Abstract Submitted
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Liquid Crystal Alignment Induced by a Magnetic Field and the Associated Surface Memory Effect[1] RUI GUO, QINGBING WANG, SATYENDRA KUMAR, Department of Physics, Kent State University, Kent, Ohio 44242, YURI REZNIKOV, Institute of Physics of National Academy of Science, Prospect Nauki 46, Kyiv 252022, Ukraine — Nematic liquid crystals, 4, 4'-n-pentylcyanobiphenyl (*5CB*) and a commercial mixture, *E*7, have been found to align in thin cells prepared by cooling from the isotropic phase in the presence of a strong magnetic field parallel to the ITO coated glass substrates. The field induced alignment is very stable and possesses surface memory effect [1]. Surprisingly, the azimuthal anchoring energy is as high as 10^{-3}erg/cm^2 and comparable to that obtained for rubbed polymer alignment layers. The surface memory effect is thermally stable and cannot be erased even after holding the cell more than 40K above the clearing point for up to two hours.We believe that the magnetic field directed rearrangement of the LC molecules adsorbed [2] at the substrate is responsible for the observed behavior. —— [1]. N. A. Clark, Phys. Rev. Lett. **55**, 292 (1985). [2]. Y. shi, B. Cull, and S. Kumar, Phys. Rev. Lett. **71**, 2773 (1993).

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