Summary Of High Output Management By Andrew S Grove Includes Analysis

High-Output Management *High Power Impulse Magnetron Sputtering High Power Microwaves* **Engineering of High-Performance Textiles** Effects of High-Power Laser Radiation *High Performance Habits* High-Power Laser-Plasma Interaction *Thermal Effects of High Power Laser Energy on Materials High Performance Browser Networking High-Yield Vegetable Gardening* **Modern High-power Rocketry Modular High-temperature Gas-cooled Reactor Power Plant** Deep Purpose **Packaging of High Power Semiconductor Lasers High Throughput Screening for Food Safety Assessment** *The Design of High-Efficiency Turbomachinery and Gas Turbines, second edition, with a new preface* **High Yield Orthopaedics Semiconductor Laser Engineering, Reliability and Diagnostics Power Ultrasonics High-Efficiency Solar Cells** Competing Against Luck *High-Power Converters and AC Drives The Gold Mine Effect* **High-Power Diode Lasers** *High Power Laser Propulsion* Analytical Sample Preparation With Nano- and Other High-Performance Materials **High-Power Piezoelectrics and Loss Mechanisms Generation and Application of High Power Microwaves** High Power Diode Lasers **Leveraged Finance High-yield Brain and Behavior** *Principles of High-Performance Processor Design* **Embedded Computing for High Performance** High Performance Python **High-yield Heart** *Design and Construction of High-performance Homes* **High Output Management** The Messy Middle *The Four Pillars of High Performance* **Rush to Policy**

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Rush to Policy Jun 24 2019 Rush to Policy explores the appropriate role of technical analysis in policy formation. The authors ask when and how the use of sophisticated analytic techniques in decision making benefits the nation. They argue that these techniques are too often used in situations where they may not be needed or understood by the decision maker; where they may not be able to answer the questions raised but are nonetheless required by the law. House and Shull provide an excellent empirical base for describing the impact of politics on policies, policy analysis, and policy analysts. They examine cost benefit analysis,

risk analysis, and decision analysis, and assess their ability to substitute for the current decision making process in the public sector. They examine the political basis of public sector decision making, how individuals and organizations make decisions, and the ways decisions are made in the federal sector. Also they discuss the mandate to use these methods in the policy formulation process. The book is written by two practicing federal policy analysts who, in a decade of service as policy researchers, developed sophisticated quantitative analytic and decision-making techniques. They then spent several years trying to use them in the real world. Successes and failures are described in illuminating detail, providing insight not commonly found in such critiques. The authors delineate the interaction of politics and technical issues. Their book describes policy analysis as it is, not how it ought to be.

High-Power Converters and AC Drives Jan 12 2021 This book presents the latest cutting-edge technology in high-power converters and medium voltage drives, and provides a complete analysis of various converter topologies, modulation techniques, practical drive configurations, and advanced control schemes. Supplemented with more than 250 illustrations, the author illustrates key concepts with simulations and experiments. Practical problems, along with accompanying solutions, are presented to help you tackle real-world issues.

High-Yield Vegetable Gardening Jan 24 2022 You won't believe your eyes when you see the size of your harvest! In High-Yield Vegetable Gardening, authors Colin McCrate and Brad Halm show how you can make your food garden much more productive, no matter how big or small it is. You'll learn their secrets for preparing the soil, selecting and rotating your crops, and mapping out a specific customized plan to make the most of your space and your growing season. Packed with the charts, tables, schedules, and worksheets you need — as well as record-keeping pages so you can repeat your successes next year — this book is an essential tool for the serious gardener.

Effects of High-Power Laser Radiation Jun 28 2022 Effects of High-Power Laser Radiation describes the interactions between high-power laser beams and matter. This book is divided into eight chapters that particularly focus on interactions such as heating, melting, vaporization, and plasma production. The opening chapters examine the laser properties, types, measurement techniques, and safety aspects. The succeeding chapters deal with a variety of physical phenomena and mechanisms of laser-induced particle emission, as well as the initiation and development of gas breakdown phenomena. Other chapters explore the effects and damage of various interactions in transparent materials and on biological systems. The final chapter looks into the practical applications of the various laser effects to diverse technological fields. This book will prove useful to scientists interested in the physical phenomena of laser effects and engineers interested in practical applications of laser effects.

Modular High-temperature Gas-cooled Reactor Power Plant Nov 21 2021 "Modular High-temperature Gas-cooled Reactor Power Plant" introduces the power plants driven by modular high temperature gas-cooled reactors (HTR), which are characterized by their inherent safety features and high output temperatures. HTRs have the potential to be adopted near demand side to supply both electricity and process heat, directly replacing conventional fossil fuels. The world is confronted with two dilemmas in the energy sector, namely climate change and energy supply security. HTRs have the potential to significantly alleviate these concerns. This book will provide readers with a thorough understanding of HTRs, their history, principles, and fields of application. The book is intended for researchers and engineers involved with nuclear engineering and energy technology.

High-Output Management Nov 02 2022

Design and Construction of High-performance Homes Oct 28 2019 Both professionals and students are increasingly committed to achieving high-performance metrics in the design, construction and operation of residential buildings. This book responds to this demand by offering a comprehensive guide which features: architectural innovations in building skin technologies which make lighter more transparent buildings high performing energy-free architectural design principles and advances in building-integrated photovoltaics essential engineering

principles, controls and approaches to simulation for achieving net zero the advantages of integrated design in residential construction and the challenges and opportunities it engenders detailed case studies of innovative homes which have incorporated low-energy design solutions, new materials, alternative building assemblies, digital fabrication, integrated engineering systems and operational controls. Divided into four parts, the book discusses the requisite AEC (Architecture, Engineering and Construction) knowledge needed when building a high-performance home. It also communicates this information across four case studies, which provide the reader with a thorough overview of all aspects to be considered in the design and construction of sustainable homes. With contributions from experts in the field, the book provides a well-rounded and multi-faceted approach. This book is essential reading for students and professionals in design, architecture, engineering (civil, mechanical and electrical), construction and energy management.
High Performance Python Dec 31 2019 Your Python code may run correctly, but you need it to run faster. Updated for Python 3, this expanded edition shows you how to locate performance bottlenecks and significantly speed up your code in high-data-volume programs. By exploring the fundamental theory behind design choices, High Performance Python helps you gain a deeper understanding of Python's implementation. How do you take advantage of multicore architectures or clusters? Or build a system that scales up and down without losing reliability? Experienced Python programmers will learn concrete solutions to many issues, along with war stories from companies that use high-performance Python for social media analytics, productionized machine learning, and more. Get a better grasp of NumPy, Cython, and profilers Learn how Python abstracts the underlying computer architecture Use profiling to find bottlenecks in CPU time and memory usage Write efficient programs by choosing appropriate data structures Speed up matrix and vector computations Use tools to compile Python down to machine code Manage multiple I/O and computational operations concurrently Convert multiprocessing code to run on local or remote clusters Deploy code faster using tools like Docker

High-Efficiency Solar Cells Mar 14 2021 As part of the effort to increase the contribution of solar cells (photovoltaics) to our energy mix, this book addresses three main areas: making existing technology cheaper, promoting advanced technologies based on new architectural designs, and developing new materials to serve as light absorbers. Leading scientists throughout the world create a fundamental platform for knowledge sharing that combines the physics, materials, and device architectures of high-efficiency solar cells. While providing a comprehensive introduction to the field, the book highlights directions for further research, and is intended to stimulate readers' interest in the development of novel materials and technologies for solar energy applications.
The Four Pillars of High Performance Jul 26 2019 How to stay on course and achieve extraordinary performance in a sea of change In today's change-or-die business environment, companies that achieve the highest levels of performance are "robust organizations"--those that adapt quickly and without losing their strategic direction. Distilling decades of research conducted by Rand, one of the nation's most respected business think tanks, The Four Pillars of High Performance explores the strategies to truly manage change. Using examples, author Paul C. Light extracts powerful lessons for managers and executives, and he provides readers with: Never-before-published research by Rand on the shared traits of the highest-performing companies Cutting-edge techniques for improving performance across an organization Valuable insights into the five major attributes of agility, alignment, metrics, incentives, and impact Case studies and vignettes drawn from the experiences of industry leaders in every sector
High Power Laser Propulsion Oct 09 2020 This book gives an in-depth analysis of the physical phenomena of thrust production by laser radiation, as well as laser propulsion engines, and laser-propelled vehicles. It brings together into a unified context accumulated up-to-date information on laser propulsion research, considering propulsion phenomena, laser propulsion techniques, design of vehicles with laser propulsion engines, and high-power laser systems to provide movement

for space vehicles. In particular, the reader will find detailed coverage of: designs of laser propulsion engines, operating as both air-breathing and ramjet engines to launch vehicles into LEOs; Assembly of vehicles whereby laser power from a remote laser is collected and directed into a propulsion engine; and, the laser-adaptive systems that control a laser beam to propel vehicles into orbits by delivering laser power through the Earth's atmosphere. This book is essential reading for researchers and professionals involved in laser propulsion.

High Power Microwaves Aug 31 2022 The first edition of High Power Microwaves was considered to be the defining book for this field. Not merely updated but completely revised and rewritten, the second edition continues this tradition. Written from a systems perspective, the book provides a unified, coherent presentation of the fundamentals in this rapidly changing field. The p

Power Ultrasonics Apr 14 2021 The industrial interest in ultrasonic processing has revived during recent years because ultrasonic technology may represent a flexible “green alternative for more energy efficient processes. A challenge in the application of high-intensity ultrasound to industrial processing is the design and development of specific power ultrasonic systems for large scale operation. In the area of ultrasonic processing in fluid and multiphase media the development of a new family of power generators with extensive radiating surfaces has significantly contributed to the implementation at industrial scale of several applications in sectors such as the food industry, environment, and manufacturing. Part one covers fundamentals of nonlinear propagation of ultrasonic waves in fluids and solids. It also discusses the materials and designs of power ultrasonic transducers and devices. Part two looks at applications of high power ultrasound in materials engineering and mechanical engineering, food processing technology, environmental monitoring and remediation and industrial and chemical processing (including pharmaceuticals), medicine and biotechnology. Covers the fundamentals of nonlinear propagation of ultrasonic waves in fluids and solids. Discusses the materials and designs of power ultrasonic transducers and devices. Considers state-of-the-art power sonic applications across a wide range of industries.

Embedded Computing for High Performance Jan 30 2020 Embedded Computing for High Performance: Design Exploration and Customization Using High-level Compilation and Synthesis Tools provides a set of real-life example implementations that migrate traditional desktop systems to embedded systems. Working with popular hardware, including Xilinx and ARM, the book offers a comprehensive description of techniques for mapping computations expressed in programming languages such as C or MATLAB to high-performance embedded architectures consisting of multiple CPUs, GPUs, and reconfigurable hardware (FPGAs). The authors demonstrate a domain-specific language (LARA) that facilitates retargeting to multiple computing systems using the same source code. In this way, users can decouple original application code from transformed code and enhance productivity and program portability. After reading this book, engineers will understand the processes, methodologies, and best practices needed for the development of applications for high-performance embedded computing systems. Focuses on maximizing performance while managing energy consumption in embedded systems Explains how to retarget code for heterogeneous systems with GPUs and FPGAs Demonstrates a domain-specific language that facilitates migrating and retargeting existing applications to modern systems Includes downloadable slides, tools, and tutorials

High Power Diode Lasers Jun 04 2020 This book summarizes a five year research project, as well as subsequent results regarding high power diode laser systems and their application in materials processing. The text explores the entire chain of technology, from the semiconductor technology, through cooling mounting and assembly, beam shaping and system technology, to applications in the processing of such materials as metals and polymers. Includes theoretical models, a range of important parameters and practical tips.

The Messy Middle Aug 26 2019 NATIONAL BESTSELLER NAMED ONE OF THE MOST INSPIRING BOOKS OF 2018 BY INC. NAMED ONE OF THE BEST STARTUP BOOKS OF ALL TIME BY BOOKAUTHORITY The

Messy Middle is the indispensable guide to navigating the volatility of new ventures and leading bold creative projects by Scott Belsky, bestselling author, entrepreneur, Chief Product Officer at Adobe, and product advisor to many of today's top start-ups. Creating something from nothing is an unpredictable journey. The first mile births a new idea into existence, and the final mile is all about letting go. We love talking about starts and finishes, even though the middle stretch is the most important and often the most ignored and misunderstood. Broken into three sections with 100+ lessons, this no-nonsense book will help you: • Endure the roller coaster of successes and failures by strengthening your resolve, embracing the long-game, and short-circuiting your reward system to get to the finish line. • Optimize what's working so you can improve the way you hire, better manage your team, and meet your customers' needs. • Finish strong and avoid the pitfalls many entrepreneurs make, so you can overcome resistance, exit gracefully, and continue onto your next creative endeavor with ease. With insightful interviews from today's leading entrepreneurs, artists, writers, and executives, as well as Belsky's own experience working with companies like Airbnb, Pinterest, Uber, and sweetgreen, The Messy Middle will outfit you to find your way through the hardest parts of any bold project or new venture.

Packaging of High Power Semiconductor Lasers Sep 19 2021 This book introduces high power semiconductor laser packaging design. The challenges of the design and various packaging and testing techniques are detailed by the authors. New technologies and current applications are described in detail.

The Gold Mine Effect Dec 11 2020 'A great read and a fascinating insight into performance.' Sir Clive Woodward We all want to discover our hidden talents and make an impact with them. But how? Rasmus Ankersen, an ex-footballer and performance specialist, quit his job and for six intense months lived with the world's best athletes in an attempt to answer this question. Why have the best middle distance runners grown up in the same Ethiopian village? Why are the leading female golfers from South Korea? How did one athletic club in Kingston, Jamaica, succeed in producing so many world-class sprinters? Ankersen presents his surprising conclusions in seven lessons on how anyone - or any business, organisation or team - can defy the many misconceptions of high performance and learn to build their own gold mine of real talent.

Leveraged Finance May 04 2020 A timely guide to today's high-yield corporate debt markets Leveraged Finance is a comprehensive guide to the instruments and markets that finance much of corporate America. Presented in five sections, this experienced author team covers topics ranging from the basics of bonds and loans to more advanced topics such as valuing CDs, default correlations among CLOs, and hedging strategies across corporate capital structures. Additional topics covered include basic corporate credit, relative value analysis, and various trading strategies used by investors, such as hedging credit risk with the equity derivatives of a different company. Stephen Antczak, Douglas Lucas, and Frank Fabozzi present readers with real-market examples of how investors can identify investment opportunities and how to express their views on the market or specific companies through trading strategies, and examine various underlying assets including loans, corporate bonds, and much more. They also offer readers an overview of synthetic and structured products such as CDS, LCDS, CDX, LCDX, and CLOs. Leveraged Finance has the information you need to succeed in this evolving financial arena.

High-yield Heart Nov 29 2019 High-Yield™ Heart is the second in a series of High-Yield™ Systems books by a best-selling medical textbook author that cover the basic sciences of the medical school curriculum using a systems-based approach. This approach helps students integrate their first two years' course material and offers excellent preparation for USMLE Step 1 and clinical rotations. Chapters cover each basic science—embryology, gross anatomy, radiology, histology, physiology, pathology, microbiology, and pharmacology—as it relates to the heart and cardiovascular system. The book is replete with radiographs, CT and MRI scans, and micrographs of normal tissue and pathologic conditions. Sections of the book are tabbed for easy reference.

Deep Purpose Oct 21 2021 Thinkers50 Top 10 Best New Management

Books for 2022 A distinguished Harvard Business School professor offers a compelling reassessment and defense of purpose as a management ethos, documenting the vast performance gains and social benefits that become possible when firms manage to get purpose right. Few business topics have aroused more skepticism in recent years than the notion of corporate purpose, and for good reason. Too many companies deploy purpose, or a reason for being, as a promotional vehicle to make themselves feel virtuous and to look good to the outside world. Some have only foggy ideas about what purpose is and conflate it with strategy and other concepts like “mission,” “vision,” and “values.” Even well-intentioned leaders don’t understand purpose’s full potential and engage half-heartedly and superficially with it. Outsiders spot this and become cynical about companies and the broader capitalist endeavor. Having conducted extensive field research, Ranjay Gulati reveals the fatal mistakes leaders unwittingly make when attempting to implement a reason for being. Moreover, he shows how companies can embed purpose much more deeply than they currently do, delivering impressive performance benefits that reward customers, suppliers, employees, shareholders, and communities alike. To get purpose right, leaders must fundamentally change not only how they execute it but also how they conceive of and relate to it. They must practice what Gulati calls deep purpose, furthering each organization’s reason for being more intensely, thoughtfully, and comprehensively than ever before. In this authoritative, accessible, and inspiring guide, Gulati takes readers inside some of the world’s most purposeful companies to understand the secrets to their successes. He explores how leaders can pursue purpose more deeply by navigating the inevitable tradeoffs more deliberately and effectively to balance between short- and long-term value; building purpose more systematically into every key organizational function to mobilize stakeholders and enhance performance; updating organizations to foster more autonomy and collaboration, which in turn allow individual employees to work more purposefully; using powerful storytelling to communicate a reason for being, arousing emotions and building a community of inspired and committed stakeholders; and building cultures that don’t merely support purpose, but also allow employees to link the corporate purpose to their own personal reasons for being. As Gulati argues, a deeper engagement with purpose holds the key not merely to the well-being of individual companies but also to humanity’s future. With capitalism under siege and relatively low levels of trust in business, purpose can serve as a radically new operating system for the enterprise, enhancing performance while also delivering meaningful benefits to society. It’s the kind of inspired thinking that businesses—and the rest of us—urgently need.

Engineering of High-Performance Textiles Jul 30 2022 Engineering of High-Performance Textiles discusses the fiber-to-fabric engineering of various textile products. Each chapter focuses on practical guidelines and approaches for common issues in textile research and development. The book discusses high-performance fibers and yarns before presenting the engineering fabrics and architectures needed for particular properties required of high-performance textiles. Properties covered include moisture absorption, pilling resistant knitwear, fire retardant fabrics, camouflage fabrics, insect repellent fabrics, filtration, and many more. Coordinated by two highly distinguished editors, this book is a practical resource for all those engaged in textile research, development and production, for both traditional and new-generation textile products, and for academics involved in research into textile science and technology. Offers a range of perspectives on high-performance textiles from an international team of authors with diverse expertise in academic research, textile development and manufacture Provides systematic and comprehensive coverage of the topic from fabric construction, through product development, to the range of current and potential applications that exploit high-performance textile technology Led by two high-profile editors with many years’ experience in engineering high-performance textiles

Semiconductor Laser Engineering, Reliability and Diagnostics May 16 2021 This reference book provides a fully integrated novel approach to the development of high-power, single-transverse mode, edge-emitting diode lasers by addressing the complementary topics of device

engineering, reliability engineering and device diagnostics in the same book, and thus closes the gap in the current book literature. Diode laser fundamentals are discussed, followed by an elaborate discussion of problem-oriented design guidelines and techniques, and by a systematic treatment of the origins of laser degradation and a thorough exploration of the engineering means to enhance the optical strength of the laser. Stability criteria of critical laser characteristics and key laser robustness factors are discussed along with clear design considerations in the context of reliability engineering approaches and models, and typical programs for reliability tests and laser product qualifications. Novel, advanced diagnostic methods are reviewed to discuss, for the first time in detail in book literature, performance- and reliability-impacting factors such as temperature, stress and material instabilities. Further key features include: practical design guidelines that consider also reliability related effects, key laser robustness factors, basic laser fabrication and packaging issues; detailed discussion of diagnostic investigations of diode lasers, the fundamentals of the applied approaches and techniques, many of them pioneered by the author to be fit-for-purpose and novel in the application; systematic insight into laser degradation modes such as catastrophic optical damage, and a wide range of technologies to increase the optical strength of diode lasers; coverage of basic concepts and techniques of laser reliability engineering with details on a standard commercial high power laser reliability test program. Semiconductor Laser Engineering, Reliability and Diagnostics reflects the extensive expertise of the author in the diode laser field both as a top scientific researcher as well as a key developer of high-power highly reliable devices. With invaluable practical advice, this new reference book is suited to practising researchers in diode laser technologies, and to postgraduate engineering students. Dr. Peter W. Epperlein is Technology Consultant with his own semiconductor technology consulting business Pwe-PhotonicsElectronics-IssueResolution in the UK. He looks back at a thirty years career in cutting edge photonics and electronics industries with focus on emerging technologies, both in global and start-up companies, including IBM, Hewlett-Packard, Agilent Technologies, Philips/NXP, Essient Photonics and IBM/JDSU Laser Enterprise. He holds Pre-Dipl. (B.Sc.), Dipl. Phys. (M.Sc.) and Dr. rer. nat. (Ph.D.) degrees in physics, magna cum laude, from the University of Stuttgart, Germany. Dr. Epperlein is an internationally recognized expert in compound semiconductor and diode laser technologies. He has accomplished R&D in many device areas such as semiconductor lasers, LEDs, optical modulators, quantum well devices, resonant tunneling devices, FETs, and superconducting tunnel junctions and integrated circuits. His pioneering work on sophisticated diagnostic research has led to many world’s first reports and has been adopted by other researchers in academia and industry. He authored more than seventy peer-reviewed journal papers, published more than ten invention disclosures in the IBM Technical Disclosure Bulletin, has served as reviewer of numerous proposals for publication in technical journals, and has won five IBM Research Division Awards. His key achievements include the design and fabrication of high-power, highly reliable, single mode diode lasers. Book Reviews “Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices”. By Peter W. Epperlein Prof. em. Dr. Heinz Jäckel, High Speed Electronics and Photonics, Swiss Federal Institute of Technology ETH Zürich, Switzerland The book “Semiconductor Laser Engineering, Reliability and Diagnostics” by Dr. P.W. Epperlein is a landmark in the recent literature on semiconductor lasers because it fills a longstanding gap between many excellent books on laser theory and the complex and challenging endeavor to fabricate these devices reproducibly and reliably in an industrial, real world environment. Having worked myself in the early research and development of high power semiconductor lasers, I appreciate the competent, complete and skillful presentation of these three highly interrelated topics, where small effects have dramatic consequences on the success of a final product, on the ultimate performance and on the stringent reliability requirements, which are the name of the game. As the title suggests the author addresses three tightly interwoven and critical topics of state-of-the-art power laser research. The three parts are: device and mode stability engineering

(chapter 1, 2), reliability mechanisms and reliability assessment strategies (chapter 3, 4, 5, 6) and finally material and device diagnostics (chapter 7, 8, 9) all treated with a strong focus on the implementation. This emphasis on the complex practical aspects for a large-scale power laser fabrication is a true highlight of the book. The subtle interplay between laser design, reliability strategies, advanced failure analysis and characterization techniques are elaborated in a very rigorous and scientific way using a very clear and easy to read representation of the complex interrelation of the three major topics. I will abstain from trying to provide a complete account of all the topics but mainly concentrate on the numerous highlights. The first part 1 “Laser Engineering” is divided in two chapters on basic electronic-optical, structural, material and resonator laser engineering on the one side, and on single mode control and stability at very high, still reliable power-levels with the trade-off between mirror damage, single mode stability on the other side. To round up the picture less well-known concepts and the state-of-the-art of large-area lasers, which can be forced into single-mode operation, are reviewed carefully. The subtle and complex interplay, which is challenging to optimize for a design for reliability and low stress as a major boundary condition is crucial for the design. The section gives a rather complete and well-referenced account of all relevant aspects, relations and trade-offs for understanding the rest of the book. The completeness of the presentation on power laser diode design based on basic physical and plausible arguments is mainly based on analytic mathematical relations as well as experiments providing a new and well-balanced addition for the power diode laser literature in particular. Modern 2D self-consistent electro-optical laser modeling including carrier hole burning and thermal effects – this is important because the weak optical guiding and gain-discrimination depend critically on rather small quantities and effects, which are difficult to optimize experimentally – is used in the book for simulation results, but is not treated separately. The novel and really original, “gap-filling” bulk of the book is elaborated by the author in a very clear way in the following four chapters in the part 2 “Laser Reliability” on laser degradation physics and mirror design and passivation at high power, followed then by two very application oriented chapters on reliability design engineering and practical reliability strategies and implementation procedures. This original combination of integral design and reliability aspects – which are mostly neglected in standard literature – is certainly a major plus of this book. I liked this second section as a whole, because it provides excellent insights in degradation physics on a high level and combines it in an interesting and skillful way with the less “glamorous” (unfortunately) but highly relevant reliability science and testing strategies, which is particularly important for devices operating at extreme optical stresses with challenging lifetime requirements in a real word environment. Finally, the last part 3 “Laser Diagnostics” comprising three chapters, is devoted mainly to advanced experimental diagnostics techniques for material integrity, mechanical stress, deep level defects, various dynamic laser degradation effects, surface- and interface quality, and most importantly heating and disordering of mirrors and mirror coatings. The topics of characterization techniques comprising micro-Raman- and micro-thermoreflectance-probing, 2K photoluminescence spectroscopy, micro-electroluminescence and photoluminescence scanning, and deep-level-transient spectroscopy have been pioneered by the author for the specific applications over many years guaranteeing many competent and well represented insights. These techniques are brilliantly discussed and the information distributed in many articles by the author has been successfully unified in a book form. In my personal judgment and liking, I consider the parts 2 and 3 on reliability and diagnostics as the most valuable and true novel contribution of the book, which in combination with the extremely well-covered laser design of part 1 clearly fill the gap in the current diode laser literature, which in this detail has certainly been neglected in the past. In summary, I can highly recommend this excellent, well-organized and clearly written book to readers who are already familiar with basic diode laser theory and who are active in the academic and industrial fabrication and characterization of semiconductor lasers. Due to its completeness, it also serves as an excellent reference of the current state-of-the-art in reliability

engineering and device and material diagnostics. Needless to mention that the quality of the book, its representations and methodical structure meet the highest expectation and are certainly a tribute from the long and broad experience of the author in academic laser science and the industrial commercialization of high power diode lasers. In my opinion, this book was a pleasure to read and due to its quality and relevance deserves a large audience in the power diode laser community! Prof. em. Dr. Heinz Jäckel, High Speed Electronics and Photonics, Swiss Federal Institute of Technology ETH Zürich, Switzerland June 16, 2013

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"Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices". By Peter W. Epperlein Dr. Chung-en Zah, Research Director, Semiconductor Technologies Research, S&T Division, Corning Incorporate, Corning NY, USA This book covers for the first time the three closely interrelated key laser areas of engineering (design), reliability and diagnostics in one book, written by the well-known practitioner in cutting-edge optoelectronics industries, Dr. Peter W. Epperlein. The book closes the gap in the current book literature and is thus a unique and excellent example of how to merge design, reliability and diagnostics aspects in a very professional, profound and complete manner. All physical and technological principles, concepts and practical aspects required for developing and fabricating highly-reliable high-power single-mode laser products are precisely specified and skilfully formulated along with all the necessary equations, figures, tables and worked-out examples making it easy to follow through the nine chapters. Hence, this unique book is a milestone in the diode laser literature and is an excellent reference book not only for diode laser researchers and engineers, but also diode laser users. The engineering part starts with a very informative and clear, well-presented account of all necessary basic diode laser types, principles, parameters and characteristics for an easy and quick understanding of laser functionality within the context of the book. Along with an elaborate and broad discussion of relevant laser material systems, applications, typical output powers, power-limiting factors and reliability tradeoffs, basic fabrication and packaging technologies, this excellent introductory section is well suited to become quickly and easily familiar with practical aspects and issues of diode laser technologies. Of special importance and high usefulness is the first analytic and quantitative discussion in a book on issues of coupling laser power into optical single mode fibers. The second section discusses in a well-balanced, competent and skilful way waveguide topics such as basic high-power design approaches, transverse vertical and lateral waveguide concepts, stability of the fundamental transverse lateral mode and fundamental mode waveguide optimization techniques by considering detrimental effects such as heating, carrier injection, spatial hole burning, lateral current spreading and gain profile variations. Less well-known approaches to force large-area lasers into a single mode operation are well-identified and carefully discussed in depth and breadth. All these topics are elaborated in a very complete, rigorous and scientific way and are clearly articulated and easy to read. In particular, the book works out the complex interaction between the many different effects to optimize high-power single-mode performance at ultimate reliability and thus is of great benefit to every researcher and engineer engaged in this diode laser field. Another novelty and highlight is, for the first time ever in book form, a comprehensive yet concise discussion of diode laser reliability related issues. These are elaborated in four distinct chapters comprising laser degradation physics and modes, optical strength enhancement approaches including mirror passivation/coating and non-absorbing mirror technologies, followed by two highly relevant product-oriented chapters on reliability design engineering concepts and techniques and an elaborate reliability test plan for laser chip and module product qualification. This original and novel approach to link laser design to reliability aspects and requirements provides both, most useful insight into degradation processes such as catastrophic optical mirror damage on a microscopic scale, and a wide selection of effective remedial actions. These accounts, which are of highest significance for lasers operating at the optical stress limit due to extremely high output power densities and most demanding lifetime requirements are very

professionally prepared and discussed in an interesting, coherent and skilful manner. The diagnostics part, consisting of three very elaborate chapters, is most unique and novel with respect to other diode laser books. It discusses for the first time ever on a very high level and in a competent way studies on material integrity, impurity trapping effects, mirror and cavity temperatures, surface- and interface quality, mirror facet disorder effects, mechanical stress and facet coating instability, and diverse laser temperature effects, dynamic laser degradation effects and mirror temperature maps. Of highest significance to design, performance and reliability are the various correlations established between laser device and material parameters. The most different and sophisticated experiments, carried out by the author at micrometer spatial resolutions and at temperatures as low as 2K, provide highly valuable insights into laser and material quality parameters, and reveal for the first time the origins of high power limitations on an atomic scale due to local heating effects and deep level defects. It is of great benefit, that the experimental techniques such as Raman spectroscopy, various luminescence techniques, thermoreflectance and deep-level transient spectroscopy, pioneered by the author for the specific experiments on lasers, are discussed with great expertise in depth and breadth, and the numerous paper articles published by the author are now represented in this book. The book has an elaborate table of contents and index, which are very useful, over 200 illustrative figures and tables, and extensive lists of references to all technical topics at the end of each of the nine chapters, which make it easy to follow from cover to cover or by jumping in at random areas of special interest. Moreover, experimental and theoretical concepts are always illustrated by practical examples and data. I can highly recommend this extremely relevant, well-structured and well-formulated book to all practising researchers in industrial and academic diode laser R&D environments and to post-graduate engineering students interested in the actual problems of designing, manufacturing, testing, characterising and qualifying diode lasers. Due to its completeness and novel approach to combine design, reliability and diagnostics in the same book, it can serve as an ideal reference book as well, and it deserves to be welcomed wordwide by the addressed audience. Dr. Chung-en Zah, Research Director, Semiconductor Technologies Research, S&T Division, Corning Incorporate, Corning NY, USA

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“Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices”. By Peter W. Epperlein Cordinatore Prof. Lorenzo Pavesi, UNIVERSITÀ DEGLI STUDI DI TRENTO, Dipartimento di Fisica / Laboratorio di Nanoscienze This book represents a well thought description of three fundamental aspects of laser technology: the functioning principles, the reliability and the diagnostics. From this point of view, and, as far as I know, this is a unique example of a book where all these aspects are merged together resulting in a well-balanced presentation. This helps the reader to move with ease between different concepts since they are presented in a coherent manner and with the same terminology, symbols and definitions. The book reads well. Despite the subtitle indicates that it is a practical approach, the book is also correct from a formal point of view and presents the necessary equations and derivations to understand both the physical mechanisms and the practicalities via a set of useful formulas. In addition, there is the more important aspect of many real-life examples of how a laser is actually manufactured and which the relevant parameters that determine its behaviour are. It impresses the amounts of information that are given in the book: this would be more typical of a thick handbook on semiconductor laser than of an agile book. Dr. Epperlein was able to identify the most important concepts and to present them in a clear though concise way. I am teaching a course on Optoelectronics and I'm going to advise students to refer to this book, because it has all the necessary concepts and derivations for a systematic understanding of semiconductor lasers with many worked-out examples, which will help the student to grasp the actual problems of designing, manufacturing, testing and using semiconductor lasers. All the various concepts are joined to very useful figures, which, if provided to instructors as files, can be a useful add-on for the use of the book as

text for teaching. Concepts are always detailed with numbers to give a feeling of their practical use. In conclusion, I do find the book suitable for my teaching duties and will refer it to my students. Prof. Dr. Lorenzo Pavesi, Head of the Department of Physics, Head of the Nanoscience Laboratory, University of Trento, Italy 31 May 2013

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“Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices”. By Peter W. Epperlein Robert W. Herrick, Ph.D., Senior Component Reliability Engineer, Intel Corp., Santa Clara, California, USA Dr. Epperlein has done the semiconductor laser community a great service, by releasing the most complete book on the market on the practical issues of how to make reliable semiconductor lasers. While dozens of books have been written over the past couple of decades on semiconductor laser design, only a handful have been written on semiconductor laser reliability. Prior to the release of this book, perhaps 40% of the material could be obtained elsewhere by combining five books: one on laser design, one on laser reliability, one on reliability calculations, and a couple of laser review books. Another 40% could be pieced together by collecting 50 -100 papers on the subjects of laser design, laser fabrication, characterization, and reliability. The remaining 20% have not previously been covered in any comprehensive way. Only the introductory material in the first half of the first chapter has good coverage elsewhere. The large majority of the knowledge in this book is generally held as “trade secret” by those with the expertise in the field, and most of those in the know are not free to discuss. The author was fortunate enough to work for the first half of his career in the IBM research labs, with access to unparalleled resources, and the ability to publish his work without trade secret restrictions. The results are still at the cutting edge of our understanding of semiconductor laser reliability today, and go well beyond the empirical “black box” approach many use of “try everything, and see what works.” The author did a fine job of pulling together material from many disparate fields. Dr. Epperlein has particular expertise in high power single mode semiconductor lasers, and those working on those type of lasers will be especially interested in this book, as there has never been a book published on the fabrication and qualification of such lasers before. But those in almost any field of semiconductor lasers will learn items of interest about device design, fabrication, reliability, and characterization. Unlike most other books, which intend to convey the scientific findings or past work of the author, this one is written more as a “how to” manual, which should make it more accessible and useful to development engineers and researchers in the field. It also has over 200 figures, which make it easier to follow. As with many books of this type, it is not necessary to read it from cover-to-cover; it is best skimmed, with deep diving into any areas of special interest to the reader. The book is remarkable also for how comprehensive it is – even experts will discover something new and useful. Dr. Epperlein’s book is an essential read for anyone looking to develop semiconductor lasers for anything other than pure research use, and I give it my highest recommendation. Robert W. Herrick, Ph.D., Senior Component Reliability Engineer, Intel Corp., Santa Clara, California, USA

High-Power Piezoelectrics and Loss Mechanisms Aug 07 2020 As one of the pioneers of "Piezoelectric Actuators", I have contributed to the commercialization of various products for over 45 years, including million-selling devices, micro-ultrasonic motors for smart-phone camera modules by Samsung Electromechanics, piezoelectric transformers for backlight inverters by Apple laptops, multilayer PZT actuators for diesel injection valves by Denso Corporation, and piezoelectric energy harvesting modules for Programable Air-Burst Munition by the US Army. During the development period for "piezoelectric actuators and transformers," I found that the bottleneck for device miniaturization was heat generation under a high-power drive condition. Thus, in parallel to the piezo-actuator developments, I have been developing various high-power density piezo-ceramic materials with the loss mechanism clarification. Hence, I considered that it was time to organize a textbook based on the previous studies, including my materials development philosophy to stimulate younger generations to reach to the energy

density of up to 100 W/cm3 in the future. Increasing efficiency and saving energy and space (compactness) are one of the important approaches in this 21st-century "sustainable society." High-Power Piezoelectrics and Loss Mechanisims introduces the theoretical background of piezoelectrics, electromechanical phenomenology, loss mechanisms, practical materials, device designs, drive and characterization techniques, and typical applications, and looks forward to the future perspectives in this field. This book is NOT an overall review of this area, but it focuses on important and basic ideas under my development philosophy to understand how to design and develop high-power piezoelectric materials and devices. This textbook is designed for self-learning by the reader aided by the availability of: • Chapter Essentials – Summary for quick memory recovery • Check Points – Answers are provided in the Appendix • Example Problems – To enhance the reader's understanding with full, detailed solutions • Chapter Problems – For the final exam or further consideration

High-Power Diode Lasers Nov 09 2020 Starting from the basics of semiconductor lasers with emphasis on the generation of high optical output power the reader is introduced in a tutorial way to all key technologies required to fabricate high-power diode-laser sources. Various applications are exemplified.

Thermal Effects of High Power Laser Energy on Materials Mar 26 2022 This book offers a tutorial on the response of materials to lasers, with an emphasis on simple, intuitive models with analytical and mathematical solutions, using techniques such as Laplace Transformation to solve most complex heat conduction equations. It examines the relationship between existing thermal parameters of simple metals and looks at the characteristics of materials and their properties in order to investigate and perform theoretical analysis from a heat conduction perspective mathematically. Topics discussed include optical reflectivity of metals at infrared (IR) wavelengths, laser-induced heat flow in materials, the effects of melting and vaporization, the impulse generated in materials by pulsed radiation, and the influence of the absorption in the blow-off region in irradiated material. Written for engineers, scientists, and graduate-level engineering and physics students, Thermal Effects of High Power Laser Energy on Materials provides an in-depth look at high energy laser technology and its potential industrial and commercial applications in such areas as precision cutting, LIDAR and LADAR, and communications. The knowledge gained from this allows you to apply spaced-based relay mirror in order to compensate laser beam divergence back to its original coherency by preventing further thermal blooming that takes place during laser beam propagation through the atmosphere. Examines the state-of-the-art in currently available high energy laser technologies; Includes computer codes that deal with the response of materials to laser radiation; Provides detailed mathematical solutions of thermal response to laser radiation.

Modern High-power Rocketry Dec 23 2021 International conspiracy funded by unimaginable wealth and influence detected and destroyed by one determined man operating on the edge of accountability.

High Output Management Sep 27 2019 High Output Management by Andrew S. Grove | Summary & Analysis Preview: First published in 1983, High Output Management by Andrew Grove is a management guide based on Grove's 15 years of managerial experience and knowledge as a co-founder, president, and chief executive of Intel. As Grove emphasizes in a new introduction to the book, globalization and the information revolution have dramatically changed the workforce, making people ever more replaceable and the market ever more competitive. Companies must adapt to these changes or face their own irrelevance and extinction. The same holds true for workers and managers. Managers, especially middle managers, are often overlooked in business books and forgotten in organizations, yet they are immensely important not only to businesses but to society more broadly. In order to survive and to thrive in their careers, managers must constantly enhance their value by learning and adapting to a changing, often unpredictable business environment... PLEASE NOTE: This is key takeaways and analysis of the book and NOT the original book. Inside this Instaread Summary of High Output Management · Overview of the book · Important People · Key Takeaways · Analysis of Key Takeaways

High Performance Browser Networking Feb 22 2022 How prepared are you to build fast and efficient web applications? This eloquent book provides what every web developer should know about the network, from fundamental limitations that affect performance to major innovations for building even more powerful browser applications—including HTTP 2.0 and XHR improvements, Server-Sent Events (SSE), WebSocket, and WebRTC. Author Ilya Grigorik, a web performance engineer at Google, demonstrates performance optimization best practices for TCP, UDP, and TLS protocols, and explains unique wireless and mobile network optimization requirements. You'll then dive into performance characteristics of technologies such as HTTP 2.0, client-side network scripting with XHR, real-time streaming with SSE and WebSocket, and P2P communication with WebRTC. Deliver superlative TCP, UDP, and TLS performance Speed up network performance over 3G/4G mobile networks Develop fast and energy-efficient mobile applications Address bottlenecks in HTTP 1.x and other browser protocols Plan for and deliver the best HTTP 2.0 performance Enable efficient real-time streaming in the browser Create efficient peer-to-peer videoconferencing and low-latency applications with real-time WebRTC transports

High-Power Laser-Plasma Interaction Apr 26 2022 The field of high-power laser-plasma interaction has grown in the last few decades, with applications ranging from laser-driven fusion and laser acceleration of charged particles to laser ablation of materials. This comprehensive text covers fundamental concepts including electromagnetics and electrostatic waves, parameter instabilities, laser driven fusion,charged particle acceleration and gamma rays. Two important techniques of laser proton interactions including target normal sheath acceleration (TNSA) and radiation pressure acceleration (RPA) are discussed in detail, along with their applications in the field of medicine. An analytical framework is developed for laser beat-wave and wakefield excitation of plasma waves and subsequent acceleration of electrons. The book covers parametric oscillator model and studies the coupling of laser light with collective modes.

High Power Impulse Magnetron Sputtering Oct 01 2022 High Power Impulse Magnetron Sputtering: Fundamentals, Technologies, Challenges and Applications is an in-depth introduction to HiPIMS that emphasizes how this novel sputtering technique differs from conventional magnetron processes in terms of both discharge physics and the resulting thin film characteristics. Ionization of sputtered atoms is discussed in detail for various target materials. In addition, the role of self-sputtering, secondary electron emission and the importance of controlling the process gas dynamics, both inert and reactive gases, are examined in detail with an aim to generate stable HiPIMS processes. Lastly, the book also looks at how to characterize the HiPIMS discharge, including essential diagnostic equipment. Experimental results and simulations based on industrially relevant material systems are used to illustrate mechanisms controlling nucleation kinetics, column formation and microstructure evolution. Includes a comprehensive description of the HiPIMS process from fundamental physics to applications Provides a distinctive link between the process plasma and thin film communities Discusses the industrialization of HiPIMS and its real world applications

Principles of High-Performance Processor Design Mar 02 2020 This book describes how we can design and make efficient processors for high-performance computing, AI, and data science. Although there are many textbooks on the design of processors we do not have a widely accepted definition of the efficiency of a general-purpose computer architecture. Without a definition of the efficiency, it is difficult to make scientific approach to the processor design. In this book, a clear definition of efficiency is given and thus a scientific approach for processor design is made possible. In chapter 2, the history of the development of high-performance processor is overviewed, to discuss what quantity we can use to measure the efficiency of these processors. The proposed quantity is the ratio between the minimum possible energy consumption and the actual energy consumption for a given application using a given semiconductor technology. In chapter 3, whether or not this quantity can be used in practice is discussed, for many real-world applications. In chapter 4, general-purpose processors in the past and present are discussed from this viewpoint. In chapter 5, how we can actually design

processors with near-optimal efficiencies is described, and in chapter 6 how we can program such processors. This book gives a new way to look at the field of the design of high-performance processors.

Analytical Sample Preparation With Nano- and Other High-Performance Materials Sep 07 2020 Analytical Sample Preparation With Nano- and Other High-Performance Materials covers advanced sample treatment techniques and the new materials that can be used to boost their performance. The evolution of sample treatment over the last two decades has resulted in the development of new techniques and application of new materials. This is a must-have resource for those studying advanced analytical techniques and the role of high-performance materials in analytical chemistry. The book explains the underlying principles needed to properly understand sample preparation, and also examines the latest materials - including nanomaterials - that result in greater sensitivity and specificity. The book begins with a section devoted to all the various sample preparation techniques and then continues with sections on high-performance sorbents and high-performance solvents. Combines basic, fundamental principles and advanced concepts and applications for a comprehensive treatment of sample preparation with new materials Defines nano- and other high-performance materials in this context, including carbon nanoparticles, inorganic nanoparticles, ionic liquids, supramolecular solvents, and more Includes discussion of all the latest advancements and new findings in both techniques and materials used for proper sample preparation

The Design of High-Efficiency Turbomachinery and Gas Turbines, second edition, with a new preface Jul 18 2021 The second edition of a comprehensive textbook that introduces turbomachinery and gas turbines through design methods and examples. This comprehensive textbook is unique in its design-focused approach to turbomachinery and gas turbines. It offers students and practicing engineers methods for configuring these machines to perform with the highest possible efficiency. Examples and problems are based on the actual design of turbomachinery and turbines. After an introductory chapter that outlines the goals of the book and provides definitions of terms and parts, the book offers a brief review of the basic principles of thermodynamics and efficiency definitions. The rest of the book is devoted to the analysis and design of real turbomachinery configurations and gas turbines, based on a consistent application of thermodynamic theory and a more empirical treatment of fluid dynamics that relies on the extensive use of design charts. Topics include turbine power cycles, diffusion and diffusers, the analysis and design of three-dimensional free-stream flow, and combustion systems and combustion calculations. The second edition updates every chapter, adding material on subjects that include flow correlations, energy transfer in turbomachines, and three-dimensional design. A solutions manual is available for instructors. This new MIT Press edition makes a popular text available again, with corrections and some updates, to a wide audience of students, professors, and professionals.

High Yield Orthopaedics Jun 16 2021 Get your hands on this concise, visual guide to orthopaedics packed with the absolutely essential facts!. --Book Jacket.

High Throughput Screening for Food Safety Assessment Aug 19 2021 Recent advances in array-based detectors and imaging technologies have provided high throughput systems that can operate within a substantially reduced timeframe and other techniques that can detect multiple contaminants at one time. These technologies are revolutionary in terms of food safety assessment in manufacturing, and will also have a significant impact on areas such as public health and food defence. This book summarizes the latest research and applications of sensor technologies for online and high throughput screening of food. The book first introduces high throughput screening strategies and technology platforms, and discusses key issues in sample collection and preparation. The subsequent chapters are then grouped into four sections: Part I reviews biorecognition techniques; Part II covers the use of optical biosensors and hyperspectral imaging in food safety assessment; Part III focuses on electrochemical and mass-based transducers; and finally Part IV deals with the application of these safety assessment technologies in specific food products, including meat and

poultry, seafood, fruits and vegetables. Summarises the latest research on sensor technologies for online and high-throughput screening of food Covers high-throughput screening and the current and forecast state of rapid contaminant detection technologies Looks at the use of optical and electrochemical biosensors and hyperspectral imaging in food safety assessment and the application of these technologies in specific food products

High Performance Habits May 28 2022 THESE HABITS WILL MAKE YOU EXTRAORDINARY. Twenty years ago, author Brendon Burchard became obsessed with answering three questions: 1. Why do some individuals and teams succeed more quickly than others and sustain that success over the long term? 2. Of those who pull it off, why are some miserable and others consistently happy on their journey? 3. What motivates people to reach for higher levels of success in the first place, and what practices help them improve the most After extensive original research and a decade as the world's leading high performance coach, Burchard found the answers. It turns out that just six deliberate habits give you the edge. Anyone can practice these habits and, when they do, extraordinary things happen in their lives, relationships, and careers. Which habits can help you achieve long-term success and vibrant well-being no matter your age, career, strengths, or personality? To become a high performer, you must seek clarity, generate energy, raise necessity, increase productivity, develop influence, and demonstrate courage. The art and science of how to do all this is what this book is about. Whether you want to get more done, lead others better, develop skill faster, or dramatically increase your sense of joy and confidence, the habits in this book will help you achieve it faster. Each of the six habits is illustrated by powerful vignettes, cutting-edge science, thought-provoking exercises, and real-world daily practices you can implement right now. If you've ever wanted a science-backed, heart-centered plan to living a better quality of life, it's in your hands. Best of all, you can measure your progress. A link to a free professional assessment is included in the book.

Competing Against Luck Feb 10 2021 The foremost authority on innovation and growth presents a path-breaking book every company needs to transform innovation from a game of chance to one in which they develop products and services customers not only want to buy, but are willing to pay premium prices for. How do companies know how to grow? How can they create products that they are sure customers want to buy? Can innovation be more than a game of hit and miss? Harvard Business School professor Clayton Christensen has the answer. A generation ago, Christensen revolutionized business with his groundbreaking theory of disruptive innovation. Now, he goes further, offering powerful new insights. After years of research, Christensen has come to one critical conclusion: our long held maxim—that understanding the customer is the crux of innovation—is wrong. Customers don't buy products or services; they "hire" them to do a job. Understanding customers does not drive innovation success, he argues. Understanding customer jobs does. The "Jobs to Be Done" approach can be seen in some of the world's most respected companies and fast-growing startups, including Amazon, Intuit, Uber, Airbnb, and Chobani yogurt, to name just a few. But this book is not about celebrating these successes—it's about predicting new ones. Christensen contends that by understanding what causes customers to "hire" a product or service, any business can improve its innovation track record, creating products that customers not only want to hire, but that they'll pay premium prices to bring into their lives. Jobs theory offers new hope for growth to companies frustrated by their hit and miss efforts. This book carefully lays down Christensen's provocative framework, providing a comprehensive explanation of the theory and why it is predictive, how to use it in the real world—and, most importantly, how not to squander the insights it provides.

High-yield Brain and Behavior Apr 02 2020 High-Yield™ Brain and Behavior is the fourth volume in the High-Yield™ Systems Series, which covers the basic sciences of the medical school curriculum using a systems-based approach. This book is the only review book to cover the combined material from neuroscience and behavioral science courses in an outline format with a focus on the USMLE Step 1. Chapters cover each basic science—embryology, gross anatomy, radiology, histology,

physiology, pathology, microbiology, and pharmacology—as it relates to the nervous system. Patient snapshots provide concise descriptions of classic clinical cases. Tables help students memorize large amounts of information, and figures provide detailed visual cues.

Generation and Application of High Power Microwaves Jul 06 2020 Written at the graduate level, Generation and Application of High Power Microwaves discusses the basic physics of the generation of microwave and radiofrequency waves in the megawatt power range and the application of these ideas to a range of devices such as klystrons, gyrotrons, and free electron lasers. The book also contains chapters covering the transmission of the power through waveguides and the problems associated with mode conversion in transmission lines. The main application area covered is the heating and current drive in tokamaks and other devices for research into controlled nuclear fusion. Other applications of high power microwave technology are not neglected, and among those discussed are multiple charged ion and soft x-ray sources, electron spin resonance spectroscopy, advanced materials processing, millimeter wave radar, and supercolliders.