

FIG. 1. (a) and (c) Unstrained nematic structures containing polar molecules. (b) Splayed structure in which splay and polarization are coupled by the wedge shape of the molecule. (d) Bent structure in which the bending and polarization are coupled by the crescent shape of the molecule.

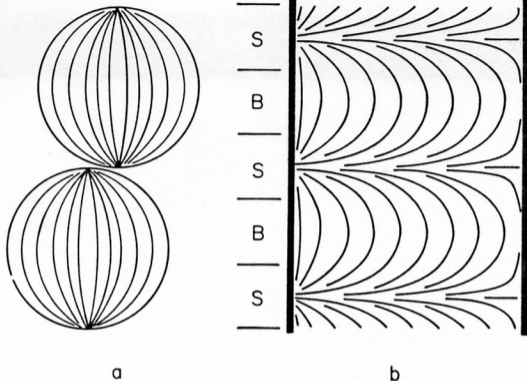


FIG. 2. Nematic structures exhibiting piezoelectric effects. The local symmetry axis is parallel to the lines. (a) Nematic droplets attracting one another because of curvature-induced space charges. (b) Cross section of a field-induced domain pattern between plane-parallel electrodes, containing alternating regions of splay (S) and bending (B).

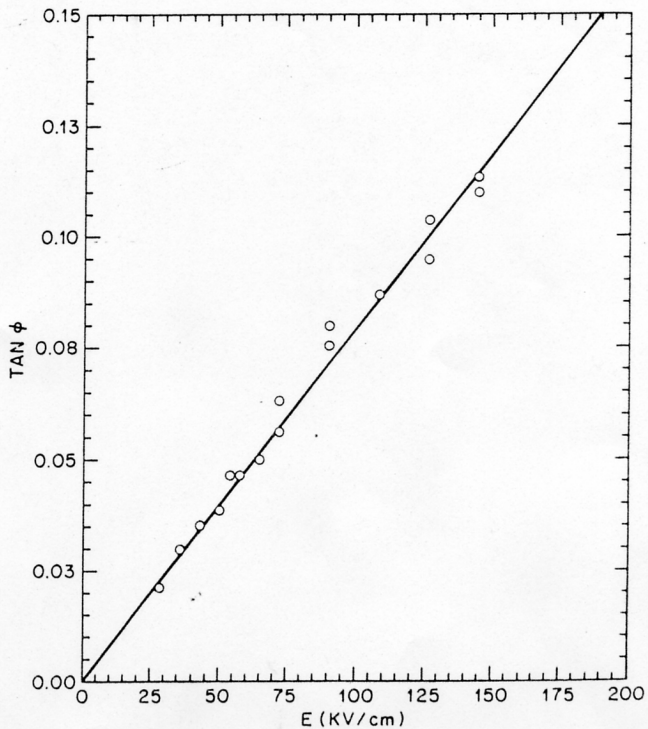


FIG. 1. Rotation of the optical axis ($\tan\phi$) vs applied field (E).

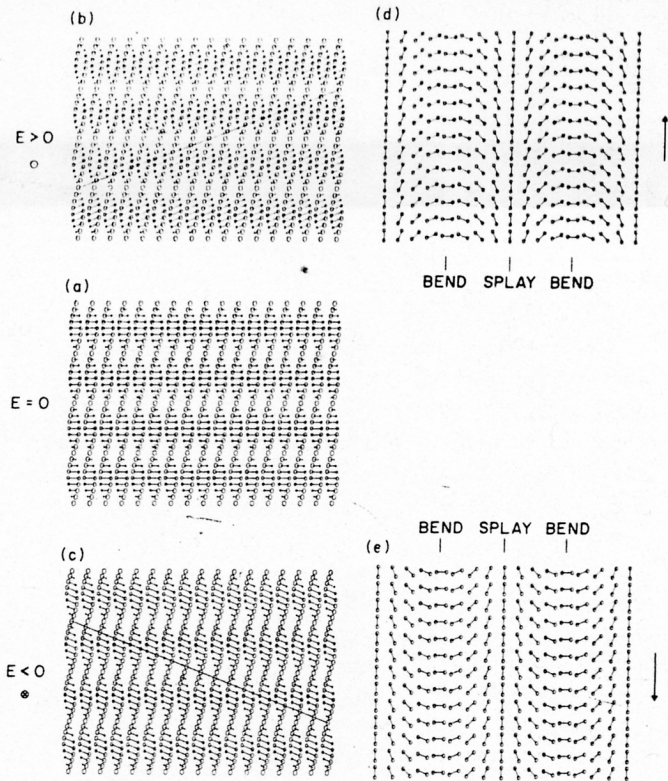


FIG. 2. The helical structure viewed normal to the helix axis, (a) in the absence of an electric field, and (b),(c) in the presence of an electric field perpendicular to the plane of the drawing, which shows the induced director rotation. (d),(e) Cross sections of the helix as indicated by the lines in (b) and (c), displaying the splay-bend pattern.