

optical techniques such as RDS, spectroscopic ellipsometry, photoreflectance, Raman spectroscopy and second-harmonic generation. Chapter 20 (E. Bauser, 60 pp.) shows that LPE, by combining the advantages of bulk solution growth and epitaxy, provides a useful technique to prepare multilayer structures with high-quality interfaces, by an atomic growth mechanism controlled by pure step flow that can result in minimum defect density. Chapter 21 (E. I. Givargizov, 53 pp.) treats epitaxial phenomena occurring during growth of crystals and crystalline films on amorphous substrates that are governed not by atomistic crystallographic factors, as in classical heteroepitaxy, but by macroscopic effects (macrosteps, macroparticles) brought about by external interactions through mechanical, thermal, chemical or electric fields. The last chapter of Part *b* (A. Zunger, 53 pp.) contains experimental evidence and physical explanations for coherent epitaxy-induced structural changes in thin films relative to bulk solids that reveal themselves in: (i) formation/stabilization of compound crystal structures unstable in bulk form at otherwise equivalent conditions; (ii) epitaxial stabilization of binary and ternary alloy solid solutions having only limited stability in bulk form; (iii) composition pinning in epitaxial alloys lattice-matched to the substrate; and (iv) electronic consequences of coherent epitaxy.

The editorial and typographical quality of the book is generally very high. Unfortunately, this cannot be said about the subject index, which is rather trivial and only poorly reflects the true content of the articles. A hierarchical listing of the entries would have been preferable. The volume is a treasure trove of state-of-the-art information on one of the technologically most important crystal-growth techniques. Crystal growers, solid-state physicists and chemists, semiconductor physicists and engineers, electronic engineers and materials scientists will all benefit from studying this comprehensive treatise.

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### Books Received

*The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally, a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.*

#### **Ordering and phase transitions in charged colloids.**

Edited by A. K. ARORA and B. V. R. TATA. Pp. xi + 361. Weinheim: VCH Verlagsgesellschaft, mbH, 1996. Price DM 185.00. ISBN 1-56081-917-0. Colloidal dispersions have many interesting properties that 'almost mimic all the phases of condensed matter'. This volume covers a wide range of experimental and theoretical investigations into the title topic. Experimental techniques discussed include video microscopy, optical Bragg and Kossel diffraction, light scattering and ultra-small-angle X-ray scattering. Theoretical tools discussed include density-function theory, computer simulations and inversion methods. Both the 'repulsive' and the 'attractive-repulsive' schools of thought are represented.

#### **Metallomesogens – synthesis, properties and applications.**

Edited by J. L. SERRANO. Pp. xix + 498. Weinheim: VCH Verlagsgesellschaft, 1996. Price DM 298. ISBN 3-527-29296-9. A review of this book, by Peter Maitlis, has been published in the April 1997 issue of *Acta Crystallographica Section B*, pages 323–324.