1. Record Nr. UNINA990000985580403321

Autore	Dresner, Lawrence
Titolo	Resonance Absorption in Nuclear Reactors / By Lawrence Dresener
Pubbl/distr/stampa	Oxford [etc.] : Pergamon Press, 1960
Collana	International series of monographs on nuclear energy ; 4
Disciplina	539.74
Locazione	FI1
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Lingua di pubblicazione	Inglese
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Titolo	Active Interrogation in Nuclear Security : Science, Technology and Systems / / edited by Igor Jovanovic, Anna S. Erickson
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ISBN	3-319-74467-4
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Descrizione fisica	1 online resource (XI, 361 p. 171 illus., 138 illus. in color.)
Collana	Advanced Sciences and Technologies for Security Applications, , 1613-5113
Disciplina	621.389
Soggetti	System safety Nuclear energy Nuclear physics Materials science Physical measurements Measurement Security Science and Technology Nuclear Energy Particle and Nuclear Physics Characterization and Evaluation of Materials Measurement Science and Instrumentation

Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- chapter 1 Introduction -- chapter 2 Measurement needs and challenges in nuclear security -- chapter 3 Features and limitations of passive measurements -- chapter 4 Foundations of active measurements -- chapter 5 Radiation sources for active interrogation -- chapter 6 Detectors and measurement techniques -- chapter 7 Data acquisition and processing systems -- chapter 8 Modeling and simulation -- chapter 9 Data interpretation and algorithms -- chapter 10 Examples of active measurement systems -- chapter 11 Radiation dose in various systems -- chapter 12 Science and technology trends -- Conclusion.
Sommario/riassunto	This volume constitutes the state-of-the-art in active interrogation, widely recognized as indispensable methods for addressing current and future nuclear security needs. Written by a leading group of science and technology experts, this comprehensive reference presents technologies and systems in the context of the fundamental physics challenges and practical requirements. It compares the features, limitations, technologies, and impact of passive and active measurement techniques; describes radiation sources for active interrogation including electron and ion accelerators, intense lasers, and radioisotope-based sources; and it describes radiation detectors used for active interrogation. Entire chapters are devoted to data acquisition and processing systems, modeling and simulation, data interpretation and algorithms, and a survey of working active measurement systems. Active Interrogation in Nuclear Security is structured to appeal to a range of audiences, including graduate students, active researchers in the field, and policy analysts. The first book devoted entirely to active interrogation Presents a focused review of the relevant physics Surveys available technology Analyzes scientific and technology trends Provides historical and policy context Igor Jovanovic is a Professor of Nuclear Engineering and Radiological Sciences at the University of Michigan and has previously also taught at Penn State University and Purdue University. He received his Ph.D. from University of California, Berkeley and worked as physicist at Lawrence Livermore National Laboratory. Dr. Jovanovic has made numerous contributions to the science and technology of radiation detection, as well as the radiation sources for use in active interrogation in nuclear security. He has taught numerous undergraduate and graduate courses in areas that include radiation detection, nuclear physics, and nuclear security. At University of Michigan Dr. Jovanovic is the director of Neutron Science Laboratory and is also associated with the Center for Ultrafast Optical Science. Anna Erickson is an Assistant Professor in the Nuclear and Radiological Engineering Program of the G.W. Woodruff School of Mechanical Engineering at Georgia Institute of Technology. Previously, she was a postdoctoral researcher in the Advanced Detectors Group at Lawrence Livermore National Laboratory. Dr. Erickson received her PhD from Massachusetts Institute of Technology with a focus on radiation detection for active interrogation applications. Her research interests focus on nuclear non-proliferation including antineutrino analysis and non-traditional detector design and characterization. She teaches courses in advanced experimental detection for reactor and nuclear nonproliferation applications,

radiation dosimetry and fast reactor analysis.