Crystallization of poly (L-lactide) / Flax Fiber biocomposites: influence of the matrix Molecular weight

Fenni SE[1,2], De Almeida O[1], Burr A[2], Boyer SAE[2]*.
*lead presenter: Severine.Boyer@minesparis.psl.eu
1 Institut Clément Ader (ICA), Université de Toulouse, CNRS UMR 5312, IMT Mines Albi, UPS, INSA, ISAE-SUPAERO, Campus Jarlard, Albi F-81013, France
2 Mines Paris, PSL-Research University, CEMEF-Centre de Mise en Forme des Matériaux, UMR CNRS 7635, CS 10207, Rue Claude Daunesse, 06904, Sophia Antipolis Cedex, France

Poly (lactid acid) (PLA) is a family of polymers with slow crystallization kinetics compared to other semi-crystalline polymers [1]. PLA crystallization is affected by chemical factors, for instance molecular mass, content of enantiomers and chemical modification [2].

In this work, the crystallization attitude of poly (L-lactide) (PLLA) matrix, not-filled and filled with Flax Fiber (FF), FF/PLLA biocomposites, was investigated as a function of the Molecular weight (Mw) of PLLA [3-4]. Polarized Optical Microscopy (POM) and Differential Scanning Calorimetry (DSC) analyses were used to analyze the crystallization phenomena of PLLA with Mw ranging from 175 to 105 kg/mol. Mw-induced nucleation discussion is carried along with FF-induced local surface nucleation [5].

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