

Abstract Submitted
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Substrate induced gliding for a nematic liquid crystal layer¹ EN-SELA MEMA, LINDA CUMMINGS, LOU KONDIC, New Jersey Institute of Technology — The interaction between nematic liquid crystals (NLC) and polymer substrates is of current industrial interest, due to a desire to manufacture a new generation of flexible Liquid Crystal Displays (LCDs) for use in portable electronic devices. Polymer substrates present challenges because they can interact with the NLC, exhibiting a phenomenon known as gliding: the preferred orientation of the NLC molecules at the interface changes over timescales of minutes to hours. We present two models for gliding, inspired by the physics and chemistry of the interaction between the NLC and polymer substrate. These models, though simple, lead to non-trivial results, including loss of bistability, a finding that may have implications for display devices.

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