



OP-3-1183

Wednesday, May 11, 2011, 03:35-03:55 pm  
Room: Ambassadeurs

**MORPHOLOGY AND MECHANICAL PROPERTIES OF POLYLACTIDE NANOCOMPOSITE: A  
COMPARATIVE STUDY**

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In this work, the influence of processing conditions on the mechanical properties is investigated with respect to the degree of dispersion of clay stacks in a biodegradable polymer matrix. Poly (lactic acid) (PLA) with 2 wt% organically modified montmorillonite (MMT) were prepared using the melt intercalation technique in an internal mixer. In order to optimise processing conditions, mixing time, mixing temperature and mixing speed were changed, leading to different degrees of dispersion. The morphology as well as mechanical properties of the materials prepared were characterised by use of transmission electron microscope (TEM) and mechanical tests. Understanding the influence of processing conditions and the relationship between the degree of dispersion and the mechanical properties are needed for improving nanocomposite exfoliation/dispersion.