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Analysis HandbookPhoton Activation AnalysisRadioactive AerosolsRadioactivityRadionuclide
Concentrations in Food and the EnvironmentDie Welt ohne unsLehrbuch der
RadioaktivitätGrundzüge des praktischen StrahlenschutzesNuclear and
RadiochemistryRadioactivity: Introduction and HistoryRadioactive Air Sampling
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Clinical Chemistry Ernest Rutherford war ein neuseeländischer Atomphysiker, der 1908 den Chemie-Nobelpreis erhielt. In diesem Werk finden sich die radioaktiven Umwandlungen. Reprint der Originalausgabe aus 1907.

Sci-tech News A recipient of the PROSE 2017 Honorable Mention in Chemistry & Physics, Radioactivity: Introduction and History, From the Quantum to Quarks, Second Edition provides a greatly expanded overview of radioactivity from natural and artificial sources on earth, radiation of cosmic origins, and an introduction to the atom and its nucleus. The book also includes historical accounts of the lives, works, and major achievements of many famous pioneers and Nobel Laureates from 1895 to the present. These leaders in the field have contributed to our knowledge of the science of the atom, its nucleus, nuclear decay, and subatomic particles that are part of our current knowledge of the structure of matter, including the role of quarks, leptons, and the bosons (force carriers). Users will find a completely revised and greatly expanded text that includes all new material that further describes the significant historical events on the topic dating from the 1950s to the present. Provides a detailed account of nuclear radiation - its origin and properties, the atom, its nucleus, and subatomic particles including quarks, leptons, and force carriers (bosons) Includes fascinating biographies of the pioneers in the field, including captivating anecdotes and

insights Presents meticulous accounts of experiments and calculations used by pioneers to confirm their findings

Handbook of Radioactivity Analysis

Umweltgeochemie Hormone, Antibiotika, Prionen - was noch steckt in unserer Nahrung, was wir nicht sehen können? Lebensmittel können Radioaktivität aus natürlichen und künstlichen Quellen enthalten. Welchen Einfluss haben heute die Atomversuche der Großmächte, die Reaktorkatastrophe von Tschernobyl oder der Betrieb von Kernkraftwerken auf die gesundheitliche Qualität der Lebensmittel? Welche neuen Aspekte dieses Themas sind durch weltweite terroristische Bedrohungen akut geworden? Der langjährige Leiter der Bundesforschungsanstalt für Ernährung und ihrer "Leitstelle zur Überwachung der Umweltradioaktivität in Lebensmitteln", Prof. Dr. Diehl, beantwortet in diesem verständlich geschriebenen Buch alle Fragen zur Radioaktivität in Lebensmitteln, zu radioaktiven Elementen und ihrem Weg in die Nahrung. Er erklärt, wie die Kontamination von Lebensmitteln überwacht wird, wo Radionuklide auch genutzt werden können, welche Möglichkeiten zur Dekontamination es gibt und welchen Einfluss die in Lebensmitteln vorhandene Radioaktivität überhaupt auf den Menschen haben kann. Informativ und interessant werden zunächst die Grundlagen zur Radioaktivität vermittelt, von der Entdeckung der ersten Strahleneffekte durch Konrad Röntgen, Henry Becquerel und Marie Curie über die

Beschreibung von Radionukliden und ihrer Eigenschaften, bis zu den heute gültigen Strahlenschutzgrenzwerten. So wird das Buch nicht nur zum unverzichtbaren Grundlagenwerk für jeden Strahlenschutzbeauftragten, Lebensmittelchemiker, Umweltbeauftragten und Verbraucherschützer, sondern auch für Mediziner, Apotheker, Journalisten und jeden, der sich fundiert über dieses lange vernachlässigte Thema informieren möchte.

*Activation Analysis Handbook This text brings together in one single comprehensive reference, the fundamentals of radioactivity. It uniquely fills the gap in the market, as no other books deal with environmental radioactivity to this degree. * Timely and invaluable as the studies of environmental processes and the awareness of the impact of human activity on our environment are increasing * Links all three main aspects of environmental radioactivity: Principles, Transport and Measurement * Useful to a wide readership - students, lecturers, researchers, companies and environmental consultants*

Photon Activation Analysis

Radioactive Aerosols Handbook of Radioactivity Analysis is written by experts in the measurement of radioactivity. The book describes the broad scope of analytical methods available and instructs the reader on how to select the proper technique. It is intended as a practical manual for research

*which requires the accurate measurement of radioactivity at all levels, from the low levels encountered in the environment to the high levels measured in radioisotope research. This book contains sample preparation procedures, recommendations on steps to follow, necessary calculations, computer controlled analysis, and high sample throughput techniques. Each chapter includes practical techniques for application to nuclear safety, nuclear safeguards, environmental analysis, weapons disarmament, and assays required for research in biomedicine and agriculture. The fundamentals of radioactivity properties, radionuclide decay, and methods of detection are included to provide the basis for a thorough understanding of the analytical procedures described in the book. Therefore, the Handbook can also be used as a teaching text. Key Features * Includes sample preparation techniques for matrices such as soil, air, plant, water, animal tissue, and surface swipes * Provides procedures and guidelines for the analysis of commonly encountered na*

Radioactivity

Radionuclide Concentrations in Food and the Environment Activation Analysis Handbook focuses on the importance of activation analysis in the examination of trace elements in materials. The book contains examples of activation analysis techniques and application of these techniques to provide solutions to problems in various scientific disciplines. Divided into four chapters, the book starts by giving an outline of the history and growth of activation analysis, including the general technique

involved. The discussions proceed by taking into consideration the theoretical aspects of activation analysis, giving emphasis to basic concepts, sources of nuclear data and experimental methods, and selection of activation reactions. The book also considers the experimental methods in activation analysis. Other topics discussed are irradiation facilities; the preparation and encapsulation of samples; irradiations; and post-irradiation assays. The last part deals with the tabulation of elements and their corresponding atomic numbers; the key to tabulation; and a tabulation of nuclear data and experimental methods for activation analysis. The text is a good source of data for readers who are interested in activation analysis.

Die Welt ohne uns This comprehensive, up-to-date, readable text acts as a complete clinical chemistry course and professional reference, providing detailed, specific information on the principles of clinical chemistry in laboratory diagnosis as well as the pathophysiologic changes that occur in disease and affect testing outcomes. Explanations of Laboratory Techniques (Part 1) lead the reader through various necessary laboratory techniques and practices. Chapters on Pathophysiology (Part 2) provide descriptions of how specific diseases affect the human body. A companion CD-ROM packaged with the book features Methods of Analysis, a comprehensive Urinalysis Manual, and an interactive Study Guide/Workbook to reinforce concepts. The book's clear writing and comprehensive coverage make it an ideal resource for both students and practitioners. Instructor resources are available to qualified adopters; contact your sales

representative for more information. A clear and concise writing style facilitates quick understanding and more effective exam preparation. Comprehensive coverage addresses the full range of issues in clinical chemistry. Unique new chapters on Addiction, The Transplant Patient, and Point-of-Care Testing discuss important clinical areas not covered in other books on the subject. A complete bibliography and list of references direct the reader to reliable sources for further exploration of topics. Each chapter begins with an outline and learning objectives, followed by a list of key terms designed to reinforce the most important information in each chapter and make it more memorable. Figures and tables are placed as close as possible to the text to which they refer, to aid reader comprehension. Relevant Internet sites direct the reader to additional online content that complements the topics discussed in each chapter. A companion CD-ROM contains 123 Methods of Analysis, a Urinalysis Section, and a Study Guide/Workbook featuring over 700 questions and 30 case histories, bringing together practical pathophysiology laboratory problems and laboratory analysis. With 68 expert contributors.

Lehrbuch der Radioaktivität As radiological residue, both naturally occurring and technologically driven, works its way through the ecosystem, we see its negative effects on the human population. Radionuclide Concentrations in Food and the Environment addresses the key issues concerning the relationship between natural and manmade sources of environmental radioactivity

Grundzüge des praktischen Strahlenschutzes Handbook of Radioactivity Analysis: Radiation Physics and Detectors, Volume One, and Radioanalytical Applications, Volume Two, Fourth Edition, constitute an authoritative reference on the principles, practical techniques and procedures for the accurate measurement of radioactivity - everything from the very low levels encountered in the environment, to higher levels measured in radioisotope research, clinical laboratories, biological sciences, radionuclide standardization, nuclear medicine, nuclear power, and fuel cycle facilities, and in the implementation of nuclear forensic analysis and nuclear safeguards. It includes sample preparation techniques for all types of matrices found in the environment, including soil, water, air, plant matter and animal tissue, and surface swipes. Users will find the latest advances in the applications of radioactivity analysis across various fields, including environmental monitoring, radiochemical standardization, high-resolution beta imaging, automated radiochemical separation, nuclear forensics, and more. Spans two volumes, Radiation Physics and Detectors and Radioanalytical Applications Includes a new chapter on the analysis of environmental radionuclides Provides the latest advances in the applications of liquid and solid scintillation analysis, alpha- and gamma spectrometry, mass spectrometric analysis, Cherenkov counting, flow-cell radionuclide analysis, radionuclide standardization, aerosol analysis, high-resolution beta imaging techniques, analytical techniques in nuclear forensics, and nuclear safeguards Describes the timesaving techniques of computer-controlled automatic separation and activity analysis of radionuclides Provides an extensive table of the radiation characteristics of most radionuclides of interest for the

radioanalytical chemist

Nuclear and Radiochemistry The leading resource for anyone looking for an accessible and authoritative introduction to nuclear and radiochemistry In the newly revised Fourth Edition of *Nuclear and Radiochemistry: Fundamentals and Applications*, distinguished chemist Jens-Volker Kratz delivers a two-volume handbook that has become the gold standard in teaching and learning nuclear and radiochemistry. The books cover the theory and fundamentals of the subject before moving on the technical side of nuclear chemistry, with coverage of nuclear energy, nuclear reactors, and radionuclides in the life sciences. This latest edition discusses the details and impact of the Chernobyl and Fukushima nuclear disasters, as well as new research facilities, including FAIR and HIM. It also incorporates new methods for target preparation and new processes for nuclear fuel recycling, like EURO-GANEX. Finally, the volumes extensively cover environmental technological advances and the effects of radioactivity on the environment. Readers will also find: - An accessible and thorough introduction to the fundamental concepts of nuclear physics and chemistry, including atomic processes, classical mechanics, relativistic mechanics, and the Heisenberg Uncertainty Principle - Comprehensive explorations of radioactivity in nature, radioelements, radioisotopes and their atomic masses, and other physical properties of nuclei - Practical discussions of the nuclear force, nuclear structure, decay modes, radioactive decay kinetics, and nuclear radiation - In-depth examinations of the statistical considerations relevant to

radioactivity measurements Written for practicing nuclear chemists and atomic physicists, *Nuclear and Radiochemistry: Fundamentals and Applications* is also an indispensable resource for nuclear physicians, power engineers, and professionals working in the nuclear industry.

Radioactivity: Introduction and History The third edition of this classic in the field is completely updated and revised with approximately 30% new content so as to include the latest developments. The handbook and ready reference comprehensively covers nuclear and radiochemistry in a well-structured and readily accessible manner, dealing with the theory and fundamentals in the first half, followed by chapters devoted to such specific topics as nuclear energy and reactors, radiotracers, and radionuclides in the life sciences. The result is a valuable resource for both newcomers as well as established scientists in the field.

Radioactive Air Sampling Methods The publication deals with surveillance and monitoring activities for the purposes of demonstrating the safety of near surface radioactive waste disposal facilities. It covers all phases of facility development from siting through construction and operation to closure. It identifies the activities over which surveillance needs to be exercised and the parameters to be monitored, and provides examples of such programs for present-day facilities. It also addresses programs that may be necessary for older facilities which were not built to present-day standards and for which surveillance and monitoring may have to be carried out to identify remedial

measures to be taken.

Fukushima Accident

Handbook of Radioactivity Analysis

Physics and Engineering of Radiation Detection Whenever radioactivity is released to the atmosphere, for example by the detonation of nuclear weapons or the testing of nuclear weapons or from nuclear reactor accidents that fraction of it which remains airborne for more than a few hours is liable to be attached to aerosol particles. The resulting radioactive aerosols are carried by atmospheric mixing processes until they settle out or are scavenged by precipitation. The radiation exposure pathway of maximum concern to humans is by inhalation of aerosols and their deposition in the respiratory tract. In this context, it is important to note that radioactive aerosols are commonly of natural origin also. In particular, the associated radionuclides can be of natural terrestrial origin, such as the decay products of radon gas, or they can be cosmogenic, such as beryllium-7. The exposure of miners of uranium and other ores and minerals to radon and its aerosol-borne decay products is of major significance. The book describes the formation of aerosols, their aerodynamic size distribution, their atmospheric residence time, their sampling and measurement, the range of radioactive aerosols found and studied thus far, including man-made

nuclides and radon decay products and their interaction with man, including deposition in the lung and subsequent health effects. Advanced level science handbook for researchers, scientists and academics Covers all aspects of radiation exposure in humans, including subsequent health implications Presents the latest findings and analysis in this highly topical area

Radioaktive Umwandlungen Authoritative reference providing the principles, practical techniques, and procedures for the accurate measurement of radioactivity.

Practical Skills in Biomolecular Sciences Nuclear Energy is one of the most popular texts ever published on basic nuclear physics, systems, and applications of nuclear energy. This newest edition continues the tradition of offering a holistic treatment of everything the undergraduate engineering student needs to know in a clear and accessible way. Presented is a comprehensive overview of radioactivity, radiation protection, nuclear reactors, waste disposal, and nuclear medicine. New coverage on nuclear safety concerns following 9/11, including radiation and terrorism, nuclear plant security, and use of nuclear techniques to detect weapons materials New facts on nuclear waste management, including the Yucca Mountain repository New developments in the use of nuclear-powered systems for generating cheap and abundant hydrogen from water using nuclear technology New information on prospects for new nuclear power reactors and their applications for electricity and desalination New end-of-chapter Exercises and Answers, lists of

Internet resources, and updated references

Handbook of Radioactivity Analysis

Choice

The British National Bibliography Contains approximately 20,000 mostly English language sources for academic libraries of all sizes.

IAEA Bulletin This book focuses on tritium as a fuel for fusion reactors and a next-generation energy source. Following an introduction of tritium as a hydrogen radioisotope, important issues involved in establishing safe and economical tritium fuel cycles including breeding for a fusion reactor are summarized; these include the handling of large amounts of tritium: confinement, leakage, contamination, permeation, regulation and tritium accountancy, and impacts on surrounding areas. Targeting and encouraging the students and technicians who will design and operate fusion reactors in the near future, this book offers a valuable resource on tritium science and technology.

Radioaktivität in Lebensmitteln Although the field of radioactive air sampling has matured and

evolved over decades, it has lacked a single resource that assimilates technical and background information on its many facets. Edited by experts and with contributions from top practitioners and researchers, Radioactive Air Sampling Methods provides authoritative guidance on measuring airborne radioactivity from industrial, research, and nuclear power operations, as well as naturally occurring radioactivity in the environment. Designed for industrial hygienists, air quality experts, and health physicists, the book delves into the applied research advancing and transforming practice with improvements to measurement equipment, human dose modeling of inhaled radioactivity, and radiation safety regulations. To present a wide picture of the field, it covers the international and national standards that guide the quality of air sampling measurements and equipment. It discusses emergency response issues, including radioactive fallout and the assets used to assess airborne radioactive emergencies. The book includes a comprehensive series of air sampling methods for commonly encountered radioactive isotopes in the industrial environment that detail the steps to conducting a proper air sampling study. With coverage of fundamental air sampling techniques and practical knowledge, the book provides insight into the contemporary thinking of experts, the maturity of the field, and its deep literature base. Building a bridge between the science behind air sampling and its practice, it supplies the know-how required to achieve technically rigorous air sampling data.

Radiation Hazards Handbook Die wichtigsten Grundlagen des technischen Strahlenschutzes im

Überblick Dieses Standardwerk in 7. Auflage vermittelt grundlegende Kenntnisse über die Quellen ionisierender Strahlung, wie Radioaktivität, Röntgenröhren oder Beschleuniger, und den Schutz gegen diese Strahlungen bei technischen Anwendungen. Es richtet sich insbesondere an Strahlenschutzbeauftragte und Techniker, die für den Umgang mit radioaktiven Stoffen oder die Herstellung bzw. Wartung von Röntgengeräten oder Beschleunigeranlagen zuständig sind. Darüber hinaus wendet es sich auch an Studierende der Fachrichtungen Umwelt- und Strahlenschutz bzw. Gesundheits- und Arbeitsschutz. Neben der Vermittlung von physikalischen Grundlagen liegt der Schwerpunkt des Buches auf der Strahlungsmessung und auf den Schutzmaßnahmen gegen die äußere und innere Strahlenexposition beim Umgang mit umschlossenen und offenen radioaktiven Stoffen sowie auf dem Betrieb von Röntgeneinrichtungen und Beschleunigern in technischen Anwendungsbereichen. Die vorliegende Auflage wurde um aktuelle Themen wie den Schutz vor Radon sowie die Bayes-Statistik im Bereich der Messunsicherheiten ergänzt. Die Buchinhalte berücksichtigen Stand 2019 der Strahlenschutzverordnung (StrlSchV) und des Strahlenschutzgesetzes (StrlSchG). Neben den grundsätzlichen Erläuterungen werden die für viele Aufgabenstellungen erforderlichen Berechnungsregeln dargelegt. Zahlreiche Tabellen und Diagramme vervollständigen den Text, sodass das Buch insbesondere in der Praxis Verwendung finden kann. Eine Anleitung zur Lösung praktischer Probleme wird durch die Beispiele geliefert, bei denen Formeln und Daten angewendet werden. Das Buch wird durch umfangreiche Fachverzeichnisse ergänzt, die dem Leser weiterführende Informationsquellen zur Vertiefung der

Fachkenntnisse erschließen.

Radioactivity

Nuclear and Radiochemistry

Proficiency Testing in Applications of the Ionizing Radiation and Nuclear Analytical Techniques in Industry, Medicine, and Environment Dieses Buch wendet sich an Chemiker, Geo- und Biowissenschaftler im Hauptstudium ebenso wie an Praktiker in Industrie und im öffentlichen Dienst, die Altlasten oder Abfälle bewerten müssen. Für diesen Leserkreis sollen die fachlichen Grundlagen vertieft, die Prioritäten praxisbezogenen Handelns anhand ausgewählter Themenkreise vermittelt und durch ein umfangreiches Literaturverzeichnis effektive Einstiegshilfen für Spezialprobleme gegeben werden. Bei der Beschreibung analytischer Probleme und Methoden sowie der administrativen Regelungen wird ein praxisorientierter Blickwinkel gewählt. Der Leser soll in die Lage versetzt werden, differenzierte Bewertungen kontaminierter Festkörper auf der Grundlage von Schadstoffmobilität und Vorsorgeprinzip zu erstellen und die Flut der Umweltdaten kritisch zu hinterfragen und zu bewerten.

Nuclear Techniques in Integrated Plant Nutrient, Water and Soil Management Radioactivity:

*Introduction and History provides an introduction to radioactivity from natural and artificial sources on earth and radiation of cosmic origins. This book answers many questions for the student, teacher, and practitioner as to the origins, properties, detection and measurement, and applications of radioactivity. Written at a level that most students and teachers can appreciate, it includes many calculations that students and teachers may use in class work. Radioactivity: Introduction and History also serves as a refresher for experienced practitioners who use radioactive sources in his or her field of work. Also included are historical accounts of the lives and major achievements of many famous pioneers and Nobel Laureates who have contributed to our knowledge of the science of radioactivity. * Provides entry-level overview of every form of radioactivity including natural and artificial sources, and radiation of cosmic origin. * Includes many solved problems to practical questions concerning nuclear radiation and its interaction with matter * Historical accounts of the major achievements of pioneers and Nobel Laureates, who have contributed to our current knowledge of radioactivity*

Book Review Index This book will serve as the definitive source of detailed information on radiation, ionization, and detection in nuclear medicine. It opens by considering fundamental aspects of nuclear radiation, including dose and energy, sources, and shielding. Subsequent chapters cover the full range of relevant topics, including the detection and measurement of radiation exposure (with detailed information on mathematical modelling); medical imaging; the

different types of radiation detector and their working principles; basic principles of and experimental techniques for deposition of scintillating materials; device fabrication; the optical and electrical behaviors of radiation detectors; and the instrumentation used in nuclear medicine and its application. The book will be an invaluable source of information for academia, industry, practitioners, and researchers.

Handbook of Radioactivity Analysis Every 3rd issue is a quarterly cumulation.

Nuclear Energy Physics and Engineering of Radiation Detection presents an overview of the physics of radiation detection and its applications. It covers the origins and properties of different kinds of ionizing radiation, their detection and measurement, and the procedures used to protect people and the environment from their potentially harmful effects. The second edition is fully revised and provides the latest developments in detector technology and analyses software. Also, more material related to measurements in particle physics and a complete solutions manual have been added. Discusses the experimental techniques and instrumentation used in different detection systems in a very practical way without sacrificing the physics content Provides useful formulae and explains methodologies to solve problems related to radiation measurements Contains many worked-out examples and end-of-chapter problems Detailed discussions on different detection media, such as gases, liquids, liquefied gases, semiconductors, and scintillators Chapters on

statistics, data analysis techniques, software for data analysis, and data acquisition systems

Bulletin of the Veterinary Institute in Puławy The first Workshop on 'Nuclear Proficiency Testing' (PT) focused on the new topic appeared at the junction of the nuclear basic research, metrology, quality control in applications, and the new 'Science of Analytical Performance' (SAP), namely: 'how to get/prove the most accurate and precise scientific/technical results in the current practice. Any analytical laboratory should fulfill this goal in order to assure the public credibility of its results, either it is part of the scientific research institute, or a laboratory dedicated to the routine control of the environment, industry, health /medicine, radioprotection, or dosimetry, as the quality of the analytical results and of the services that will be further used depend critically on the accuracy and validity of measurements (EN ISO/IEC Standard 17025: 2005). 'Proficiency Testing' plays a central role in this process as the best tool to prove and certify the Laboratory's Performance & Competence; it belongs to SAP, which, in our case, should be called SNAP (Science of the Nuclear Analytical Performance), as it concerns performance in applications of the nuclear analytical techniques. The 'PT Workshop-2007' created the opportunity to learn the criteria / tools used for interpreting the experimental results and evaluating performance, 'how to fit' the laboratory's performance with the rigor of international 'Proficiency Testing' evaluation, to understand the basic aspects of methods validation and traceability of the nuclear physical quantities to SI, use of the reference materials and of the statistic criteria for the fitness-for-

purpose objectives, advantages of the ILC /PT exercises, and how to get the 'Excellence'; so, it was primarily a 'school' , but not only, because the meeting was also a framework for participants to present their latest results and developments. The unique feature of the 'PT Workshop-2007' was the participation -for the first time in a scientific meeting of experts intimately involved in the development of International and National Standards and the organization of international Inter-Laboratory Comparison (ILC) and Proficiency Testing (PT) exercises, of experts involved in radionuclide metrology, who generally establish the norms and requirements for the accuracy of measurements and analytical methods, and experts and specialists involved in nuclear application, as 'lectors'. Their presence and lessons assured the highest level of knowledge for a successful 'school' in the field of Nuclear Proficiency Testing, and the discussions they created were very fruitful, to the benefit of all the participants.

Radioactive Releases in the Environment

Surveillance and Monitoring of Near Surface Disposal Facilities for Radioactive Waste "Practical Skills in Biomolecular Sciences"" Laboratory and field studies are essential components of undergraduate training in the life sciences. Practical work must be fully understood and effectively presented, but many students under-perform because they lack basic laboratory skills. This book, now in its second edition, continues to provide students with easy-to-use guidance for laboratory

and field studies, but in addition it now covers broader transferable skills. As a result the new edition provides guidance and support over the entire range of a typical undergraduate courses in biomolecular sciences. "New features for the second edition " A new section at the front of the book on Study and Examination skills, including new chapters on time management, working with others, note taking, revising, assessment and exams, and preparing a "cv." New chapters on bioinformatics and on the preparation and use of calibration curves. Updated material on the use of the Internet and World Wide Web. New material on evaluating information A a vital skill for todayAs students. New material in the numeracy and statistics chapters to provide greater support and guidance. Every chapter has study exercises to reinforce learning with problems and practical exercises. Answers are given at the back of the book for all exercises. Every chapter is supported by a section giving printed and electronic sources for further study. " Retained features from previous edition " Worked examples and "how to" boxes that set out the essential procedures in a step-by-step manner. Key points highlighting critical features of methodology. Use of margin tips, definitions and illustrations. Use of two-colour text throughout the book. Practical Skills in Biomolecular Sciences is an indispensable book for undergraduate students in a range of subjects including biochemistry, genetics, molecular biology and biomedical sciences. It is also a valuable resource for teachers of these subjects in colleges and secondary schools.

Bowker's Best Reference Books: Author index. Title index Was wäre, wenn wir Menschen von

einem Tag auf den anderen verschwinden würden? Zum Beispiel morgen. Ein ungeheures Gedankenexperiment! Alan Weisman entwirft das Szenario einer unbevölkerten Erde – gestützt auf das Wissen von Biologen, Geologen, Physikern, Architekten und Ingenieuren und mit atemberaubender Phantasie. Schritt für Schritt vollzieht Weisman nach, wie die Natur unseren Planeten zurückerobert, und führt dem Leser dabei zweierlei vor Augen: was der Mensch in Jahrtausenden zu schaffen vermochte und über welche unerhörte Macht die Natur verfügt.

A Handbook of Radioactivity Measurements Procedures Fukushima Accident: 10 Years After evaluates the post-Fukushima accident situation with up-to-date information, emphasizing radionuclide impacts on the terrestrial and marine environments, and comparing them to the pre-Fukushima accident levels of radionuclides in the environment. This is based on scientific results, as well as knowledge gathered from literature to provide current information on the present status, summarize 10 years of data on the Fukushima accident, and describe the present situation in the local, regional, and global time and space scales. It provides data on radioactivity released into the atmosphere and the ocean, the distribution of radionuclides in the world atmosphere and oceans, and their impact on the total environment, including assessments of radiation doses in Japanese and world populations from consumption of terrestrial food and seafood. It goes on to describe future aspects of the radioactive contamination of these environments and the health implications. This book informs environmental scientists, academics, and researchers in environmental science

and nuclear energy as well as postgraduate students in the field of environmental science, radioactivity, and nuclear energy, on the present situation of radioactive contamination of Japan and in the world. Covers the Fukushima radioactivity impact on humans and the environment from the accident to the present Provides full information on radiation doses to Japanese citizens and biota, as well as to the world population, 10 years after the Fukushima accident Details transport of radionuclides in terrestrial and ocean environments, describing how to apply this information to ocean global circulation models and quantify radionuclide contamination of coastal regions Assesses future trends in radioactive contamination of the Fukushima site

Tritium: Fuel of Fusion Reactors "Radioactivity: Introduction and History, From the Quantum to Quarks, Second Edition" provides a greatly expanded overview of radioactivity from natural and artificial sources on earth, radiation of cosmic origins, and an introduction to the atom and its nucleus. The book also includes historical accounts of the lives, works, and major achievements of many famous pioneers and Nobel Laureates from 1895 to the present. These leaders in the field have contributed to our knowledge of the science of the atom, its nucleus, nuclear decay, and subatomic particles that are part of our current knowledge of the structure of matter, including the role of quarks, leptons, and the bosons (force carriers). Users will find a completely revised and greatly expanded text that includes all new material that further describes the significant historical events on the topic dating from the 1950s to the present. Provides a detailed account of nuclear

radiation its origin and properties, the atom, its nucleus, and subatomic particles including quarks, leptons, and force carriers (bosons)Includes fascinating biographies of the pioneers in the field, including captivating anecdotes and insightsPresents meticulous accounts of experiments and calculations used by pioneers to confirm their findings"

Radiation, Ionization, and Detection in Nuclear Medicine Handbook of Radioactivity Analysis: Radiation Physics and Detectors, Volume One, Fourth Edition, is an authoritative reference on the principles, practical techniques and procedures for the accurate measurement of radioactivity - everything from the very low levels encountered in the environment, to higher levels measured in radioisotope research, clinical laboratories, biological sciences, radionuclide standardization, nuclear medicine, nuclear power, and fuel cycle facilities, and in the implementation of nuclear forensic analysis and nuclear safeguards. It includes sample preparation techniques for all types of matrices found in the environment, including soil, water, air, plant matter and animal tissue, and surface swipes. Users will find a detailed discussion of our current understanding of the atomic nucleus, nuclear stability and decay, nuclear radiation, and the interaction of radiation with matter relating to the best methods for radionuclide detection and measurement. Spans two volumes, Radiation Physics and Detectors and Radioanalytical Applications Includes a new chapter on neutron radiation detection and measurement Provides the latest advances in high-resolution beta imaging techniques, analytical techniques in nuclear forensics and nuclear safeguards Covers high-

sample-throughput microplate techniques and multi-detector assay methods Describes the timesaving techniques of computer-controlled automatic separation and activity analysis of radionuclides

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