Physical properties of polypropylene composites filled with hydrophobized wood flour

백종빈, 김대수†
충북대학교 화학공학과 고분자연구실
(dskim@chungbuk.ac.kr†)

Polypropylene/wood flour composites have been widely applied to decks, building walls and automobile parts. Interfacial interaction between the hydrophobic polymer matrix and hydrophilic wood flour is important. In this study, chemical modification to improve the hydrophobicity of wood flour was performed using soybean oil. Polypropylene composites filled with hydrophobized wood flour were prepared by melt-blending and compression molding. The modification was confirmed by FTIR and compatibility test. Mechanical properties of the composites were measured by impact tester and UTM. Thermal properties of the composite were measured by DMA and TGA. Impact strength, tensile modulus, storage modulus and elongation at break increased with soybean oil content attached (from 1.02 to 11.63 g) to the wood flour during the modification though tensile strength was maximum at the attached soybean oil content of 3.00 g.