There are other themes worthy of consideration running through the book. The most significant among these which apply to the relation between technological change and cultural change can be found in his concluding chapter. I find well-placed his stress upon the man-created environment as a complex of factors having tremendous effect upon man and his history. His call for us somehow to exercise more control over this environment which, though man-made, has a mass and a movement that seem to defy control, is also provocative and convincing.

Thomas P. Hughes is a visiting professor in the Johns Hopkins History Department teaching the History of Technology. A member also of the Center for the Study of Recent American History, he is writing a biography of engineer-inventor Elmer Sperry of gyroscope fame. The works he has edited include Lives of the Engineers *and* The Development of Western Technology.

RUNNING ON A TREADMILL

Title Semiconductor Counters for Nuclear Radiations, 2nd ed.

Authors G. Dearnaley and D. C. Northrop

Publisher John Wiley & Sons, Inc., 1966

Pages xx + 459

Price $12.75

Reviewer Brian D. Pate

This is the second edition of a book which, even though it suffers from the disadvantage of dealing with a fast-moving field, continues to be a useful reference text. It now contains descriptions of experimental procedures sufficiently detailed to permit the occupant of a reasonably well-supplied laboratory to fabricate his own semiconductor detectors of good quality, improve their longevity, and apply them to a variety of problems.

In addition, the treatment of device physics, particularly of charge collection and noise in semiconductor detectors, is of such lucidity that the average experimentalist can learn much of the quixotic physics and chemistry that lie behind this entire field.

The main differences between the first and second editions of this book reflect the advances that occurred in this field between May 1963 and September 1965. First and foremost was the rapid advance in the techniques of lithium drifting and the successful application of large-volume lithium-drifted silicon and germanium detectors to high-energy charged-particle spectroscopy and gamma-ray spectroscopy, respectively. This success has led to relatively less attention being paid to homogeneous conduction counters and gamma detectors fabricated from higher Z semiconductors, a change in emphasis reflected in this book.

Other advances reported are the discovery of "channeling" in the interactions of charged particles with crystals and the development of more sophisticated instrumentation for use with semiconductor detectors.

In short, this is a book that has a place in the book shelf of every experimentalist interested in making or using semiconductor detectors. This writer's main criticism of the second edition is, however, that it was, in a sense, published too soon. Since September 1965, there has been a continuous stream of publications (in the IEEE *Transactions on Nuclear Science, Nuclear Instruments and Methods,* and AECL Chalk River Reports, to mention only three media) that have reported the fundamental discoveries and rapid progress that has been made (particularly in the field of lithium drifting) in the last 18 months.

Hindsight is, however, always 20-20 and perhaps the authors were right in not delaying the publication of the second edition. It is entirely possible that, had this book been written in 1967, a reviewer might, in 1969, still be regretting the failure to include the latest and most exciting developments.

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SPREAD THE BURNING SAND

Title Water Production Using Nuclear Energy

Editors Roy G. Post and Robert L. Seale

Publisher University of Arizona Press, 1966

Pages 392

Price $7.50

Reviewer Lionel S. Galstaun

This volume comprises a collection of papers presented at a symposium held in March 1966 under sponsorship of the Nuclear Engineering Department of the University of Arizona. The topic of the symposium, the use of nuclear energy in desalting water, has been approached on a very broad basis; papers were presented on the future needs of water; the sociological, economic, and legal aspects which might confront large-scale desalting facilities; and directions of future advances in both nuclear and desalting technology. In addition, one paper describes the NAWAPA concept which would develop new sources of water and power for the greater part of the North American continent from streams in Alaska and Canada.

The greater portion of the book is concerned with descriptions of the state-of-the-art as of March 1966 in nuclear heat sources and desalination. Primary emphasis has been on large plants producing water at minimum cost. The reader is left with the impression that the results described are likely to be close to the ultimate that can be achieved using present technology, scaled up in size. This is likely to be the