1. Record Nr. UNINA9910132434403321

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Titolo	Modeling and optimization of LCD optical performance / / Dmitry A. Yakovlev, Vladimir G. Chigrinov, Hoi-Sing Kwok
Pubbl/distr/stampa	West Sussex, England : , : John Wiley & Sons, Inc., , 2015 ©2015
ISBN	1-118-70671-4 1-118-70674-9 1-118-70673-0
Descrizione fisica	1 online resource (581 p.)
Collana	Wiley-SID Series in Display Technology
Disciplina	621.3815/422
Soggetti	Liquid crystal displays
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Modeling and Optimization of LCD Optical Performance; Contents; Series Editor's Foreword; Preface; Acknowledgments; List of Abbreviations; About the Companion Website; 1 Polarization of Monochromatic Waves. Background of the Jones Matrix Methods. The Jones Calculus; 1.1 Homogeneous Waves in Isotropic Media; 1.1.1 Plane Waves; 1.1.2 Polarization. Jones Vectors; 1.1.3 Coordinate Transformation Rules for Jones Vectors. Orthogonal Polarizations. Decomposition of a Wave into Two Orthogonally Polarized Waves; 1.2 Interface Optics for Isotropic Media; 1.2.1 Fresnels Formulas. Snells Law 1.2.2 Reflection and Transmission Jones Matrices for a Plane Interface between Isotropic Media1.3 Wave Propagation in Anisotropic Media; 1.3.1 Wave Equations; 1.3.2 Waves in a Uniaxial Layer; 1.3.3 A Simple Birefringent Layer and Its Principal Axes; 1.3.4 Transmission Jones Matrices of a Simple Birefringent Layer at Normal Incidence; 1.3.5 Linear Retarders; 1.3.6 Jones Matrices of Absorptive Polarizers. Ideal Polarizer; 1.4 Jones Calculus; 1.4.1 Basic Principles of the Jones Calculus; 1.4.2 Three Useful Theorems for Transmissive Systems 1.4.3 Reciprocity Relations. Joness Reversibility Theorem1.4.4 Theorem of Polarization Reversibility for Systems Without Diattenuation; 1.4.5 Particular Variants of Application of the Jones Calculus. Cartesian Jones Vectors for Wave Fields in Anisotropic Media; References; 2 The Jones

Calculus: Solutions for Ideal Twisted Structures and Their Applications in LCD Optics; 2.1 Jones Matrix and Eigenmodes of a Liquid Crystal Layer with an Ideal Twisted Structure; 2.2 LCD Optics and the Gooch-Tarry Formulas; 2.3 Interactive Simulation; 2.4 Parameter Space; References; 3 Optical Equivalence Theorem
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4.1.1 Electrically Controlled Birefringence4.1.2 Twist Effect; 4.1.3 Supertwist Effect; 4.1.4 Optimization of Optical Performance of Reflective LCDs; 4.2 Transflective LCDs; 4.2.1 Dual-Mode Single-Cell-Gap Approach; 4.2.2 Single-Mode Single-Cell-Gap Approach; 4.3 Total Internal Reflection Mode; 4.4 Ferroelectric LCDs; 4.4.1 Basic Physical Properties; 4.4.2 Electro-optical Effects in FLC Cells; 4.5 Birefringent Color Generation in Dichromatic Reflective FLCDs; References; 5 Necessary Mathematics. Radiometric Terms. Conventions. Various Stokes and Jones Vectors
5.1 Some Definitions and Relations from Matrix Algebra

Sommario/riassunto

The aim of this book is to present the theoretical foundations of modeling the optical characteristics of liquid crystal displays, critically reviewing modern modeling methods and examining areas of applicability. The modern matrix formalisms of optics of anisotropic stratified media, most convenient for solving problems of numerical modeling and optimization of LCD, will be considered in detail. The benefits of combined use of the matrix methods will be shown, which generally provides the best compromise between physical adequacy and accuracy with computational efficiency and optimization fac