

## **ABSTRACT**

The changing times make problems in various fields of life more complex, including in material science. Metal materials are not always able to meet mechanical criteria in some conditions. For this reason, a combination of two or more types of materials is made, the material is called a composite. The most influential part of the composite mechanical criteria is the reinforcement. The most widely used reinforcement is fiber. Besides depending on the reinforcement, mechanical criteria can also be enhanced with some methods such as by chemical treatment on fiber like alkali and bleaching or the addition of filler like MCC.

This research will analyze the effect of alkali, bleaching and adding of MCC fillers to hybrid composite jute/glass/polyester. The purpose is to see the change in the tensile and bending strength. The composition of NaOH when alkali is 5% and bleaching with  $H_2O_2$  is 3%. The MCC composition used is 0.5% of UPR. The method of fabrication used is press mold. The hardener composition is 1% of UPR. After the fabrication process, tensile and bending specimens are tested. For addition of mcc, spesimen GGGGGG has the highest increase in tensile strength and flexural strength, 10,48% and 22%. Also, with addition of mcc and chemical treatment, spesimen JJJJJJ gives the highest increase in tensile and flexural strength, 20,12% and 113%.

**Keywords :** MCC, UPR, Jute Fiber, Glass fiber, Tensile Test, Bending Test