Weerapol Apimonsiri 2011: Influence of Glass Fiber Content on Rheological Properties of Polypropylene During Coextrusion Process. Master of Engineering (Materials Engineering), Major Field: Materials Engineering, Department of Materials Engineering. Thesis Advisor: Mr. Somjate Patcharaphun, Dr.-Ing. 94 pages.

The objective of this research was to design and construct the coextrusion rig in order to investigate the influence of short-glass-fiber contents and processing parameters on the rheological properties of polypropylene during the coextrusion process. The experimental results showed that the viscosity and swelling ratio of coextrudate were more dependent on the die temperature and shear rate of skin layer as compared with that of core layer. The adding of glass-fibers in polypropylene at the core layer resulted in the increase of viscosity, while tended to decrease swelling ratio of coextruded PP. In addition, the internal melt fracture phenomenon was found in all the case of short-glass-fiber filled polypropylene at the core layer. The results suggested that the use of breaker plate, the increases of melt temperature and die length could lower the instability of coextrudate.

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