

Abstract Submitted
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Alignment of Liquid Crystals by Nano- and Micro -Scale Topographic Patterns Made by Nanoimprint Lithography¹ YOUNGWOON YI, MICHI NAKATA, ALEXANDER MARTIN, NOEL CLARK, Department of Physics and Liquid Crystal Materials Research Center, University of Colorado, Boulder CO 80309, VAIBHAV KHIRE, CHRISTOPHER BOWMAN, Department of Chemical and Biological Engineering and Liquid Crystal Materials Research Center, University of Colorado, Boulder CO 80309 — Topographic patterns prepared using nanoimprint lithography have great potential in the alignment of liquid crystals (LCs) because their preparation is a parallel and low cost process. Nano- and micro- scale topographic patterns are made by stamping a mold on liquid material, which is then cured by UV light illumination. Such topographically patterned plates are used as one of the window of LC cells. Depolarized transmission light microscopy shows that nematic liquid crystals are aligned uniformly along the lines on the linear patterns and aligned either homeotropically or with bistable planar states in patterns of squares, depending on their scale.

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