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Investigation of the physical properties of banana liquid crystal fibers CHRISTOPHER BAILEY, ANTAL JAKLI, Liquid Crystal Institute, Kent State University — It has been known that smectic liquid crystals of rod-shape molecules can produce stable free-standing thin films which are created by stacks of smectic layers. An analogous system occurs for liquid crystals of bent-core molecules ('banana' liquid crystals) in which stable fibers are formed by multiple concentric cylindrical layers. These fibers can be created with very large length to diameter ratios. We have shown that these fibers can be formed in the liquid crystal phase and then stabilized in a crystalline state at room temperature. We investigated the conductivity of these fibers and the dynamics of fiber breaking in the liquid crystal and crystalline phases.

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