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KEY=SCIENTIFIC - VAZQUEZ MCMAHON

RADIOMETRY IN MODERN SCIENTIFIC EXPERIMENTS

Springer Science & Business Media **The reader is provided with information about methods of calibration of light sources and photodetectors as well as responsiveness of spectral instruments ranging from near infrared to vacuum UV spectral, 1200 – 100 nm, and radiation intensities of up to several quanta per second in absolute and arbitrary units. The author describes for the first time original methods of measurements they created and draws upon over 40 years of experience in working with light sources and detectors to provide accurate and precise measurements. This book is the first to cover these aspects of radiometry and is divided into seven chapters that examine information about terminology, units, light sources and detectors, methods, including author's original ones, of absolute calibration of detectors, spectral instruments responsiveness, absolute measurements of radiation intensity of photoprocesses, and original methods of their study. Of interest to researchers measuring; luminescence spectra, light intensities from IR to vacuum UV, spectral range in wide-light intensity ranges, calibrate light sources and detectors, absolute or relative quantum yields of photoprocess determination.**

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SCIENCE, TECHNOLOGY, AND THE MODERN NAVY

THIRTIETH ANNIVERSARY, 1946-1976

When it was established in 1946, the Office of Naval Research was the main channel for Federal support of science in the United States. Since there are few fields of science or technology that cannot be related directly or indirectly to Navy requirements, the real choice becomes one of emphasizing areas of particular interest where anticipated results may have a direct bearing on future naval activities. Most research programs within ONR are organized along disciplinary lines, the main disciplines being the physical, mathematical, information, biological, medical, psychological, earth, material, and ocean sciences; but some programs center on such fields as aviation, vehicle, and sensor technologies. The Physical Science Program pursues research on radiation, lasers, acoustics, optics, electronics, superconductivity, magnetism, and surfaces. Research in the Mathematical Sciences Program covers the mathematical and computer sciences, the design of techniques for logistics and systems analysis, and the mechanics of fluids. The objectives of Biomedical research are to understand principles essential to maintaining the health and work capacity of personnel, to prevent disease, and to reduce stress factors such as pressure in diving. The Psychological Research Program seeks a better basis for understanding, improving, and predicting human performance in military environments. Thus, the reduction of manpower costs and the betterment of personnel effectiveness are anticipated benefits from investments in man-job and man-machine designs. The Earth Sciences Program has the objective of providing comprehensive knowledge of physical environments in which the Navy and Marine Corps must operate.

BLACKBODY RADIOMETRY

VOLUME 1: FUNDAMENTALS

Springer Nature **This book, the first of a two-volume set, focuses on the basic physical principles of blackbody radiometry and describes artificial sources of blackbody radiation, widely used as sources of optical radiation, whose energy characteristics can be calculated on the base of fundamental physical laws. Following a review of radiometric quantities, radiation laws, and radiative heat transfer, it introduces the basic principles of blackbody radiators design, details of their practical implementation, and methods of measuring their defining characteristics, as well as metrological aspects of blackbody-based measurements. Chapters are dedicated to the effective emissivity concept, methods of increasing effective emissivities, their measurement and modeling using the Monte Carlo method, techniques of blackbody radiators heating, cooling, isothermalization, and measuring their temperature. An extensive and comprehensive reference source, this book is of considerable value to students, researchers, and engineers involved in any aspect of blackbody radiometry.**

OPTICAL RADIOMETRY

Elsevier **This book deals with the practice of Optical Radiation Measurements with introductory material to introduce the topics discussed. It will be most useful for students, scientists and engineers working in any academic, industrial or governmental projects related to optical radiation. The book contains chapters that treat in detail the procedures and techniques for the characterization of both sources and detectors to the highest degree of accuracy and reliability. It has a chapter devoted specifically to optical measurements of laser sources and fiberoptics for communication and a chapter devoted to uncertainty in measurement and its treatment with real examples of optical measurements. The book contains introductory materials that will allow a newcomer to radiometry to develop the expertise to perform exacting and accurate measurement. The authors stress the various causes of uncertainty in each phase of a measurement and thus allow for users to arrive at a correct assessment of their uncertainty of measurement in their particular circumstance. · Authors are from the Standards laboratories of AUSTRALIA, CANADA, ENGLAND, GERMANY and the USA. · Latest techniques and practice of laboratory measurements to achieve the highest accuracy in the use of sources or detectors. · Unique illustrations of the apparatus and measurement techniques. · Practical measurement examples of calibration with full uncertainty analysis. · Comprehensive treatment of optical standards such as sources, detectors and radiometers. · A complete chapter on laser power measurements and standards for fiber optic measurements · A complete chapter on correlations in radiometry and practical examples. · A chapter devoted to diffraction effects in radiometry**

NATURE

THE INTERNATIONAL JOURNAL OF SCIENCE

GAS-PHASE PHOTOPROCESSES

Springer Nature **This book provides details of the basic frameworks and characteristics of processes occurring in electronically excited states of small molecules, complexes, and clusters. It discusses the perturbations in electronically excited valence states of molecules**

induced by intramolecular interaction and intermolecular interactions, which occur in collisions and optically populated, weakly bound complexes. Further, it describes the kinetics and mechanisms of photoprocesses in simple molecules and recombination accompanied by radiation. The book also offers information on general kinetics for gas-phase processes and basic theoretical frameworks for elementary processes. It features many useful problems, making it a valuable resource for students and researchers in molecular spectroscopy/molecular physics and chemical physics/physical chemistry.

ENCYCLOPEDIA OF OPTICAL ENGINEERING: PHO-Z, PAGES 2049-3050

CRC Press **Compiled by 330 of the most widely respected names in the electro-optical sciences, the Encyclopedia is destined to serve as the premiere guide in the field with nearly 2000 figures, 560 photographs, 260 tables, and 3800 equations. From astronomy to x-ray optics, this reference contains more than 230 vivid entries examining the most intriguing technological advances and perspectives from distinguished professionals around the globe. The contributors have selected topics of utmost importance in areas including digital image enhancement, biological modeling, biomedical spectroscopy, and ocean optics, providing thorough coverage of recent applications in this continually expanding field.**

A CENTURY OF EXCELLENCE IN MEASUREMENTS, STANDARDS, AND TECHNOLOGY

CRC Press **Established by Congress in 1901, the National Bureau of Standards (NBS), now the National Institute of Standards and Technology (NIST), has a long and distinguished history as the custodian and disseminator of the United States' standards of physical measurement. Having reached its centennial anniversary, the NBS/NIST reflects on and celebrates its first century with this book describing some of its seminal contributions to science and technology. Within these pages are 102 vignettes that describe some of the Institute's classic publications. Each vignette relates the context in which the publication appeared, its impact on science, technology, and the general public, and brief details about the lives and work of the authors. The groundbreaking works depicted include: A breakthrough paper on laser-cooling of atoms below the Doppler limit, which led to the award of the 1997 Nobel Prize for Physics to William D. Phillips The official report on the development of the radio proximity fuse, one of the most important new weapons of World War II The 1932 paper reporting the discovery of deuterium in experiments that led to Harold Urey's1934 Nobel Prize for Chemistry A review of the development of the SEAC, the first digital computer to employ stored programs and the first to process images in digital form The first paper demonstrating that parity is not conserved in nuclear physics, a result that shattered a fundamental concept of theoretical physics and led to a Nobel Prize for T. D. Lee and C. Y. Yang "Observation of Bose-Einstein Condensation in a Dilute Atomic Vapor," a 1995 paper that has already opened vast new areas of research A landmark contribution to the field of protein crystallography by Wlodawer and coworkers on the use of joint x-ray and neutron diffraction to determine the structure of proteins**

NIST SPECIAL PUBLICATION

NUCLEAR SCIENCE ABSTRACTS

A GUIDE TO UNDERGRADUATE SCIENCE COURSE AND LABORATORY IMPROVEMENTS

CHEMICAL NEWS AND JOURNAL OF INDUSTRIAL SCIENCE

RADIOMETRIC TEMPERATURE MEASUREMENTS

II. APPLICATIONS

Academic Press **This book describes the practice of radiation thermometry, both at a primary level and for a variety of applications, such as in the materials processing industries and remote sensing. This book is written for those who will a) apply radiation thermometry in industrial practice b) use radiation thermometers for scientific research, c) the radiation thermometry specialist in a national measurement institute d) developers of radiation thermometers who are working to innovate products for instrument manufacturers and e) developers non-contact thermometry methods to address challenging thermometry problems. The author(s) of each chapter were chosen from a group of international scientists who are experts in the field and specialist(s) on the subject matter covered in the chapter. A large number of references are included at the end of each chapter as a resource for those seeking a deeper or more detailed understanding. This book is more than a practice guide. Readers will gain in-depth knowledge in: (1) the proper selection of the type of thermometer; (2) the best practice in using the radiation thermometers; (3) awareness of the error sources and subsequent appropriate procedure to reduce the overall uncertainty; and (4) understanding of the calibration chain and its current limitations. Coverage of all fundamental aspects of the radiometric measurements Coverage of practical applications with details on the instrumentation, calibration, and error sources Authors are from the national labs internationally leading in R&D in temperature measurements Comprehensive coverage with large number of references**

THE CHEMICAL NEWS AND JOURNAL OF PHYSICAL SCIENCE

CHEMICAL NEWS AND JOURNAL OF PHYSICAL SCIENCE

INTRODUCTION TO RADIOMETRY AND PHOTOMETRY, SECOND EDITION

Artech House **This second edition of an Artech House classic title describes in detail the relationship between radiometry and photometry. It covers information needed to solve problems in radiation transfer and detection, detectors, measuring instruments, and concepts in colorimetry. This revised second edition presents an updated treatment of modern radiometry and photometry, including brand new sections on applications and developments in light sources and scientific instruments for measuring radiation and light. Engineers are also provided with an exciting new chapter on the use of computerized optical ray tracing for “virtual” experiments on optical systems.**

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MODERN SCIENCE

APPLIED PHOTOMETRY, RADIOMETRY, AND MEASUREMENTS OF OPTICAL LOSSES

Springer Science & Business Media **Applied Photometry, Radiometry, and Measurements of Optical Losses reviews and analyzes physical concepts of radiation transfer, providing quantitative foundation for the means of measurements of optical losses, which affect propagation and distribution of light waves in various media and in diverse optical systems and components. The comprehensive analysis of advanced methodologies for low-loss detection is outlined in comparison with the classic photometric and radiometric observations, having a broad range of techniques examined and summarized: from interferometric and calorimetric, resonator and polarization, phase-shift and ring-down decay, wavelength and frequency modulation to pulse separation and resonant, acousto-optic and emissive - subsequently compared to direct and balancing methods for studying free-space and polarization optics, fibers and waveguides. The material is focused on applying optical methods and procedures for evaluation of transparent, reflecting, scattering,**

absorbing, and aggregated objects, and for determination of power and energy parameters of radiation and color properties of light.

NEW SCIENTIST

New Scientist magazine was launched in 1956 "for all those men and women who are interested in scientific discovery, and in its industrial, commercial and social consequences". The brand's mission is no different today - for its consumers, New Scientist reports, explores and interprets the results of human endeavour set in the context of society and culture.

CHEMICAL NEWS AND JOURNAL OF INDUSTRIAL SCIENCE

ASTRONOMY IN THE ANCIENT WORLD

EARLY AND MODERN VIEWS ON CELESTIAL EVENTS

Springer **Alexus McLeod explores every aspect of the lesser-known history of astronomy in the Americas (Mesoamerica and North America), China and India, each through the frame of a particular astronomical phenomena. Part One considers the development of astronomy in the Americas as a response, in part, to the Supernova of 1054, which may have led to a cultural renaissance in astronomy. He then goes on to explore the contemporary understanding of supernovae, contrasting it with that of the ancient Americas. Part Two is framed through the appearances of great comets, which had major divinatory significance in early China. The author discusses the advancement of observational astronomy in China, its influence on politics and its role in the survival or failure of empires. Furthermore, the contemporary understanding of comets is also discussed for comparison. Part Three, on India, considers the magnificent observatories of the Rajput king Jai Singh II, and the question of their purpose. The origins of Indian astronomy are examined in Vedic thought and its development is followed through the period of Jai Singh, including the role played by solar eclipses. The author also includes a modern explanation of our understanding of eclipses to date. In the final section of the book, McLeod discusses how ancient traditions might help modern civilization better understand Earth’s place in the cosmos.**

SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS

SCIENTIFIC AMERICAN

SUPPLEMENT

THE FIRST SEAWIFS HPLC ANALYSIS ROUND-ROBIN EXPERIMENT (SEAHARRE-1)

AMERICAN JOURNAL OF SCIENCE

AN INTERNATIONAL EARTH SCIENCE JOURNAL

ISSUES IN EXTREME CONDITIONS TECHNOLOGY RESEARCH AND APPLICATION: 2013 EDITION

ScholarlyEditions **Issues in Extreme Conditions Technology Research and Application: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Cryogenics. The editors have built Issues in Extreme Conditions Technology Research and Application: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Cryogenics in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Extreme Conditions Technology Research and Application: 2013 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.**

THE AMERICAN JOURNAL OF SCIENCE

THE AMERICAN JOURNAL OF SCIENCE

EXPERIMENTING ON A SMALL PLANET

A HISTORY OF SCIENTIFIC DISCOVERIES, A FUTURE OF CLIMATE CHANGE AND GLOBAL WARMING

Springer Nature **This book is a thorough introduction to climate science and global change. The author is a geologist who has spent much of his life investigating the climate of Earth from a time when it was warm and dinosaurs roamed the land, to today's changing climate. Bill Hay takes you on a journey to understand how the climate system works. He explores how humans are unintentionally conducting a grand uncontrolled experiment which is leading to unanticipated changes. We follow the twisting path of seemingly unrelated discoveries in physics, chemistry, biology, geology, and even mathematics to learn how they led to our present knowledge of how our planet works. He explains why the weather is becoming increasingly chaotic as our planet warms at a rate far faster than at any time in its geologic past. He speculates on possible future outcomes, and suggests that nature itself may make some unexpected course corrections. Although the book is written for the layman with little knowledge of science or mathematics, it includes information from many diverse fields to provide even those actively working in the field of climatology with a broader view of this developing drama. Experimenting on a Small Planet is a must read for anyone having more than a casual interest in global warming and climate change - one of the most important and challenging issues of our time. This new edition includes actual data from climate science into 2021. Numerous Powerpoint slides can be downloaded to allow lecturers and teachers to more effectively use the book as a basis for climate change education.**

THE AMERICAN JOURNAL OF SCIENCE AND ARTS

PHYSICS AND PSYCHICS

THE OCCULT AND THE SCIENCES IN MODERN BRITAIN

Cambridge University Press **Noakes' revelatory analysis of Victorian scientists' fascination with psychic phenomena connects science, the occult and religion in intriguing new ways.**

BOSTON JOURNAL OF CHEMISTRY AND POPULAR SCIENCE REVIEW

SCIENTIFIC AMERICAN

SCIENCE

A DISCOVERY IN COMICS

NBM Publishing **Explaining different scientific disciplines in clear, colorful chapters, this illustrated primer is a great way to introduce young readers to a complex topic. In her easily accessible style, Margreet de Heer visualizes science and makes it approachable for those with little knowledge of the subject. Touching a number of topics in various scientific disciplines—including math, chemistry, physics, biology, geology, and quantum theory—this work ponders questions such as Who exclaimed "Eureka" and why? Why did Galileo get into a fight with the Church? and What happens when you have your DNA tested? This humorous yet substantive graphic account strips the subject of unnecessary complexity, making it a perfect introduction to exploring scientific concepts.**

NATURE

ENCYCLOPEDIA OF OPTICAL AND PHOTONIC ENGINEERING (PRINT) - FIVE VOLUME SET

CRC Press **The first edition of the Encyclopedia of Optical and Photonic Engineering provided a valuable reference concerning devices or systems that generate, transmit, measure, or detect light, and to a lesser degree, the basic interaction of light and matter. This Second Edition not only reflects the changes in optical and photonic engineering that have occurred since the first edition was published, but also: Boasts a wealth of new material, expanding the encyclopedia’s length by 25 percent Contains extensive updates, with significant revisions made throughout the text Features contributions from engineers and scientists leading the fields of optics and photonics today With the addition of a second editor, the Encyclopedia of Optical and Photonic Engineering, Second Edition offers a balanced and up-to-date look at the fundamentals of a diverse portfolio of technologies and discoveries in areas ranging from x-ray optics to photon entanglement and beyond. This edition’s release corresponds nicely with the United Nations General Assembly’s declaration of 2015 as the International Year of Light, working in tandem to raise awareness about light’s important role in the modern world. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk**

ENGLISH MECHANIC AND WORLD OF SCIENCE

WITH WHICH ARE INCORPORATED "THE MECHANIC", "SCIENTIFIC OPINION," AND THE "BRITISH AND FOREIGN MECHANIC."

THE INVENTION OF TELEPATHY, 1870-1901

Oxford University Press on Demand **The Invention of Telepathy explores one of the enduring concepts to emerge from the late nineteenth century. Telepathy was coined by Frederic Myers in 1882. He defined it as 'the communication of any kind from one mind to another, independently of the recognised channels of sense'. By 1901 it had become a disputed phenomenon amongst physical scientists yet was the 'royal road' to the unconscious mind. Telepathy was discussed by eminent men and women of the day, including Sigmund Freud, Thomas Huxley, Henry and William James, Mary Kingsley, Andrew Lang, Vernon Lee, W.T. Stead, and Oscar Wilde. Did telepathy signal evolutionary advance or possible decline? Could it be a means of binding the Empire closer together, or was it used by natives to subvert imperial communications? Were women more sensitive than men, and if so why? Roger Luckhurst investigates these questions in a study that mixes history of science with cultural history and literary analysis.**