

three specific areas prominent in recent years. Chapter 9 deals with superionic conductors including silver iodide and various fluoride-related phases, Chapter 10 considers molecular systems including ice, C<sub>60</sub>, plastic phases, phases of various solidified gases, and Chapter 11 discusses framework structures, particularly in the context of the silica polymorphs.

My only slight criticism is that the book ends rather abruptly! Perhaps this is because the topic is one that is very much ongoing and the book relates only the 'story so far'. A brief chapter devoted to possible future developments and directions would have nicely rounded off what is otherwise a really excellent volume.

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**Phonons in nanostructures.** By Michael A. Strocio and Mitra Dutta. Pp. 288. Cambridge: Cambridge University Press, 2001. Price GBP 65.00. ISBN 0 52 179279 7.

During the last fifteen years, M. Strocio has devoted his scientific activity to the understanding of phonon physics in low-dimensional structures. He recently collected his notes and with his wife, M. Dutta, has synthesized them into this comprehensive monograph on the latest developments in the theory of crystal dynamics in semiconductor nanostructures. The presentation is clear and pedagogic, with detailed and

elegant mathematical derivations from fundamental principles and wave equations to special expressions of phonon equations in quantum-confined semiconductor structures. Non-experts will be delighted by the organization of the book, which starts with basic considerations on semiconductor crystals and leads them through general topics on crystal dynamics of bulk materials, progressively, to the theory of phonon physics in nanoscale systems. For each section, a long list of relevant references is appended. Special attention is paid to the influence of dimensionality on electron-phonon interaction in zinc-blende and wurtzite crystal structures, and the corresponding scattering rates in quantum wells, quantum wires and quantum dots. In passing, specific issues on non-equilibrium phonons and phonon generation in nanostructures are discussed. The final two chapters are devoted to the role of confined phonons in nanoscale semiconductor optics and, more specifically, to the stimulating topic of phonon engineering in nanostructures, with the ultimate goal of controlling dissipation and boosting the performances of electronic and optoelectronic devices.

Overall, this book is appropriate for researchers and graduate students in physics, engineering, materials science and chemistry, who have an interest in solid-state technology.

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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.

**Symmetry and structure.** Edited by J. Boeyens. New York: Elsevier Science, 2001. *Crystal Engineering*, special issue, Vol. 4, Nos. 2–3, pp. 61–291. Price not available. ISSN 1463-0184. Selected proceedings of the IUCr Workshop, Indaba III, 2000, Skukuza, South Africa. Contains an introduction by the editor and 15 additional contributions.