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Investigation of Mechanical Properties of The Milled Glass Fiber Powder Reinforced Polypropylene Composite

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Abstract- In this study, the mechanical properties of milled glass fiber reinforced polypropylene matrix composite materials produced by extrusion method were investigated. The grain sizes of the milled glass fiber powders were measured with an optical microscope and were determined as 150 µm, 250 µm, 500 µm, 710 µm and 900 µm. In all experimental studies the reinforcement rate was determined to be 30%. Polypropylene matrice was added 1% maleic anhydride as initiator. The mechanically stirred solution was added as a cobalt octoate accelerator at 0.035%. Tensile and impact test specimens were prepared according to ASTM D790M-92 and ASTM D638M-91 standards to examine the mechanical properties of glass fiber reinforced polypropylene matrix composites. When the results were examined, the increase of the milled glass fiber grain size and the increase of the mechanical properties were determined.

Keywords - Glass fiber powder, polypropylene composite, mechanical properties