

Biomedical Engineering By Cromwell

One of the most comprehensive books in the field, this import from TATA McGraw-Hill rigorously covers the latest developments in medical imaging systems, gamma camera, PET camera, SPECT camera and lithotripsy technology. Written for working engineers, technicians, and graduate students, the book includes of hundreds of images as well as detailed working instructions for the newest and more popular instruments used by biomedical engineers today.

Society's use of energy and technology is at heart of many of the most significant environmental problems of recent years, including problems of health, global warming and acid rain. Use of technology has been a major cause of environmental problems but new technology offers many solutions. Energy, Society and Environment is an introduction to energy and energy use, and the interactions between technology, society and the environment. The book is clearly structured to examine: * key environmental issues, and the harmful impacts of energy use * new technological solutions to environmental problems * implementation of possible solutions * implications for society in developing a sustainable approach to energy use. Social processes and strategic solutions to problems are located within a clear, technological context with topical case studies and informative diagrams illustrating key issues. Energy, Society and Environment examines the potential and limits of technical solutions to environmental problems and suggests the social, economic and political changes necessary to avoid serious environmental damage in the future.

This book is a reference guide for the new field of biomedical engineering and discusses introductory material on the topic.

Occupational Health: A Guide to Sources of Information is a compilation of papers that can be used as reference when seeking information and knowledge related to health hazards found in the workplace. The information given in the book pertains mostly to the United Kingdom, though additional references can be helpful when used in other countries. The text enumerates the qualifications and trainings required for occupational physicians, medical officers, consultants, nurses, and part-time workers. The book also includes training courses in the USA, Australia, and South Africa. The epidemiological approach to occupational health hazards and problems, including the spread of community diseases in terms of age, social class, and time factors, is discussed. Of interest is the chapter on ergonomics where the interrelations between humans and their occupations are studied. Another useful chapter for administrators in the occupational health sector is the design of an occupational health department and first aid stations. Related topics include management, handling trade unions, and even environmental pollution. Details of occupational medicine in selected countries of the European Economic Community, the work of the WHO and the ILO, and other additional information from countries such as Israel, India, Sudan,

and Zambia are included. This book is an informative reading for physicians, nurses, hygienists, ergonomists, biomedical engineers, and students and trainees in occupational medicine.

Medical Physics and Biomedical Engineering provides broad coverage appropriate for senior undergraduates and graduates in medical physics and biomedical engineering. Divided into two parts, the first part presents the underlying physics, electronics, anatomy, and physiology and the second part addresses practical applications. The structured approach means that later chapters build and broaden the material introduced in the opening chapters; for example, students can read chapters covering the introductory science of an area and then study the practical application of the topic. Coverage includes biomechanics; ionizing and nonionizing radiation and measurements; image formation techniques, processing, and analysis; safety issues; biomedical devices; mathematical and statistical techniques; physiological signals and responses; and respiratory and cardiovascular function and measurement. Where necessary, the authors provide references to the mathematical background and keep detailed derivations to a minimum. They give comprehensive references to junior undergraduate texts in physics, electronics, and life sciences in the bibliographies at the end of each chapter.

This book contends that modern concerns surrounding the UK State's investigation of communications (and, more recently, data), whether at rest or in transit, are in fact nothing new. It evidences how, whether using common law, the Royal Prerogative, or statutes to provide a lawful basis for a state practice traceable to at least 1324, the underlying policy rationale has always been that first publicly articulated in Cromwell's initial Postage Act 1657, namely the protection of British 'national security', broadly construed. It further illustrates how developments in communications technology led to Executive assumptions of relevant investigatory powers, administered in conditions of relative secrecy. In demonstrating the key role played throughout history by communications service providers, the book also charts how the evolution of the UK Intelligence Community, entry into the 'UKUSA' communications intelligence-sharing agreement 1946, and intelligence community advocacy all significantly influenced the era of arguably disingenuous statutory governance of communications investigation between 1984 and 2016. The book illustrates how the 2013 'Intelligence Shock' triggered by publication of Edward Snowden's unauthorized disclosures impelled a transition from Executive secrecy and statutory disingenuousness to a more consultative, candid Executive and a policy of 'transparent secrecy', now reflected in the Investigatory Powers Act 2016. What the book ultimately demonstrates is that this latest comprehensive statute, whilst welcome for its candour, represents only the latest manifestation of the British state's policy of ensuring protection of national security by granting powers enabling investigative access to communications and data, in transit or at rest, irrespective of location.

Since the publication of Carr and Brown's biomedical equipment text more than ten years ago, it has become the industry standard. Now, this completely revised second edition promises to set the pace for modern biomedical equipment technology.

On behalf of the organizing committee of the 13 International Conference on Biomedical Engineering, I extend our warmest welcome to you. This series of conference began in 1983 and is jointly organized by the YLL School of Medicine and Faculty of Engineering of the National University of Singapore and the Biomedical Engineering Society (Singapore). First of all, I want to thank Mr Lim Chuan Poh, Chairman A*STAR who kindly agreed to be our Guest of Honour to give the Opening Address amidst his busy schedule. I am delighted to report that the 13 ICBME has more than 600 participants from 40 countries. We have received very high quality papers and inevitably we had to turn down some papers. We have invited very prominent speakers and each one is an authority in their field of expertise. I am grateful to each one of them for setting aside their valuable time to participate in this conference. For the first time, the Biomedical Engineering Society (USA) will be sponsoring two symposia, ie "Drug Delivery Systems" and "Systems Biology and Computational Bioengineering". I am thankful to Prof Tom Skalak for his leadership in this initiative. I would also like to acknowledge the contribution of Prof Takami Yamaguchi for organizing the NUS-Tohoku's Global COE workshop within this conference. Thanks also to Prof Fritz Bodem for organizing the symposium, "Space Flight Bioengineering". This year's conference proceedings will be published by Springer as an IFMBE Proceedings Series.

Biomedical Instrumentation and Measurements Prentice Hall

This book explores the hitherto neglected relationship between the English Reformation and the Lutheran scholar Philip Melanchthon (1497-1560). It looks at how Henry, following his break with Rome, flirted with Lutheranism as a doctrine to replace Catholicism, before the eventual collapse of the policy and its replacement with a more moderate reform programme under Cranmer. It then goes on to investigate how Melanchthon, as the leading proponent of Lutheranism influenced successive royal governments, both positively and negatively, as they struggled to impose their own brand of doctrinal conformity on the English church. By refracting the well known narrative of the English Reformation through the lens of Melanchthon, new light is shed on many events that have puzzled historians. The study provides fascinating new perspectives on such questions as why Henry suddenly abandoned his Lutheran policy, why Cromwell fell from power in 1540 and even insights into Elizabeth's personal beliefs. By tying events in England into the context of the wider European Reformation, through the work of Philip Melanchthon, this book offers fresh insights into the nature and development of early evangelical Protestantism.

The Handbook of Biomedical Instrumentation describes the physiological basis and engineering principles of various electromedical equipment. It also includes information on the principles of operation and the performance parameters of a wide range of instruments. This comprehensive handbook covers: Recording and monitoring

instruments Measurement and analysis techniques Modern imaging systems Therapeutic equipment The revised edition has been thoroughly updated taking into consideration the technological innovations and the introduction of new and improved methods of medical diagnosis and treatment

This volume presents the proceedings of the Fourth International Conference on the Development of Biomedical Engineering in Vietnam which was held in Ho Chi Minh City as a Mega-conference. It is kicked off by the Regenerative Medicine Conference with the theme "BUILDING A FACE" USING A REGENERATIVE MEDICINE APPROACH", endorsed mainly by the Tissue Engineering and Regenerative Medicine International Society (TERMIS). It is followed by the Computational Medicine Conference, endorsed mainly by the Computational Surgery International Network (COSINE) and the Computational Molecular Medicine of German National Funding Agency; and the General Biomedical Engineering Conference, endorsed mainly by the International Federation for Medical and Biological Engineering (IFMBE). It featured the contributions of 435 scientists from 30 countries, including: Australia, Austria, Belgium, Canada, China, Finland, France, Germany, Hungary, India, Iran, Italy, Japan, Jordan, Korea, Malaysia, Netherlands, Pakistan, Poland, Russian Federation, Singapore, Spain, Switzerland, Taiwan, Turkey, Ukraine, United Kingdom, United States, Uruguay and Viet Nam.

First published in 1990: The book discusses the use of Biomedical engineering in Reproductive Medicine.

Oliver Cromwell is one of the most puzzling and controversial figures in English history. In this excellent introduction, Barry Coward uses Cromwell's own words and actions to analyse the life of Oliver Cromwell as a political figure and look at the historical problems associated with his exercise of power.

Encyclopedia of Medical Devices and Instrumentation John G. Webster, Editor-in-Chief This comprehensive encyclopedia, the work of more than 400 contributors, includes 266 articles on devices and instrumentation that are currently or likely to be useful in medicine and biomedical engineering. The four volumes include 3,022 pages of text that concentrates on how technology assists the branches of medicine. The articles emphasize the contributions of engineering, physics, and computers to each of the general areas of medicine, and are designed not for peers, but rather for workers from related fields who wish to take a first look at what is important in the subject. Highly recommended for university biomedical engineering and medical reference collections, and for anyone with a science background or an interest in technology. Includes a 78-page index, cross-references, and high-quality diagrams, illustrations, and photographs. 1988 (0 471-82936-6) 4-Volume Set Introduction to Radiological Physics and Radiation Dosimetry Frank Herbert Attix provides complete and useful coverage of radiological physics. Unlike most treatments of the subject, it encompasses radiation dosimetry in general, rather than discussing only its applications in medical or health physics. The treatment flows logically from basics to more advanced topics. Coverage extends through radiation interactions to cavity theories and dosimetry of X-rays, charged particles, and neutrons. Several important subjects that have never been thoroughly analyzed in the literature are treated here in detail, such as charged-particle equilibrium, broad-beam attenuation and geometries, derivation of the Kramers X-ray spectrum, and the reciprocity theorem, which is also extended to the nonisotropic

homogeneous case. 1986 (0 471-01146-0) 607 pp. Medical Physics John R. Cameron and James G. Skofronick This detailed text describes medical physics in a simple, straightforward manner. It discusses the physical principles involved in the control and function of organs and organ systems such as the eyes, ears, lungs, heart, and circulatory system. There is also coverage of the application of mechanics, heat, light, sound, electricity, and magnetism to medicine, particularly of the various instruments used for the diagnosis and treatment of disease. 1978 (0 471-13131-8) 615 pp.

Market_Desc: · Biomedical Engineers· Medical and Biological Personnel (who wish to learn measurement techniques) Special Features: · Addresses measurements in new fields such as cellular and molecular biology and nanotechnology· Equips readers with the necessary background in electric circuits · Statistical coverage shows how to determine trial sizes About The Book: This comprehensive book encompasses measurements in the growing fields of molecular biology and biotechnology, including applications such as cell engineering, tissue engineering and biomaterials. It addresses measurements in new fields such as cellular and molecular biology and nanotechnology. It equips the readers with the necessary background in electric circuits and the statistical coverage shows how to determine trial sizes.

Primarily intended as a textbook for the undergraduate students of Instrumentation, Electronics, and Electrical Engineering for a course in biomedical instrumentation as part of their programmes. The book presents a detailed introduction to the fundamental principles and applications of biomedical instrumentation. The book familiarizes the students of engineering with the basics of medical science by explaining the relevant medical terminology in simple language. Without presuming prior knowledge of human physiology, it helps the students to develop a substantial understanding of the complex processes of functioning of the human body. The mechanisms of all major biomedical instrumentation systems—ECG, EEG, CT scanner, MRI machine, pacemaker, dialysis machine, ultrasound imaging machine, laser lithotripsy machine, defibrillator, and plethysmograph—are explained comprehensively. A large number of illustrations are provided throughout the book to aid in the development of practical understanding of the subject matter. Chapter-end review questions help in testing the students' grasp of the underlying concepts. The second edition of the book incorporates detailed explanations to action potential supported with illustrative example and improved figure, ionic action of silver-silver chloride electrode, and isolation amplifiers. It also includes mathematical treatment to ultrasonic transit time flowmeters. A method to find approximate axis of heart and image reconstruction in CT scan is explained with simple examples. A topic on MRI has been simplified for clear understanding and a new section on Positron Emission Tomography (PET), which is an emerging tool for cancer detection, has been introduced. A well set out textbook to explain the concepts of biomedical electronics and instrumentation. The book covers the complete syllabi of UP Technical University of various subjects concerning Biomedical Electronics and Instrumentation. The text is admirably suited to meet the needs of the students of electronic engineering, electronic instrumentation, electrical engineering, and biomedical engineering. The book presents succinct coverage of the theory, definitions, formulae and examples. The text is well supported by plenty of diagrams and worked problems. To make the underlying concepts easily comprehensible, the text has been written in question-answer form. Most of the questions have been taken from various university examination papers, specially from UPTU.

Ecosystem services can be broadly defined as the aspects of ecosystems that provide benefits to people. This book provides guidance on the valuation of ecosystem services, using the case of multifunctional wetlands to illustrate and make recommendations regarding the methods and techniques that can be applied to appraise management options. It provides a review of

ecosystem service valuation rationale, including its importance from both a policy and project appraisal perspective, and a useful reference when considering policy and appraisal of ecosystem management options. It shows how legal obligations and other high-level management targets should be taken into account in valuation exercises, thus giving important policy context to the management options. The authors set out what they call an Ecosystem Services Approach to the full appraisal of the role of ecosystem services in the economy and society. Although concentrating on wetlands, the approaches suggested provide an assessment framework that can be applied to other types of ecosystem assets.

Technological tools and computational techniques have enhanced the healthcare industry. These advancements have led to significant progress and novel opportunities for biomedical engineering. *Nature-Inspired Intelligent Techniques for Solving Biomedical Engineering Problems* is a pivotal reference source for emerging scholarly research on trends and techniques in the utilization of nature-inspired approaches in biomedical engineering. Featuring extensive coverage on relevant areas such as artificial intelligence, clinical decision support systems, and swarm intelligence, this publication is an ideal resource for medical practitioners, professionals, students, engineers, and researchers interested in the latest developments in biomedical technologies.

First multi-year cumulation covers six years: 1965-70.

The Practice of Clinical Engineering deals with clinical engineering, its educational requirements, the requirements for accreditation, and practice, including legislation and liability. The objectives of clinical engineers are discussed, together with clinical engineering internships, insurance and malpractice, and the clinical engineer's role in hospital planning. This book is comprised of 56 chapters divided into eight sections and begins with an overview of clinical engineering as a discipline and how it differs from biomedical engineering. The reader is then introduced to the history of interdisciplinary engineering and the use of technology in clinical medicine. The following sections focus on the education of the clinical engineer, with emphasis on internships and the training of biomedical equipment technicians; professional accreditation and registration; the role of the clinical engineer as an interface in hospitals; and the involvement of clinical engineers in anesthesiology, surgery, and coronary care. The final chapter considers the transfer of technology to the clinical area and the means that can be used in the implementation of advances in medical engineering. This monograph is intended for engineers concerned with clinical medicine and those concerned with the utilization of diagnostic and therapeutic medical instrumentation or systems.

Swine Nutrition is a comprehensive text-reference that deals with the various aspects and knowledge in swine nutrition. The book is basically about nutrient utilization by swine. The topics discussed concerning this subject are factors influencing swine nutrition, nutrient bioavailability, appetite and feeding behavior, physical forms of feed, environment and management, immunocompetence, genetic and sex considerations, mycotoxins, and intestinal microbiology. Major and unique feedstuffs, feeding regimen in different stages of growth, and techniques in swine nutrition research are also elaborated. The text will be useful to students of advance swine nutrition courses as well as those seeking information in swine nutrition.

In this concise and accessible biography, Martyn Bennett examines the life of Oliver Cromwell – one of the most controversial figures in world history. This study challenges long-held perceptions of Cromwell and the Commonwealth, arguing that they need to be placed at the core of early Modern British and Irish history. Charting his early career, the origins of his political and religious thought, and the development of his notions of governance that influenced him as Lord Protector, Martyn Bennett contests the post-Restoration vilification of Cromwell to examine how his influence has shaped notions of citizenship, identity and governance and informed the relationship between religion and the state in Britain. This radical interpretation will give students a clearer view of the motivations and achievements of a

fascinating and pivotal figure in British history.

Designed as a text for the undergraduate students of instrumentation, electrical, electronics and biomedical engineering, it covers the entire range of instruments and their measurement methods used in the medical field. The functions of the biomedical instruments and measurement methods are presented keeping in mind those students who have minimum required knowledge of human physiology. The purpose of this book is to review the principles of biomedical instrumentation and measurements employed in the hospital industry. Primary emphasis is laid on the method rather than micro level mechanism. This book serves two purposes: One is to explain the mechanism and functional details of human body, and the other is to explain how the biological signals of human body can be acquired and used in a successful manner. **KEY FEATURES :** More than 180 illustrations throughout the book. Short questions with answers at the end of each chapter. Chapter-end exercises to reinforce the understanding of the subject.

The Kuala Lumpur International Conference on Biomedical Engineering (BioMed 2006) was held in December 2006 at the Palace of the Golden Horses, Kuala Lumpur, Malaysia. The papers presented at BioMed 2006, and published here, cover such topics as Artificial Intelligence, Biological effects of non-ionising electromagnetic fields, Biomaterials, Biomechanics, Biomedical Sensors, Biomedical Signal Analysis, Biotechnology, Clinical Engineering, Human performance engineering, Imaging, Medical Informatics, Medical Instruments and Devices, and many more.

Leading advocates of sensory integration use in occupational therapy explore the exciting potentials of this profound theory and its applications. This truly comprehensive and enlightening book provides step-by-step assistance for therapists in observing patient s behavior and appropriately modifying the patient s environment in order to promote increasingly complex adaptive behaviors. Sensory Integrative Approaches in Occupational Therapy moves beyond the traditional use of the practice with the learning disabled elementary school aged child by demonstrating its successful application in programs for infants, preschoolers, adolescents, and the elderly. Occupational therapists with a wide array of clinical, research, and education experience address contemporary issues such as advocacy, cost effectiveness, family participation, and documentation of patient progress. They clearly demonstrate how sensory integration theory complements and mutually reinforces other common occupational therapy practices. This exciting book will stimulate your creativity and encourage the continued development of sensory integration theory as a vital component of occupational therapy in health care.

This practical book presents the latest and most effective occupational therapy methods and theories designed for treating patients with decreased hand function. The growing incidence of hand injuries in recent years has challenged occupational therapists to develop innovations in hand care. Now, with this authoritative resource, you can greatly enhance your practice skills and ability to plan effective treatment programs. The contributors provide clear examinations of such topics as wound and scar tissue management, the treatment of Colles fracture, and pre- and post-operative approaches to therapy, among many other pertinent areas.

Introduction to Biomedical Engineering is a comprehensive survey text for biomedical engineering courses. It is the most widely adopted text across the BME course

spectrum, valued by instructors and students alike for its authority, clarity and encyclopedic coverage in a single volume. Biomedical engineers need to understand the wide range of topics that are covered in this text, including basic mathematical modeling; anatomy and physiology; electrical engineering, signal processing and instrumentation; biomechanics; biomaterials science and tissue engineering; and medical and engineering ethics. Enderle and Bronzino tackle these core topics at a level appropriate for senior undergraduate students and graduate students who are majoring in BME, or studying it as a combined course with a related engineering, biology or life science, or medical/pre-medical course. * NEW: Each chapter in the 3rd Edition is revised and updated, with new chapters and materials on compartmental analysis, biochemical engineering, transport phenomena, physiological modeling and tissue engineering. Chapters on peripheral topics have been removed and made available online, including optics and computational cell biology. * NEW: many new worked examples within chapters * NEW: more end of chapter exercises, homework problems * NEW: Image files from the text available in PowerPoint format for adopting instructors * Readers benefit from the experience and expertise of two of the most internationally renowned BME educators * Instructors benefit from a comprehensive teaching package including a fully worked solutions manual * A complete introduction and survey of BME * NEW: new chapters on compartmental analysis, biochemical engineering, and biomedical transport phenomena * NEW: revised and updated chapters throughout the book feature current research and developments in, for example biomaterials, tissue engineering, biosensors, physiological modeling, and biosignal processing. * NEW: more worked examples and end of chapter exercises * NEW: Image files from the text available in PowerPoint format for adopting instructors *

As with prior editions, this third edition provides a historical look at the major developments across biomedical domains and covers the fundamental principles underlying biomedical engineering analysis, modeling, and design *bonus chapters on the web include: Rehabilitation Engineering and Assistive Technology, Genomics and Bioinformatics, and Computational Cell Biology and Complexity.

The book will help assist a reader in the development of techniques for analysis of biomedical signals and computer aided diagnoses with a pedagogical examination of basic and advanced topics accompanied by over 350 figures and illustrations. Wide range of filtering techniques presented to address various applications 800 mathematical expressions and equations Practical questions, problems and laboratory exercises Includes fractals and chaos theory with biomedical applications

This 3rd Edition has been thoroughly revised and updated taking into account technological innovations and introduction of new and improved methods of medical diagnosis and treatment. Capturing recent developments and discussing new topics, the 3rd Edition includes a separate chapter on 'Telemedicine Technology', which shows how information and communication technologies have made significant contribution in better diagnosis and treatment of patients and management of health facilities. Alongside, there is coverage of new implantable devices as increasingly such devices are being preferred for treatment, particularly in neurological stimulation for pain management, epilepsy, bladder control, etc. The 3rd Edition also appropriately addresses 'Point of Care' equipment: as some technologies become easier to use and less expensive and equipment becomes more transportable, even complex

technologies can diffuse out of hospitals and institutional settings into outpatient facilities and patient's homes. With expanded coverage, this exhaustive and comprehensive handbook would be useful for biomedical physicists and engineers, students, doctors, physiotherapists, and manufacturers of medical instruments. Salient features: All chapters updated to address the current state of technology Separate chapter on 'Telemedicine Technology' Coverage of new implantable devices Discussion on 'Point of Care' equipment Distinctive visual impact of graphs and photographs of latest commercial equipment Updated list of references includes latest research material in the area Discussion on applications of developments in the following fields in biomedical equipment: micro-electronics micro-electromechanical systems advanced signal processing wireless communication new energy sources for portable and implantable devices Coverage of new topics, including: gamma knife cyber knife multislice CT scanner new sensors digital radiography PET scanner laser lithotripter peritoneal dialysis machine Describing the physiological basis and engineering principles of electro-medical equipment, Handbook of Biomedical Instrumentation also includes information on the principles of operation and the performance parameters of a wide range of instruments. Broadly, this comprehensive handbook covers: recording and monitoring instruments measurement and analysis techniques modern imaging systems therapeutic equipment

This book shows that education constitutes the central metaphor of John Milton's political as well as his poetic writing. Demonstrating how Milton's theory of education emerged from his own practices as a reader and teacher, this book analyzes for the first time the relationship between Milton's own material habits as a reader and his theory of the power of books. Milton's instincts for pedagogy, and the habits of inculcation everywhere visible in his writings, take on a larger political function in his use of education as a trope for the transmission of intellectual history. The book therefore analyzes *Paradise Lost* in the complementary contexts of its outright educational claims and more subversive countervailing measures in order to show how Milton dramatizes "the end of learning," which is to say both its objective and its failure. The thesis emphasizes the argumentative resourcefulness of Milton's efforts to liberate readers from the tyrannical bonds of their political innocence, most immediately in the context of the failure of Cromwell's regime to establish lasting republican institutions. More philosophically, the book explores the ways in which Milton's works investigate the humane and intellectual yearning for justice in response to the problem of evil. This important and influential book considers how the Internet, like the printing press in its time, has changed the politics of communication and explores how the changes will affect the future of literacy.

These proceedings of the World Congress 2006, the fourteenth conference in this series, offer a strong scientific program covering a wide range of issues and challenges which are currently present in Medical physics and Biomedical Engineering. About 2,500 peer reviewed contributions are presented in a six volume book, comprising 25 tracks, joint conferences and symposia, and including invited contributions from well known researchers in this field. The Biomed 2011 brought together academicians and practitioners in engineering and medicine in this ever progressing field. This volume presents the proceedings of this international conference which was held in conjunction with the 8th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2011) on the 20th to the 23rd of June 2011 at Berjaya Times Square Hotel, Kuala Lumpur. The topics covered in the conference

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proceedings include: Artificial organs, bioengineering education, bionanotechnology, biosignal processing, bioinformatics, biomaterials, biomechanics, biomedical imaging, biomedical instrumentation, BioMEMS, clinical engineering, prosthetics.

This volume constitutes the refereed proceedings of the Third International Conference on Contemporary Computing, IC3 2010, held in Noida, India, in August 2010.

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