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Rheological Properties of T-Shaped Liquid Crystals NICHOLAS DIORIO, CHRISTOPHER BAILEY, Kent State University, CARSTEN TSCHIERSKE, Martin Luther University, Halle, Germany, ANTAL JÁKLI, Kent State University — The rheological properties of "T-shaped" liquid crystal molecules are investigated. These T-shaped molecules show novel liquid crystal phases with a variety of lamellar and columnar structures [1,2,3]. We examined the viscoelastic behavior of these materials over varying temperatures and shear rates. Because of the limited quantities of these materials, a home- made nanoliter rheometer [4] is used that only requires a few nanoliters of material. [1] M. Prehm, X.H. Cheng, S. Diele, M. K. Das, and C. Tschierske; J. AM. CHEM. SOC. 2002, 124, 12072-12073 [2] X.Cheng, M. K. Das, U. Baumeister, S. Diele, and C. Tschierske; J. AM. CHEM. SOC. 2004, 126, 12930-12940 [3] M. Prehm, F. Liu, U. Baumeister, X. Zeng, G. Ungar, and C. Tschierske; Angew. Chem. Int. Ed. 2007, 46, 7972 7975 [4] C. Bailey, A. Jákli, "Broad range nanoliter rheometer", Provisional patent , KSU 325 (2008)

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