

BOOK REVIEWS

Selection of books for review is based on the editor's opinions regarding possible reader interest and on the availability of the book to the editor. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.



Driven Magnetic Fusion Reactors

<i>Editor</i>	B. Brunelli
<i>Publisher</i>	Pergamon Press, Inc., Elmsford, New York (1979)
<i>Pages</i>	476
<i>Price</i>	\$60.00
<i>Reviewer</i>	David M. Woodall

This book contains the written lectures of the International School of Fusion Reactor Technology course held in Erice-Trapani, Italy, on September 18-26, 1978. Entitled *Driven Magnetic Fusion Reactors*, the course followed three others in fusion reactor technology in which more conventional fusion energy devices were considered. Much of the value of the book to the fusion energy community is in the concatenation of the ideas of those lectures into a single reference. The devices and physics described in this text are not emphasized in the mainline fusion energy programs of our country or others.

The book has 20 chapters summarizing the lectures of the course and was authored by about 15 individuals. As one would expect from such a collection, the book does not read smoothly. There is a great deal of variation among chapters, with some being highly technical expositions of particular research activities, while others are more prosaic discussions of fusion reactor concepts. Nevertheless, the content is quite worthwhile for the initiate and novice alike in the fusion engineering field.

The strength of the book is in its broad perspective of concepts on the periphery of ignited-fusion research programs. The review of mirror reactors is fairly comprehensive, while that of two-component tokamaks is skimpy but adequate. The book provides a useful insight into potential alternative applications of fusion, such as fusion-fission hybrids or "fuel factories."

More of the thought contained in this text is necessary in order for us to formulate wise, long-term plans for the role of fusion plasmas in our society. The book is recommended reading for those who desire to keep abreast of the changing perspective of fusion energy as well as those who are firmly embedded in research in more conventional fusion areas. There are chapters that may be valuable to individuals needing information in a particular area, even though much of the status-of-technology portion of the text, which is about half, will soon be out of date. While the book is recommended, it is unlikely to be a valuable

long-term addition to any personal library, belonging instead in a competent technical or university library.

David M. Woodall (BA, physics, Hendrix College, 1967; MS, nuclear engineering, Columbia University, 1968; PhD, engineering physics, Cornell University, 1974) is an associate professor and chairman of the Chemical and Nuclear Engineering Department at the University of New Mexico. His recent research activities are in the plasma physics and fusion energy areas. He is actively involved in joint research with the Air Force Weapons Laboratory and Sandia National Laboratories. His professional experience includes work as a nuclear engineer with Westinghouse Nuclear Energy Systems and teaching at the University of Rochester, prior to joining the faculty at the University of New Mexico.

Nuclear Engineering for an Uncertain Future (in English)

<i>Editors</i>	Keichi Oshima, Yoshitsugu Mishima, and Yoshio Ando
<i>Publisher</i>	Plenum Press, New York (1981)
<i>Pages</i>	279
<i>Price</i>	\$45.00
<i>Reviewer</i>	Lee M. Hively

This is the "official record" of a two-day symposium held in November 1980 in honor of the 20th anniversary of the Nuclear Engineering Department at the University of Tokyo. Contrary to the title, however, the contents are optimistic in their outlook for both fission and fusion power. Each of the seven parts consists of papers by one or two eminent American or European authors together with a companion paper by a Japanese expert, followed by a short discussion. The topics include: international cooperation, the nuclear fuel cycle, safety, fast breeders, fusion, the impact of nuclear technology on other fields, and the role of nuclear engineering education (a panel discussion). As an assessment of current issues and problems in nuclear engineering, the book would be interesting and comprehensible to a general engineering audience. Even so, there is sufficient detail to benefit nuclear specialists. While this is a good attempt to comprehensively review the above topics, the coverage is uneven, depending on the authors' interests and expertise.