

tantamount to political suicide. Political passions, once they have been fanned into flame, exact their victims. . . ."

Death prevented him from finishing this sentence.

ENGELBERT L. SCHUCKING
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Doping in III-V Semiconductors

E. F. Schubert

Cambridge U. P., New York,
1993. 606 pp. \$79.95 hc
ISBN 0-521-41919-0

The foreword to *Doping in III-V Semiconductors* contains the familiar rallying cry that "III-V semiconductors can do all that Si can do and more—they emit light." I was therefore a little apprehensive that this book would be a tedious advocacy for compound semiconductors. Fortunately, that is not the case. Fred Schubert has written a book that very nicely fills two roles: It serves as a reference volume for those of us who use III-V materials, and it provides enlightening explanations of interesting and important problems in semiconductor physics. This is less a specialist's book than it may seem from the title. Much of the physics of impurities is common to all semiconductors, while the literature of III-V semiconductors is filled with the intriguing physics of thin layers and quantum structures made possible by epitaxial growth techniques.

Schubert, who is employed by AT&T Bell Laboratories, brings his extensive research involvement with III-V materials physics straight to this book. His lucid explanations of some of the important physics of doped semiconductors is a major strength. For example, the chapter on deep centers provides the clearest treatment of the DX center I can remember reading, and it uses the large lattice distortion model and configurational coordinates introduced for the DX center to describe the EL2 deep level. This book can also serve as an excellent reference volume, because it briefly describes epitaxial growth techniques and the doping methods used with them, catalogs dopant-related phenomena, describes characterization techniques and provides 45 pages of citations to published articles and books.

Doping in III-V Semiconductors is not, however, a textbook of solid state physics and semiconductors for beginning graduate students. Although certain basic topics such as the Bohr

atom are treated for completeness, the book assumes a familiarity with quantum mechanics, the physics of the solid state and semiconductor physics that few graduate students will possess until they are nearly finished with their course work, if then. On the other hand, because it is not written primarily as a textbook, we are spared end-of-the-chapter problem sets and color-highlighted pedagogical devices. Oh blessed relief!

The book is the first volume of the planned *Cambridge Studies in Semiconductor Physics and Microelectronic Engineering*, which recognizes the increasing interdependence of semiconductor physics and devices as dimensions shrink. I will use it to help educate my graduate students in the physics of semiconductors. I may even use it, in conjunction with more fundamental texts, for a course in compound semiconductor materials. It will certainly be available on my bookshelf, in part to remind me what the Burstein-Moss shift is and in part for the literally hundreds of references that it provides on nearly every topic related to III-V semiconductor doping. Because of its clarity in treating some interesting phenomena of modern semiconductor physics, you too might want to get a copy of this book, even if you believe that Ga and As are just poor alternatives for doping silicon.

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Physics of the Pulsar Magnetosphere

V. S. Beskin, A. V. Gurevich and Ya. N. Istomin (Translated by M. V. Tsaplina)
Cambridge U. P., New York,
1993. \$125.00 hc
ISBN 0-521-41746-5

This book will be of interest to the tiny community of theoretical physicists interested in the difficult task of constructing an adequate theory of the radio emission from rotation-powered pulsars. It is exemplary in its attempt to explain in full detail the authors' own attempt to construct such a theory and compare it to observation. The attentive reader will also find between the covers a detailed example of how mathematical erudition can triumph over physical good sense.

The authors offer a brief introduction to the basic observational facts about pulsars (both the rotation-pow-

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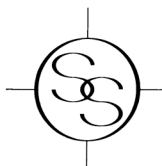
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