



BOOK REVIEW

P. A. PILAVACHI (Editor), **Energy Efficiency in Process Technology**. Elsevier Applied Science, London and New York, 1993, XXV+1280 pp, 156 tables, 709 illustrations, £210.00.

This book contains papers presented at the 1992 Athens Conference on energy efficiency in process technology. The Conference was organised by the editor of this book and an international scientific committee, and sponsored by DGXII of the Commission of the European Communities with the participation of the Centre for Renewable Energy Resources, Greece, the European Federation of Chemical Engineering, the European Chemical Industry Council, Aluminium of Greece and Eurotherm.

The papers are presented in a logical manner, in 15 sections, corresponding to the 15 Conference Sessions, with the following titles:

Plenary Session

1. Overview of Energy Intensive Sectors
2. Thermodynamic Cycles
3. Drying
4. Sensors and Instrumentation
5. Separation Processes
6. Refrigeration and Refrigerants
7. Heat Exchangers
8. Furnaces, Kilns and Ovens
9. Combustion
10. Process Integration
11. Dynamic Simulation and Batch Processes
12. Efficient Production and Use of Electricity
13. Chemical Reactors
14. New Process Routes
15. Exergy Analysis

An index of contributors closes the book.

The Conference objective, as stated by the editor in his Preface, was "to provide an international forum for the presentation and discussion of recent R&D relevant to energy efficiency, taking into account environmental aspects, in the energy-intensive process industries". That stated objective has been adequately accomplished and the editor is to be congratulated for inviting and collating all of 110 papers with interesting material in a single, handsome volume.

This work of over 1280 pages with 156 tables and 709

illustrations covers almost the whole spectrum of current R&D in universities, industries and national research centres in Europe, from the basic science to practical aspects and innovations. About one-third of the work included is supported by the EC JOULE programme.

The papers, as is always the case in this type of Conference Proceedings, are varied both in approach and level of sophistication. It is difficult in one review to do justice to every part of this work, and detailed criticism of each section is better left to users and specialists. In my opinion, the book is well organised for reference purposes. The strong point of the book is that it draws together in one place information, and examples of a wide variety of methods and applications, normally found scattered in books and papers.

The book is well set out, well bound and it is easy to find one's way about it, although it is a very large book. All papers included are informative, free from serious misprints and errors, with up-to-date references that permit a thorough overview of the relevant fields. They differ in quality of typeface but they are all clear with fair diagrams and well laid out mathematical formulae. More importantly they are all of a high standard, and many describe innovations and improvements to various industrial processes.

The keynote lectures (13 of them, by international experts) provide summaries of the state of the art in several important processes.

The book is likely to become a good reference for all engaged in industrial process design and energy saving. They will find a generous stock of material to suit their needs.

It is gladly recommended to anyone who is seeking information on energy saving, on the current direction which the R and D in energy efficiency is taking, and on industrial design in general. It is also recommended to anyone wishing to apply for support from the CEC, to researchers in the field, and to the academics who wish to develop advanced courses in unit operations and energy efficiency.

Finally, it is recommended to any practising engineer who wishes to gain further experience of the topic.

Unfortunately the price of the book will deter most individual purchasers. However, it will find its place in the libraries of all relevant organisations.

It is a most welcome book.

N. C. MARKATOS
National Technical

University of Athens, Athens, Greece