

Abstract Submitted  
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**Prediction and characterization of biodegradable baroplastics with low temperature processability** NATHAN LOVELL, IKUO TANIGUCHI, Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, ANNE M. MAYES, Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139 — Interest in biodegradable and biologically-derived materials has prompted substantial research into polyesters like poly(L-lactic acid) (PLA). Although more environmentally benign than conventional thermoplastics, these still require elevated processing temperatures which cause their degradation and preclude their use as matrices for temperature-sensitive pharmaceuticals. Here we report on a new class of biodegradable block copolymer, consisting of PLA and one low T<sub>g</sub> polyester, that exhibits ‘baroplastic’ behavior. The copolymer components were selected using a compressible blend model to undergo pressure-induced miscibility, allowing their compression molding at temperatures as low as 35°C.

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