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Liquid Crystals under Photo-patterned Spatially Varying Boundary Conditions¹ MIAO JIANG, YU-BING GUO, QI-HUO WEI, Liquid Crystal Institute, Kent State Univ, Kent, OH — Liquid crystals under geometric confinements are of not only fundamental interest but also practical importance to applications such as chemical sensing and smart windows. Orientations of liquid crystal molecules in most geometric confinements are uniform at the boundaries and not highly controllable. In this paper, we will present a novel photoalignment technique to pattern spatially varying complex orientation fields, and discuss experimental studies on nematic liquid crystals under confinements of two parallel plates with various well designed molecular orientation fields.

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