

Acta Cryst. (1986). A42, 408

L'ordre et le désordre dans les matériaux. Scientific editors F. REYNARD, N. CLÉMENT and J. J. CONDERC. Pp. xiv + 396. Les éditions de physique, Avenue du Hoggar, BP 112, 91944 Les Ulis Cedex, France 1985. Price unknown.

This book contains the lectures given at the Aussois school on 'Order and disorder in materials', in 1984, by a number of experts on the subject.

The main merit of the book is that, even if it is addressed to people with 'graduate expertise' on solid-state physics and thermodynamics, it also contains a lot of up-to-date information, not only on order-disorder transitions but on related topics as well.

Both theoretical and experimental sections are well written. The theoretical framework is sufficiently comprehensive. One paper treats the applications of the 'group action theory' to order-disorder transitions and it is shown how this theory gives a simple account of symmetry breaking. This subject is, by itself, a little heavy, but the effort of reading is well counterbalanced by the simplicity one finds in the final picture of the phenomena.

Other papers treat the applications of the grand canonical ensemble and of the Bragg-Williams theory to order-disorder transitions. Another interesting contribution points out how the 'cluster variation method' (a variant of the mean field theory) can still be very useful in calculating alloy phase diagrams.

Much space is also devoted to the major role that dislocations play in radiation effects as well as on deformation mechanisms. Papers (containing a very useful bibliography) are also devoted to the interesting problems of shape-memory alloys, and of two-dimensional systems.

Several contributions are devoted to experimental investigations of structural properties and they report on X-ray and neutron diffraction and diffuse scattering, on electron microscopy methods, and on EXAFS and Mössbauer techniques. Other contributions are presented on order-

disorder in minerals and on the applications of ordered alloys.

As a final point - a few words on the introduction by A. Guinier: Briefly, and very clearly, he reviews the essential questions, beautifully setting out both what is now well understood as well as what still calls for further speculation.

In summary, the book can be read with pleasure and, because of the quality of some of the papers and the amount of information it contains, it deserves a place on the desk of any person beginning to work in this field.

G. CUBIOTTI

Istituto di Fisica Teorica
dell'Università di Messina
Via di Verdi
98100 Messina
Italy

Acta Cryst. (1986). A42, 408

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.

Tunable solid state laser for remote sensing. Edited by R. L. BYER, E. K. GUSTAFSON and R. TREBINO. Pp. xi + 153. Berlin, Heidelberg, New York, Tokyo: Springer-Verlag, 1985. Price DM 85.00.

Medium-energy ion reflection from solids. By E. S. MASHKOVA and V. A. MOLCHANOV. Pp. xviii + 444. Amsterdam: North-Holland, 1985. Price Dfl 270.00.

Fractals in physics. Edited by L. PIETRONERO and E. TOSATTI. Pp. xii + 476. Amsterdam: Elsevier, 1986. Price Dfl 150.00.