ABSTRACT SUBMISSION

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Effect of Pre-process Drying of Cellulose on the Properties of Cellulose Fiber Reinforced Poly(Lactic Acid) Biocomposites

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In the last few decades due to growing environmental friendly consciousness, renewable resource based and biodegradable polymers gain more and more attention. One of the most promising polymer of the biopolymer family is the starch based Poly(Lacic Acid) (PLA) due to its excellent mechanical properties, however, it still has not entered into engineering applications. To achieve successful usage for example in automotive industry a biocomposite has to be made by reinforcing PLA with natural fibers. The cellulose fibers have the highest availability feature on Earth, thus it is most likely to be used in PLA based biocomposites as a reinforcing material. It the literature there is confusion according to the optimal drying conditions of these two phases.

In our study the optimal drying conditions of the cellulose fibers and the PLA was analyzed prior to biocomposite preparation. The mechanical properties of the injection molded specimens were investigated by using tensile, bending, and Charpy tests.

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