



Environmental Science
and Policy Program
at Michigan State University

ESPP Research Colloquia: Increasing the Biodegradation Rate of Poly(Lactic Acid) in Composting Conditions

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10 a.m.

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Room 120, Packaging Building

Abstract: Poly(lactic acid) (PLA), a well-known compostable and bio-based aliphatic polyester, has found applications in the medical, textile, plasticulture, and packaging industries. PLA has been blended with several polymers and compounded with different micro and nanoparticles to fulfill desirable properties and to extend its range of applications. The growing interest in PLA-based materials and other biodegradable polymers has required the development of methodologies to evaluate their biodegradability and understand the different factors affecting their biodegradation mechanisms and rate. One of the current limitations of biodegradable polymers, like PLA, is that they do not biodegrade as fast as other organic wastes during composting, affecting their general acceptance in industrial composting facilities. This work provides the insights gained during the performance of different biodegradation tests and unique understanding about the biodegradation mechanism of PLA. Increasing the biodegradation rate of PLA-based materials will greatly benefit their general use and their acceptance in industrial composting facilities at their end of life.