

**THE EFFECT OF ZINC OXIDE TO THE STRUCTURAL  
PROPERTIES OF POLYVINYL ALCOHOL AND JACKFRUIT  
SEED BLEND**

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## **ABSTRACT**

### **LIMITATIONS IN THE PROPERTIES OF CONVENTIONAL POLYMER**

Conventional polymer have a few limitations in their properties. Research had been made and researcher come out with a solution to overcome the limitations by adding inorganic nanofiller into the polymer. It will result in the enhancement of polymer properties. It is greatly differ from the conventional polymer and exhibit unexpected properties. The objective of this study is to fabricate the jackfruit seed starch/polyvinyl alcohol (PVA)/zinc oxide (ZnO) blend and investigate the effect of ZnO to the structural properties of jackfruit seed starch and PVA blend. From this study, it will produce an interesting biodegradable alternative packaging. The produced biodegradable materials is expected to have clear, homogenous and flexible properties after being plasticized with glycerol and using ZnO as filler. From this research, polymer that have more upgraded properties can be used to substitute conventional polymer. From the Fourier Transform Infrared Spectroscopy (FTIR) analysis results, there are O-H stretch,  $-C\equiv C-$  stretch and  $-C=O-$  stretch in all of the samples. As for the Scanning Electron Microscope (SEM) analysis, the visual of the sample looks smoother compared to the sample that have less percentage of ZnO as the percentage of ZnO added into the sample increase. For X-ray Powder Diffraction (XRD) analysis, the sample shows the properties of crystalline after the addition of ZnO into the sample.