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Synthesis and thin film morphology of linear and cyclic poly(ϵ-caprolactone) AMELIA BERGESON, FARIHAH HAQUE, GIOVANNI KELLY, SCOTT GRAYSON, JULIE ALBERT, Tulane Univ — Polymers have a wide variety of applications in the scientific community as well as everyday life. Poly(ϵ-caprolactone) (PCL), a semi-crystalline aliphatic polyester, has found important applications including drug delivery devices. The procedure for synthesizing linear PCL is well-documented and thus linear PCL has been studied in various systems, including bulk and thin films. On the other hand, the ability to synthesize cyclic PCL has only recently been developed. The synthesis of cyclic PCL from the linear analogue can be accomplished via click chemistry. Characterization of thin films of cyclic PCL via atomic force microscopy and optical microscopy produced novel results with respect to morphology and crystallization kinetics. These observations are not limited to the pure cyclic thin films, but also appear in various blends of linear and cyclic PCL.

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