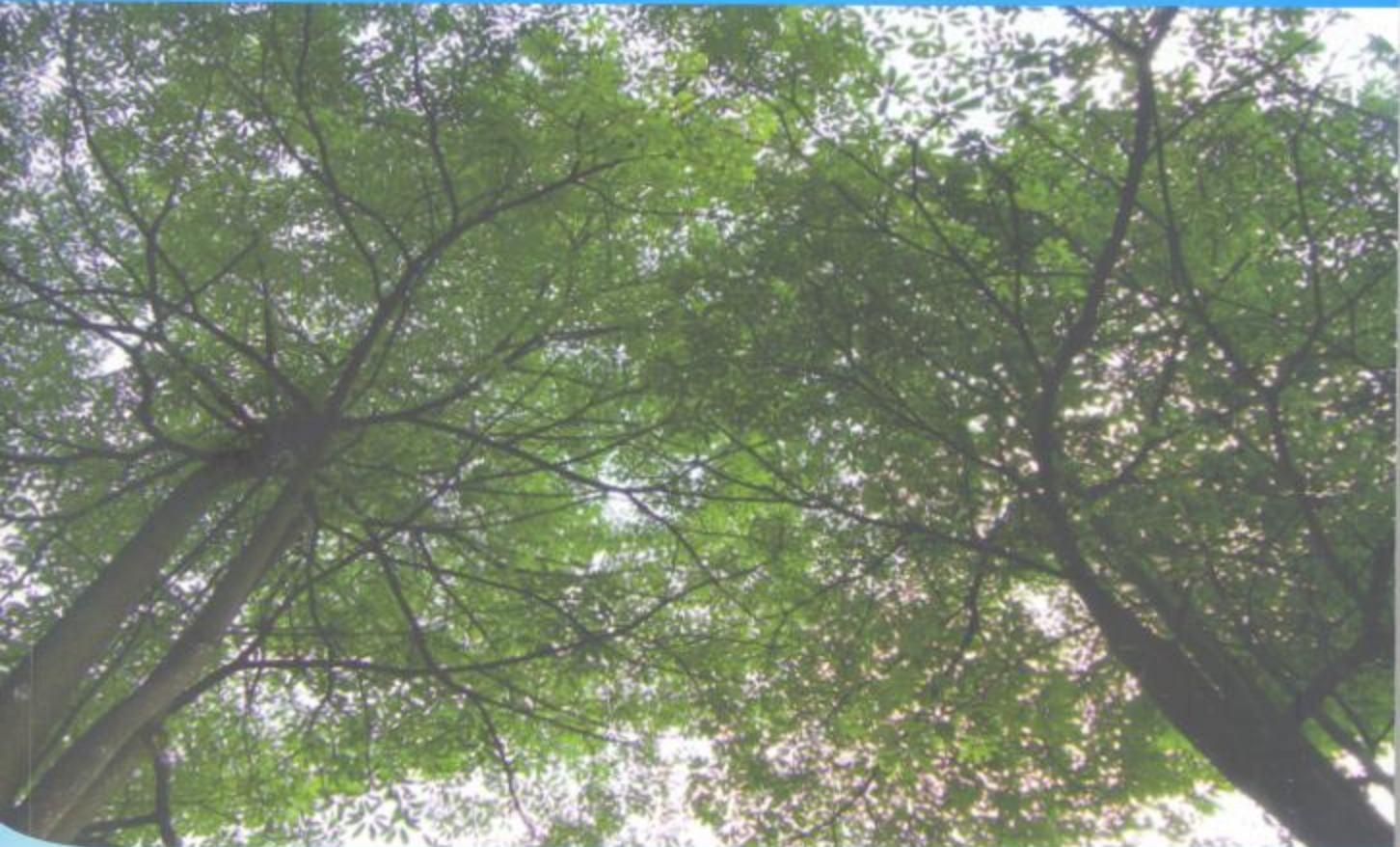


# Program Book



## THE 6<sup>TH</sup> INTERNATIONAL SYMPOSIUM OF INDONESIAN WOOD RESEARCH SOCIETY

*"The Utilization of Biomass from Forest and Plantation  
for Environment Conservation Efforts"*



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**Influence of Impact Modifier-Compatibilizer Combination on Tensile Properties and Impact Strength of Wood Flour and Polypropylene Composite**

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**ABSTRACT**

The tensile properties and impact strength (IS) of wood flour (WF) and polypropylene (PP) composite with or without several additives under various WF loadings have been studied. Compounding WF-PP composite was carried out by using a kneader (Labo Plastomil LPM 18-25) at 180 °C, 30~50 rpm for 15 min. The results showed that addition of a compatibilizer (mixtures of maleic anhydride (MAH), dicumyl peroxide (DCP) and antioxidant (AO)) improved the tensile strength, and impact strength of the WF-PP composite. At the same filler loading addition of ethylene propylene rubber (EPR) on the WF-PP composite without coupling agent (MAPP) was found to reduce TS, breaking elongation and IS of the WF-PP composites. Addition of MAH-modified-EPR (MEPR) in small quantity resulted in greater improvement of tensile strength and slightly improved Young's modulus and impact strength of WF-PP composites. Addition of EPR combined with MAH and DCP showed greater improvement of the tensile strength and impact strength of WF-PP composites compared to MEPR combined with MAH. Increasing WF loading up to 60% with 12% EPR content improved the impact strength of resulted WF-PP composite. At the same EPR or MEPR content increasing the WF loading resulted in increasing the Young's modulus of WF-PP composite. The tensile strength, Young's modulus, impact strength of resulted WF-PP composites were greatly influenced by addition small amount of EPR combined with MAPP and rubber cross-linking agent (PM).

*Key words: antioxidant, coupling agent, rubber, rubber cross-linking agent, WF-PP composite*

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