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Note generali	Description based upon print version of record.
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Nota di contenuto	Ferroelectric and Antiferroelectric Liquid Crystals; Contents; List of Symbols and Abbreviations; 1 Introduction; 2 Polar Materials and Effects; 2.1 Polar and Nonpolar Dielectrics; 2.2 The Nonpolarity of Liquid Crystals in General; 2.3 Behavior of Dielectrics in Electric Fields: Classification of Polar Materials; 2.4 Developments in the Understanding of Polar Effects; 2.5 The van der Waals Attraction and Born's Mean Field Theory; 2.6 Landau Preliminaries . The Concept of Order Parameter; 2.7 The Simplest Description of a Ferroelectric; 2.8 Improper Ferroelectrics; 2.9 The Piezoelectric Phase 3 The Necessary Conditions for Macroscopic Polarization3.1 The Neumann and Curie Principles; 3.2 Franz Neumann, Konigsberg, and the Rise of Theoretical Physics; 3.3 Neumann's Principle Applied to Liquid Crystals; 3.4 The Surface-Stabilized State; 3.5 Chirality and its Consequences; 3.6 The Curie Principle and Piezoelectricity; 3.7 Hermann's Theorem; 3.8 The Importance of Additional Symmetries; 3.9 Optical Activity and Enantiomorphism; 3.10 Non-Chiral Polar and NLO-Active Liquid Crystals; 4 The Flexoelectric Polarization; 4.1 Deformations from the Ground State of a Nematic

4.2 The Flexoelectric Coefficients4.3 The Molecular Picture; 4.4 Analogies and Contrasts to the Piezoelectric Effect; 4.5 The Importance of Rational Sign Conventions; 4.6 Singularities are Charged in Liquid Crystals; 4.7 The Flexoelectrooptic Effect; 4.8 Why Can a Cholesteric Phase not be Biaxial?; 4.9 Flexoelectric Effects in the Smectic A Phase; 4.10 Flexoelectric Effects in the Smectic C Phase; 5 The SmA* - SmC* Transition and the Helical C* State; 5.1 The Smectic C Order Parameter; 5.2 The SmA* - SmC* Transition; 5.3 The Smectic C* Order Parameters; 5.4 The Helical Smectic C* State
5.5 The Flexoelectric Contribution in the Helical State5.6 Nonchiral Helielectrics and Antiferroelectrics; 5.7 Mesomorphic States without Director Symmetry; 5.8 Simple Landau Expansions; 5.9 The Electroclinic Effect; 5.10 The Deformed Helix Mode in Short Pitch Materials; 5.11 The Landau Expansion for the Helical C* State; 5.12 The Pikin-Indenbom Order Parameter; 6 Electrooptics in the Surface-Stabilized State; 6.1 The Linear Electrooptic Effect; 6.2 The Quadratic Torque; 6.3 Switching Dynamics; 6.4 The Scaling Law for the Cone Mode Viscosity 6.5 Simple Solutions of the Director Equation of Motion6.6 Electrooptic Measurements; 6.7 Optical Anisotropy and Biaxiality; 6.8 The Effects of Dielectric Biaxiality; 6.9 The Viscosity of the Rotational Modes in the Smectic C Phase; 7 Dielectric Spectroscopy To Find the y^ and e^ Tensor Components; 7.1 Viscosities of Rotational Modes; 7.2 The Viscosity of the collective Modes; 7.3 The Viscosity of the Noncollective Modes; 7.4 The Viscosity yø from Electrooptic Measurements; 7.5 The Dielectric Permittivity Tensor; 7.6 The Case of Helical Smectic C* Structures; 7.7 Three Sample Geometries
7.8 Tilted Smectic Layers

Sommario/riassunto

The study of ferroelectricity is a branch of solid state physics which has shown rapid growth during the recent years. Ferroelectric materials exhibit unusual electric properties which make them useful in modern (opto)electronic technology, esp. display technology.Ferroelectric and antiferroelectric liquid crystals, including also various polymer forms, are the hottest research topic today in liquid crystals. The field is at the very beginning of industrial exploitation - a sensitive phase in which a good reference work is needed and will have a broad spectrum of readers both at universiti

2. Record Nr. UNINA9910299461703321

Autore	Schramm Dieter
Titolo	Vehicle Dynamics : Modeling and Simulation / / by Dieter Schramm, Manfred Hiller, Roberto Bardini
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ISBN	3-540-36045-X
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (417 p.)
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Soggetti	Automotive engineering Mechatronics Multibody systems Vibration Mechanics, Applied Automotive Engineering Multibody Systems and Mechanical Vibrations
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- Mathematic and Kinematic Fundamentals -- Kinematics of Multibody Systems -- Equations of Motion for Complex Multibody Systems -- Kinematics and Dynamics of the Vehicle Body -- Modeling and Analysis of Suspension Systems -- Modeling of Road-Wheel Interactions -- Powertrain Modeling -- Applied Forces and Torques -- Single-Track Model -- Double-Track Model -- Three-Dimensional Vehicle Model -- Model of a Typical Complex Vehicle -- Selected Applications -- References.
Sommario/riassunto	The authors examine in detail the fundamentals and mathematical descriptions of the dynamics of automobiles. In this context different levels of complexity will be presented, starting with basic single-track models up to complex three-dimensional multi-body models. A

particular focus is on the process of establishing mathematical models on the basis of real cars and the validation of simulation results. The methods presented are explained in detail by means of selected application scenarios.