

Multifunctional Nanobiocomposite of Poly[(butylene succinate)-co-adipate] and Clay

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Abstract

The processing and characterization of multifunctional nanobiocomposite of biodegradable poly[(butylene succinate)-co-adipate] (PBSA) and organically modified synthetic fluorine mica (OSFM) are reported. The nanobiocomposite of PBSA with OSFM was prepared using meltblending, and the structure and morphology of the nanocomposite were characterized using X-ray diffraction and transmission electron microscopy. The mechanical and material properties measurements showed the concurrent improvement in temperature dependence storage modulus, tensile properties, gas barrier, and thermal stability of neat PBSA after nanocomposite formation. Such improved inherent properties along with the environmentally-friendly feature are expected to widen the use of PBSA for short-term food-packaging applications.