

## **ABSTRACT**

*Natural fiber is a suitable alternative to replace synthetic fibers. The high cellulose content is an advantage of natural fibers which is suitable to bound with polymers. Natural fiber composites also produce good mechanical strength.*

*This research was conducted to analyze the effects of fiber orientation and alkali treatment soaking time on the bending strength of composites. The reinforcement was used ramie fiber with Yukalac 157 BQTN-EN polyester as the matrix. The method used in the manufacturing process was hand lay-up.*

*The composite bending test showed that aligned oriented discontinuous composite had higher value than randomly oriented discontinuous. The 3 hours alkali treatment soaking time showed the maximum bending strength in each fiber orientation. The highest value of bending strength was produced by a composite with aligned oriented discontinuous fiber and 3 hours alkali treatment soaking time which was 106.752 MPa. Whereas, the lowest bending strength value was produced by composites with randomly oriented discontinuous and without alkali treatment which was 45.887 MPa.*

**Keywords:** *composite, ramie fiber, polyester, alkali soaking time, fiber orientation, bending strength*