

## Book Review

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### *Handbook of Magnetic Materials, Volume 6,*

edited by K. H. J. Buschow, ISBN 0-444-88952-3, US\$ 214, 654 pp., more than 500 illustrations.

This book is the sixth volume in a large series on magnetic materials. An earlier volume has already been reviewed in the *Journal of the Less-Common Metals*, 175 (1991) 369–370.

One can only compliment the editors of this handbook, Peter Wohlfarth and Jürgen Buschow (1) on having the courage to undertake such an enormous task and (2) on the results they have achieved with the volumes which have already appeared. Certainly they are worthy successors and extensions of Bozorth's classic text.

After Peter Wohlfarth's untimely death the burden as sole Editor has been taken up by Professor K. H. J. Buschow, and he managed to take over without any visible gap in the publication.

In the *Foreword*, K.H.J. Buschow discusses the change of title of this *Handbook* series from *Ferromagnetic Materials* to *Magnetic Materials* — this reviewer finds it most appropriate for the topics and most useful for the user of the book, even if it puts an even heavier load on the Editor.

The present volume has a total of six contributions, which may be divided into three groups. The first two chapters by H.-S. Li and J. M. D. Coey from Trinity College in Dublin and A. Szytuła from the Jagellonian University in Krakow, cover the magnetic properties of rare-earth compounds. A third chapter by O. Beckman and L. Lundgren of Uppsala University discusses compounds of transition elements with nonmetals, e.g. boron, silicon, phosphorus and sulfur. The

careful and hard work of the authors is shown by a literature list in this chapter of more than 500 entries.

The next two chapters deal with *Amorphous Alloys* (P. Hansen, Philips, Aachen) and *Magnetism and Quasicrystals* (R. C. O'Handley, R. A. Dunlap and M. E. McHenry, MIT, Cambridge, MA), a chapter with a total of more than 50 pages, 44 figures and more than 200 references.

The last section, *Magnetism of Hydrides*, by G. Wiesinger and G. Hilscher, TU Wien, concerns binary and multi-component hydrides of the rare earth elements, of actinides, of manganese, the iron group elements and "miscellaneous compounds", amongst these oxygen-stabilized titanium and zirconium-based intermetallics. The reviewer missed somehow the alkali metal and alkaline earth metal hydrides — is there so little work done on their magnetic properties? — and naturally the platinum group metals; the title of this chapter may be misleading in this case. Maybe the platinum group metals are already in the pipeline — a gigantic task of at least one volume if done in the same style as the other volumes.

This review should close with the identical finishing remark of the review on the earlier volume: "It is both a well-written textbook and a reference work. If the reviewer got drawn into it what else can the readers expect?"

This series should make more fans for magnetic materials — not only in magnetic recordings or electric trains do they shape our lives today!

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