

SOLID-STATE PHYSICS

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Infrared Ellipsometry on Semiconductor Layer Structures

The study of semiconductor-layer structures using infrared ellipsometry is a rapidly growing field within optical spectroscopy. This book offers basic insights into the concepts of phonons, plasmons and polaritons, and the infrared dielectric function of semiconductors in layered structures. It describes how strain, composition, and the state of the atomic order within complex layer structures of multinary alloys can be determined from an infrared ellipsometry examination. Special emphasis is given to free-charge-carrier properties, and magneto-optical effects. A broad range of experimental examples are described, including multinary alloys of zincblende and wurtzite structure semiconductor materials, and future applications such as organic layer structures and highly correlated electron systems are proposed.

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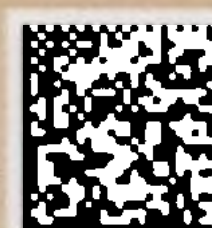
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1	Introduction	1
	References	4
2	Ellipsometry	7
2.1	Jones Matrix Presentation	8
2.2	Mueller Matrix Presentation	9
2.3	Standard Ellipsometry	11
2.4	Generalized Ellipsometry	12
2.5	Brewster and Interface-Mode Conditions	13
2.5.1	Generalized Brewster Conditions	13
2.5.2	Generalized Interface-Mode Conditions	14
2.6	Anisotropic Dielectric Function Tensor	14
2.6.1	General Description	14
2.6.2	Orthogonal Rotations	15
2.6.3	Bond Polarizability Model	16
2.7	Light Propagation in Layered Anisotropic Media	18
2.8	Ellipsometry Data Analysis	20
2.8.1	Thickness and Dielectric Function	20
2.8.2	Wavelength-by-Wavelength Fit	21
2.8.3	Parameterized Model Fit	21
2.8.4	Ellipsometry Test Functions	22
2.8.5	Parameter Accessibility	23
2.9	Infrared Ellipsometry	23
	References	27
3	Infrared Model Dielectric Functions	31
3.1	Polar Lattice Resonance Contributions	31
3.2	Free-Charge-Carrier Contributions	35
3.3	Low-Polarity Mode Contributions	38
3.4	Free-Charge-Carrier Magneto-Optic Contributions	39
	References	42

4	Polaritons in Semiconductor Layer Structures	45
4.1	Bulk Polaritons	45
4.1.1	Dispersion Relation	45
4.1.2	Example: <i>i</i> -GaAs	47
4.2	Surface Polaritons and Surface Guided Waves	48
4.2.1	Dispersion Relation	50
4.2.2	Example: <i>i</i> -GaAs Film on <i>n</i> -GaAs Substrate	52
4.2.3	The Berreman Effect	62
	References	64
5	Anisotropic Substrates	67
5.1	Bands of Total Reflection	68
5.2	Sapphire (Hexagonal)	70
5.3	Stibnite (Orthorhombic)	76
	References	79
6	Zincblende-Structure Materials (III–V)	81
6.1	Free Charge Carriers (<i>p</i> -Type GaAs)	81
6.2	Alloying (AlGaInP)	85
6.3	Ordering (AlGaInP)	90
6.4	Strain and Composition (GaN _P , GaInAsN)	96
6.4.1	GaN _P /GaP	96
6.4.2	InGaNAs/GaAs	100
	References	104
7	Wurtzite-Structure Materials (Group-III Nitrides, ZnO)	109
7.1	Crystal Quality: Bulk and Epilayer (ZnO)	112
7.2	Total-Reflection-Bands and Dielectric Anisotropy (ZnO)	116
7.3	Epitaxial Relationship (ZnO)	117
7.4	Free Charge Carriers (<i>p</i> - and <i>n</i> -Type GaN)	123
7.5	Strain and Alloying (InAlN)	128
7.6	Device Heterostructures (Group-III Nitrides)	133
	References	143
8	Magneto-Optic Ellipsometry	147
8.1	Experimental Setups	149
8.1.1	Polar MO Setup: Example	150
8.1.2	Oblique MO Setup: Example	152
8.2	Experiments	153
8.2.1	<i>i</i> -GaAs(<i>d</i>)/ <i>n</i> -GaAs	154
8.2.2	<i>n</i> -B _{0.03} In _{0.06} Ga _{0.91} As(<i>d</i>)/ <i>i</i> -GaAs	159
8.2.3	<i>n</i> -GaAs(<i>d</i>)/ <i>n</i> -Al _{0.19} Ga _{0.33} In _{0.48} P(<i>d</i>)/ <i>i</i> -GaAs	160
	References	163

A	4×4 Transfer Matrix T_p for Isotropic Films	165
	References	167
B	4×4 Transfer Matrix T_p for Dielectric Homogeneous Films	169
	References	170
C	4×4 Transfer Matrix T_p for Magneto-optic Films	171
	References	172
D	4×4 Transfer Matrix T_p for Dielectric Helical Films	173
	References	178
E	TM Waves at the Interface Between Two Half-Infinite Media	181
	References	183
F	TM Waves at Two Stratified Interfaces	185
	References	190
	Index	191