

Book Review

Ceramic Heat Exchanger Concepts and Materials Technology. By C. Bliem *et al.*, Noyes Publications, Park Ridge, New Jersey, 1985. 385 pp. Price \$45.00.

The publication of this book is particularly timely from the European viewpoint, as the momentum for the subject is building up but is still significantly behind that achieved in N. America and the appearance of books such as this can only help redress the imbalance.

The information in the book is from two sources, 'Evaluation of Selected Advanced Heat Exchangers for Waste Heat Recuperation of High Temperature Streams' by Bliem *et al.* of EG & G, Idaho for the US Department of Energy and 'An Assessment of Ceramic Materials Technology for Heat Exchangers' by Barna *et al.* of EG & G, Federer and Bomar of Oak Ridge National Laboratory, again for the US Department of Energy. These contributions are split clearly into Part I, entitled 'Ceramic Heat Exchanger Concepts' and Part II on 'Materials Technology'. However, valuable as it has been to concentrate subject matter relating to Ceramic Heat Exchangers in one volume, the pitfall of duplication has not been avoided. Consequently, Chapter 3 of Part I and Chapter 2 of Part II could have been condensed into a more effective section on Recuperator Designs, thereby also reducing the number of printed pages. This would undoubtedly have helped the praiseworthy declared aim of the publishers to keep the price at a 'reasonable level' for a specialist hardback. In achieving this aim, direct photo-offset from original reports has been used in part and this generally gives a quite readable text except for some

of the Appendices, where many design calculations are expanded upon. In some instances this does present legibility problems, although the 'whole-food cookery book'-style presentation is not as incongruous as might be expected and is indeed quite refreshing.

Although very short at 3 pages the attempt at the end of Part I to identify Research and Development needs is laudable and is to be commended to other authors as a useful contribution in books of this type. At the end of the book 32 pages are devoted, very usefully, into a collation of Ceramic Material Properties of those materials likely to be, or now being employed, in recuperator tubes. This will prove very valuable to those working in areas concerned with the utilisation of these materials or in materials development itself; however, an index of material grades covered would also have been very helpful.

The stress and environmental problems faced by the ceramic components in recuperators are not in many cases dissimilar to those faced by the same type of materials in, for example, engines. By the same token the 47 pages entitled 'Design-related Materials Technologies' are not out of place and are equally applicable in other areas where ceramics are being used as engineering materials and where problems of non-destructive and proof testing have to be addressed.

A very worthwhile addition to the bookshelf of anyone seriously engaged in work in this area, and the price is reasonable.

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