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A Bent – Shape Leaning Smectic Liquid Crystal Material CUIYU ZHANG, NICK DIORIO, Kent State University, S. RADHIKA, B.K. SADASHIVA, Raman Research Institute, ANTAL JAKLI, Kent State University — Liquid crystals of bent-shape molecules theoretically can form four types of fluid smectic layer structures: (a) A polar smectic phase (called SmAP) where both molecular plane and the line connecting the end of average molecules (director) are perpendicular to the layer normal; (b) A double tilted chiral polar structure; (c) A single tilted phase (SmCP) where only the molecular plane is tilted with respect to the layer normal. The fourth possibility, where the director is tilted with respect to the layer normal, the “leaning” SmLP phase, has never been verified experimentally. Here we present the first bent-core material that forms a SmLP structure, thus proving the reality of all theoretically predicted bent-core smectic phases.

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