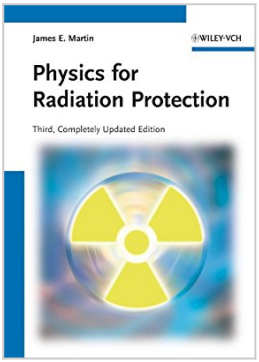

Physics for Radiation Protection

By James E. Martin

Physics for Radiation Protection By James E. Martin

A practical guide to the basic physics that radiation protection professionals need

A much-needed working resource for health physicists and other radiation protection professionals, this volume presents clear, thorough, up-to-date explanations of the basic physics necessary to address real-world problems in radiation protection. Designed for readers with limited as well as basic science backgrounds, Physics for Radiation Protection emphasizes applied concepts and carefully illustrates all topics through examples as well as practice problems.

Physics for Radiation Protection draws substantially on current resource data available for health physics use, providing decay schemes and emission energies for approximately 100 of the most common radionuclides encountered by practitioners. Excerpts of the Chart of the Nuclides, activation cross sections, fission yields, fission-product chains, photon attenuation coefficients, and nuclear masses are also provided. Coverage includes:

- The atom as an energy system
- An overview of the major discoveries in radiation physics
- Extensive discussion of radioactivity, including sources and materials
- Nuclear interactions and processes of radiation dose
- Calculational methods for radiation exposure, dose, and shielding
- Nuclear fission and production of activation and fission products
- Specialty topics ranging from nuclear criticality and applied statistics to X rays
- Extensive and current resource data cross-referenced to standard compendiums
- Extensive appendices and more than 400 figures

This complete discussion of the basic concepts allows readers to advance their professional skills.

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Editorial Review

Review

"The book is intended as a comprehensive treatise about all the physics aspects upon which radiation protection is based." (*Health Physics*, 1 March 2014)

"A highly practical resource for health physicists and other professionals in radiation protection." (*ETDE Energy Database*, 1 October 2013)

From the Back Cover
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About the Author
JAMES E. MARTIN, PhD, CHP, is Associate Professor (Emeritus) at the University of Michigan where he has done research and teaching on environmental and public health aspects of radiation with an emphasis on radiation physics since 1982. He also served 25 years (1957-81) with the U.S. Public Health Service and Environmental Protection Agency, doing environmental assessments of radioactive materials including protection standards. His doctorate is in Radiological Health. Professor Martin is certified in Health Physics by the American Board of Health Physics and has published over 40 peer-reviewed papers and numerous articles and reports. Advisory Committee memberships include two National Academy of Science committees, the Science Advisory Board of the Environmental Protection Agency, and the U.S. Department of Energy.

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