

Project 4: Investigation of the Processing Parameters of Biocomposites Materials

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The proposed research aims to bridge sciences to technology by investigating the processing-structure-property relationships of multifunctional biobased polymeric composites. It aims to design and fabricate smart "green" materials that possess tailored multifunctional properties. In this context, the short-term objectives of this research project are two-folded: (i) designing novel processing and fabrication strategies to tailor the micro-and-nano-structures of biobased polymeric composites; and (ii) characterizing the structures and multifunctional properties of these composites.

This research will improve the fundamental understanding of using various processing strategies and material sciences to control the dispersion and network formation of functional fillers in new biobased matrices. Hence, it will offer new insights to fabricate these composites with tailored multifunctional properties. This will result in the development of an innovative and new class of green electronic composites that can be used in lightweight functional materials with high performance.