

DEVELOPMENT OF NEW BIO-BASED ADHESIVE FOR PAPER/CARDBOARD

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Bio-based adhesives are derived from renewable resources such as plant-based materials, animal by-products, and microbial sources. Latex-based bioadhesives, specifically those made from natural latex derived from plant sources, have garnered significant research interest. While natural rubber remains the most commonly used biosource for latex adhesives, this study explores the potential of alternative plant sources that produce latex. In particular, it provides a review of *Pterocarpus indicus* latex and discusses modifications made to enhance its adhesive properties. Additionally, this research examines the effect of additives such as Polyvinyl Alcohol on the adhesive properties of natural latex while evaluating their capacity for adhesive performance. The major challenges faced by existing bio-based adhesives, including low bonding strength and water resistance are acknowledged. Consequently, this study offers guidance on advancing new plant sources for bio-based adhesives, addressing the limitations of current adhesive products.

Keywords: Bio-based Adhesive, Latex, *Pterocarpus Indicus*, Adhesive Strength