

CONTENTS

CONTRIBUTORS	vii
PREFACE	ix

Optical Characterization of III-V and II-VI Semiconductor Heterolayers

G. BASTARD, C. DELALANDE, Y. GULDNER, AND P. VOISIN

I. Introduction	1
II. Energy Levels in Heterolayers	4
III. Formal Optical Properties	70
IV. Experimental Methods in Unstrained III-V Systems	85
V. Strained Layer Systems	125
VI. II-VI Superlattices: Optical Determination of the Band Structure	151
Acknowledgements	170
References	170

Dimensional Analysis

JOSE F. CARINENA AND MARIANO SANTANDER

I. Introduction	182
II. Conventional Dimensional Analysis	183
III. The Mathematical Foundations of Dimensional Analysis	199
IV. The Physical Meaning of Dimensional Analysis	216
V. Kinematic Groups and Dimensional Analysis	226
VI. Dimensional Analysis and Symmetries of Differential Equations	234
VII. Appendix	245
References	255

Lattice Quantization

JERRY D. GIBSON AND KHALID SAYOOD

I. Introduction	259
II. Scalar Quantization	262

III. Definitions and Motivation for Optimal Vector Quantization	265
IV. Motivation for Lattice Quantization	270
V. Lattices	275
VI. Lattice Quantizer Design.	296
VII. Fast Quantization Algorithms.	304
VIII. Performance Comparisons.	316
IX. Research Areas and Connections to Other Fields	325
X. Conclusions	326
Acknowledgment	327
Notes	327
References	328
INDEX	331