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Nota di contenuto	Liquid Crystals: Viscous and Elastic Properties; Contents; Preface; 1 Introduction; References; 2 Physical Backgrounds for Practical Applications of Liquid Crystals; 2.1 Anisotropy of Physical Properties of Liquid Crystals; 2.1.1 Liquid Crystal Molecules and Phases; 2.1.2 Nonliquid Crystal Compounds; 2.1.3 Typical Methods of Liquid Crystal Material Preparation for Various Applications; 2.1.4 Basic Physical Properties; 2.1.4.1 Dielectric Properties; 2.1.4.2 Optical Anisotropy; 2.1.4.3 Viscoelastic Properties; 2.1.4.4 Elasticity; 2.1.4.5 Viscosity; 2.2 Liquid Crystal Alignment on the Surface 2.2.1 Types of Liquid Crystal Alignment2.2.1.1 Electrooptical Cells; 2.2.1.2 Planar (Homogeneous) Orientation; 2.2.1.3 Homeotropic Orientation; 2.2.1.4 Tilted Orientation; 2.2.1.5 Other Types of Liquid Crystal Alignment; 2.2.2 Surface Energy; 2.3 Liquid Crystals Under Magnetic and Electric Fields; References; 3 Flows of Anisotropic Liquids; 3.1 Couette and Poiseuille Flows in Isotropic Liquids and Liquid Crystals; 3.2 Hydrodynamic Instabilities in Couette and Poiseuille Steady Shear Flows; 3.3 Steady Flows of Liquid Crystals

Sommario/riassunto

Covering numerous practical applications as yet not covered in any single source of information, this monograph discusses the importance of viscous and elastic properties for applications in both display and non-display technologies. The very well-known authors are major players in this field of research and pay special attention here to the use of liquid crystals in fiber optic devices as applied in telecommunication circuits.