

only two slim volumes have been published on this important subject: *Radiolysis of Hydrocarbons*, edited by A. V. Topchiev (1963) and *Aspects of Hydrocarbon Radiolysis*, edited by T. Gäumann and J. Hoigné (1968). Both remain useful sources of information and ideas, although they were incomplete even at the time of their publication.

The new book by Professor Földiák and his colleagues is comprehensive as well as up to date. It contains a fine introductory chapter on the fundamental physical and chemical effects following the deposition of energy from ionizing radiation and the experimental methods of measuring these effects. In the closing chapter, Földiák makes a penetrating analysis of the status of research in this field and of the industrial implications and applications. Between these two chapters are five others consisting of well-written, brief descriptions of a large body of experimental information, along with numerous tables, figures, and references. Qualitative explanations and correlations are offered at appropriate points, and there are some efforts to present unifying models, but the principal value of this book is to be found in its wealth of experimental information.

There are some minor flaws in this fine work. A reactor engineer might be disappointed to find only ten references to the radiation chemistry of the terphenyls. A polymer chemist should look elsewhere for detailed information on the chemical effect of ionizing radiation on polyolefins and polymerizable hydrocarbons. The section on the radiation chemistry of methane omits references to some of the most important electron spin resonance studies performed at 1.6 to 4 K. An author index would have been useful. In almost all other respects the book meets the worthy objectives of its Hungarian authors. They have produced a work of enduring value that belongs on the bookshelf of every radiation chemist.

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**Proceedings of the 36th Industrial Waste Conference—Purdue University**

*Editor* John M. Bell  
*Publisher* Butterworth Publishers, Inc., Woburn, Massachusetts (1982)  
*Pages* 997  
*Price* \$69.95  
*Reviewer* Stephen G. Margolis

This is a collection of 95 papers in 20 categories. Other than a passing reference (in the keynote address) to the Three Mile Island radiation release, the question of nuclear waste management is not specifically mentioned in any of the 95 papers. Its principal value to nuclear engineers, then,

is to give a background perspective on industrial wastes generally.

Primarily, the papers concern the treatment of wastes produced chronically by the process industries. These wastes are produced in large volumes by a mind-boggling variety of industries. The wastes considered include swine waste, poultry carcasses, heavy metals, the explosives TNT and RDX, paper mill effluents—in short, a panoply of biological, chemical, and physical pollutants that have in common *only the absence* of radioactivity.

One paper, "Emergency Response to a Major Agricultural Chemical Warehouse Fire," by Ryckman et al. (pp. 212-223) deals with the procedures used in an acute incident—a warehouse fire—which required evacuation of a downwind area and a major postfire cleanup effort (\$500 000 and 250 000 gal of contaminated water). The paper concludes that the incident was resolved with no injuries, no lasting environmental impacts, and no litigation. This is in sharp contrast to the typical acute nuclear incident. In the chemical fire cited, the key ingredients for successful resolution of the incident appear to have been timely action by a state authority, a cleanup consultant, and an insurance company, all having unquestioned jurisdiction and all located within 50 miles of the incident site.

Can nuclear engineers learn anything from this collection of papers? It appears that the way to stay off the network news is to take action that is timely, local, and informed.

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**Radiochemistry, Hot Atoms, and Physical Chemistry**  
 [Vol. II of the Collected Papers of  
 Willard F. Libby (deceased)]

*Editor* Leona Marshall Libby  
*Publisher* Geo Science Analytical and the University of California at Los Angeles (1982)  
*Pages* 540  
*Price* \$15.00  
*Reviewer* Jeffrey I. Steinfeld

The publications of the late W. F. Libby are being edited by his widow, Leona Marshall Libby, in a series of paperbound volumes. In this volume, his papers on radiochemistry and physical chemistry are collected. Included are brief reminiscences by W. G. McMillan and John A. McCone, 31 papers on hot-atom and radiation chemistry, 53 additional papers on a wide variety of topics in physical chemistry, and transcripts of 14 unpublished lectures.

A collection of this type cannot, of course, serve as a definitive scholarly presentation of any of the wide variety