

Physical properties of wood flour/polypropylene/clay composites prepared by melt-blending process

이홍관, 유호식, 채현규, 김대수*
충북대학교 화학공학과
(dskim@chungbuk.ac.kr*)

In recent years, wood plastic composites (WPCs) have drawn a lot of attention because they are economic, renewable, environmentally friendly, and show better performance than natural timber. Therefore, in this study, wood flour/polypropylene(PP)/clay composites were prepared by melt-blending followed by compression molding and factors such as composition and processing conditions affecting the performance of the WPCs were investigated. To make the WPCs poplar wood flour (80 mesh), PP (MFI: 16 g/10min), maleic anhydride polypropylene copolymer (MAPP) and organoclay (Cloisite-20A) were used. MAPP was used in principle to increase compatibility between the PP matrix and the wood flour, but its effects on the dispersion and exfoliation of the organoclay were also investigated. The physical properties and morphology of the WPCs were measured by UTM, I-zod impact tester, DMA, TMA, TGA and SEM. The performance of the WPCs was largely affected by various composition and processing conditions.