Structure and Properties of Pla Nanocomposites Films

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In this study, we investigated the structure and properties of polylactic acid (PLA)/clay nanocomposites films obtained from the extrusion blowing process, cast films process and biaxial stretching. The structure of the films is investigated using microscopy and X-ray diffraction (XRD). Orientation was determined from XRD measurements. The properties studied were the mechanical properties in terms of modulus, strength and elongation as well as tear and haze for blown films. The effect of nanoclay content in the range of 1 to 7.5% is investigated. XRD indicated that the clay remained basically with the same d-spacing and stretching of the films enhanced crystallization and decreased this spacing. Modulus improved with clay addition, whereas elongation at break decreased and strength was not significantly affected.