Learning To Pass ECDL 40 For Office XP

Tailoring the Emission of Stripe-array Diode Lasers with External Cavities to Enable Nonlinear Frequency Conversion *A deep ultraviolet laser light source by frequency doubling of GaN based external cavity diode laser radiation* **Solid-State Mid-Infrared Laser Sources Laser Applications to Chemical and Environmental Analysis History of Computing: Learning from the Past** The Oxford Handbook of Deaf Studies in Learning and Cognition **A compact mode-locked diode laser system for high precision frequency comparison experiments (Band 64)** Laser Technology and its Applications Delivering Digital Services **Optical Design and Engineering** *Research and Advanced Technology for Digital Libraries* **JJAP** *Japanese Journal of Applied Physics* **Current Trends and Future Practices for Digital Literacy and Competence** *ZnO Nanocrystals and Allied Materials* **Optics Letters** *Technical Digest* The Greek Element in English Words **Tunable External Cavity Diode Lasers** *Cyber Arms* Enhancing Teaching in Higher Education **Professional Issues in Information Technology JJAP Letters** Analysis and Solutions for Switching Noise Coupling in Mixed-Signal ICs Proceedings of the National Academy of Sciences of the United States of America **Proceedings of DAE-BRNS National Laser Symposium. Precision Spectroscopy, Diode Lasers, and Optical Frequency Measur** *Teaching Information Technology 14+ Chinese Physics Letters* **Journal of the National Institute of Information and Communications Technology** Information Management Report **Learning and Collaboration Technologies. Learning and Teaching** *Informatics in Schools: Contributing to 21st Century Education* International Conference on Engineering of Complex Computer Systems *Surface Science Tools for Nanomaterials Characterization Laser Experiments for Chemistry and Physics* **OECD e-Government Studies: Hungary 2007** *Youth Technoculture: From Aesthetics to Politics Single Frequency Semiconductor Lasers* Active and Passive Optical Components for Communications

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Proceedings of the National Academy of Sciences of the United States of America Oct 08 2020

Learning and Collaboration Technologies. Learning and Teaching Mar 01 2020 This two-volume set LNCS 10924 and 10925 constitute the refereed proceedings of the 5th International Conference on Learning and Collaboration Technologies, LCT 2018, held as part of the 20th International Conference on Human-Computer Interaction, HCII 2018, in Las Vegas, NV, USA in July 2018. The 1171 papers presented at HCII 2018 conferences were carefully reviewed and selected from 4346 submissions. The papers cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of applications areas. The papers in this volume are organized in the following topical sections: designing and evaluating systems and applications, technological innovation in education, learning and collaboration, learners, engagement, motification, and skills, games and gamification of learning, technology-enhanced teaching and assessment, computing and engineering education.?

Active and Passive Optical Components for Communications Jun 23 2019

Analysis and Solutions for Switching Noise Coupling in Mixed-Signal ICs Nov 08 2020 Modern microelectronic design is characterized by the integration of full systems on a single die. These systems often include large high performance digital circuitry, high resolution analog parts, high driving I/O, and maybe RF sections. Designers of such systems are constantly faced with the challenge to achieve compatibility in electrical characteristics of every section: some circuitry presents fast transients and large consumption spikes, whereas others require quiet environments to achieve resolutions well beyond millivolts. Coupling between those sections is usually unavoidable, since the entire system shares the same silicon substrate bulk and the same package. Understanding the way coupling is produced, and knowing methods to isolate coupled circuitry, and how to apply every method, is then mandatory knowledge for every IC designer. Analysis and Solutions for Switching Noise Coupling in Mixed-Signal ICs is an in-depth look at coupling through the common silicon substrate, and noise at the power supply lines. It explains the elementary knowledge needed to understand these phenomena and presents a review of previous works and new research results. The aim is to provide an understanding of the reasons for these particular ways of coupling, review and suggest solutions to noise coupling, and provide criteria to apply noise reduction. Analysis and Solutions for Switching Noise Coupling in Mixed-Signal ICs is an ideal book, both as introductory material to noise-coupling problems in mixed-signal ICs, and for more advanced designers facing this problem.

Laser Applications to Chemical and Environmental Analysis Jul 29 2022

Tailoring the Emission of Stripe-array Diode Lasers with External Cavities to Enable Nonlinear Frequency Conversion Nov 01 2022 A huge number of applications require coherent radiation in the visible spectral range. Since diode lasers are very compact and efficient light sources, there exists a great interest to cover these applications with diode laser emission. Despite modern band gap engineering not all wavelengths can be accessed with diode laser radiation. Especially in the visible spectral range between 480 nm and 630 nm no emission from diode lasers is available, yet. Nonlinear frequency conversion of near-infrared radiation is a common way to generate coherent emission in the visible spectral range. However, radiation with extraordinary spatial temporal and spectral quality is required to pump frequency conversion. Broad area (BA) diode lasers are reliable high power light sources in the near-infrared spectral range. They belong to the most efficient coherent light sources with electro-optical efficiencies of more than 70%. Standard BA lasers are not suitable as pump lasers for frequency conversion because of their poor beam quality and spectral properties. For this purpose, tapered lasers and diode lasers with Bragg gratings are utilized. However, these new diode laser structures demand for additional manufacturing and assembling steps that makes their processing challenging and expensive. An alternative to BA diode lasers is the stripe-array architecture. The emitting area of a stripe-array diode laser is comparable to a BA device and the manufacturing of these arrays requires only one additional process step. Such a stripe-array consists of several narrow striped emitters realized with close proximity. Due to the overlap of the fields of neighboring emitters or the presence of leaky waves, a strong coupling between the emitters exists. As a consequence, the emission of such an array is characterized by a so called supermode. However, for the free running stripe-array mode competition between several supermodes occurs because of the lack of wavelength stabilization. This leads to power fluctuations, spectral instabilities and poor beam quality. Thus, it was necessary to study the emission properties of those stripe-arrays to find new concepts to realize an external synchronization of the emitters. The aim was to achieve stable longitudinal and transversal single mode operation with high output powers giving a brightness sufficient for efficient nonlinear frequency conversion. For this purpose a comprehensive analysis of the stripe-array devices was done here. The physical effects that are the origin of the emission characteristics were investigated theoretically and experimentally. In this context numerical models could be verified and extended. A good agreement between simulation and experiment was observed. One way to stabilize a specific supermode of an array is to operate it in an external cavity. Based on mathematical simulations and experimental work, it was possible to design novel external cavities to select a specific supermode and stabilize all emitters of the array at the same wavelength. This resulted in stable emission with 1 W output power, a narrow bandwidth in the range of 2 MHz and a very good beam quality with $M^2$1.5. This is a new level of brightness and brilliance compared to other BA and stripe-array diode laser systems. The emission from this external cavity diode laser (ECDL) satisfied the requirements for nonlinear frequency conversion. Furthermore, a huge improvement to existing concepts was made. In the next step newly available periodically poled crystals were used for second harmonic generation (SHG) in single pass setups. With the stripe-array ECDL as pump source, more than 140 mW of coherent radiation at 488 nm could be generated with a very high opto-optical conversion efficiency. The generated blue light had very good transversal and longitudinal properties and could be used to generate biphotons by parametric down-conversion. This was feasible because of the improvement made with the infrared stripe-array diode lasers due to the development of new physical concepts.
Optics Letters Jul 17 2021
Professional Issues in Information Technology Jan 11 2021 Professional IT practitioners need not only the appropriate technical skills, but also a broad understanding of the context in which they operate. This book provides a unique introduction to: social, legal, financial, organizational and ethical issues in the context of the IT industry; the role of professional codes of conduct and ethics; and key legislation. It is designed to accompany the BCS Professional Examination Core Diploma Module: Professional Issues in Information Systems Practice.
OECD e-Government Studies: Hungary 2007 Sep 26 2019 This comprehensive review of e-government in Hungary draws important lessons from the Hungarian experience and identifies the challenges Hungary faces in using e-government to improve government.
International Conference on Engineering of Complex Computer Systems Dec 30 2019 This volume covers topics including: dependable real-time systems; object-oriented design in complex systems; complex system architecture; and fault management in dependable systems."
Surface Science Tools for Nanomaterials Characterization Nov 28 2019 Fourth volume of a 40volume series on nano science and nanotechnology, edited by the renowned scientist Challa S.S.R. Kumar. This handbook gives a comprehensive overview about Surface Science Tools for Nanomaterials Characterization. Modern applications and state-of-the-art techniques are covered and make this volume an essential reading for research scientists in academia and industry.
Precision Spectroscopy, Diode Lasers, and Optical Frequency Measur Aug 06 2020 A selected set of reprints from the Optical Frequency Measurement Group of the Time and Frequency Div. of the Nat. Inst. of Standards and Technology and consists of work published between 1987 and 1997. The 2 programs represented are (1) development of tunable diode-laser technology for scientific applications and precision measurements, and (2) research toward the goal of realizing optical-frequency measurements and synthesis. The papers are organized in 5 categories: diode laser technology; tunable laser systems; laser spectroscopy; optical synthesis and extended wavelength coverage; and multi-photon interactions and optical coherence.
Chinese Physics Letters Jun 03 2020
Enhancing Teaching in Higher Education Feb 09 2021 This book brings together a collection of ground-breaking research and tested techniques in the field of learning and teaching in higher education. It provides an accessible, authoritative account of the latest developments, outlining how to apply learning theory and best practice to everyday teaching and providing advice on overcoming problems of implementation. Evidence is drawn from funded projects and innovative practitioners from a wide range of disciplines and backgrounds and covers areas including approaches to learning, working with students, enhancing the progress and development of students and supporting and developing your own practice. Enhancing Teaching in Higher Education sums up the state of learning and teaching in higher education today and is a reliable source of advice and ideas for new as well as experienced lecturers wanting to improve their students' learning.
Journal of the National Institute of Information and Communications Technology May 03 2020

JJAP Nov 20 2021

Informatics in Schools: Contributing to 21st Century Education Jan 29 2020 This book constitutes the refereed proceedings of the 5th International Conference on Informatics in Schools: Situation, Evolution and Perspectives, ISSEP 2011, held in Bratislava, Slovakia, in October 2011. The 20 revised full papers presented were carefully reviewed and selected from 69 submissions. A broad variety of topics related to teaching informatics in schools is addressed ranging from national experience reports to paedagogical and methodological issues. The papers are organized in topical sections on informatics education - the spectrum of options, national perspectives, outreach programmes, teacher education, informatics in primary schools, advanced concepts of informatics in schools, as well as competitions and exams.

Technical Digest Jun 15 2021

Research and Advanced Technology for Digital Libraries Dec 22 2021 This book constitutes the proceedings of the 14th European Conference on Research and Advanced Technology for Digital Libraries, ECDL 2010, held in Glasgow, UK, in September 2010. The 22 long papers, 14 short papers, 19 posters and 9 demos presented in this volume were carefully reviewed and selected from 102 full paper submissions, 40 poster submissions, and 13 demo submissions. In addition the book contains the abstract of a keynote speech and an appendix stating information on the doctoral consortium, the workshops, and tutorials, as well as the panel, which were held at the conference. The papers are grouped in topical sections on system architectures, metadata, multimedia IR, interaction and interoperability, digital preservation, social Web/Web 2.0, search in digital libraries, (meta) analysis of digital libraries, query log analysis, cooperative work in DLs, ontologies, and domain-specific DLs, posters and demos.

JJAP Letters Dec 10 2020

Laser Experiments for Chemistry and Physics Oct 27 2019 A collection of experiments to introduce lasers into the undergraduate curricula in chemistry and physics. A variety of experiments are included with different levels of complexity. All have background information, experimental details and the theoretical background necessary to interpret the results.

Current Trends and Future Practices for Digital Literacy and Competence Sep 18 2021 "This book offers a look at the latest research within digital literacy and competence, setting the bar for the digital citizen of today and tomorrow"--Provided by publisher.

Youth Technoculture: From Aesthetics to Politics Aug 25 2019 In Youth Technoculture: From Aesthetics to Politics, Sylvie Octobre offers a reflexion on the major changes that originated from cultural participation in the digital era, and their effects on education and politics.

Information Management Report Apr 01 2020

A deep ultraviolet laser light source by frequency doubling of GaN based external cavity diode laser radiation Sep 30 2022 A compact and portable laser light source emitting in the wavelength range between 210 nm and 230 nm would enable numerous applications outside of laboratory environments, such as sterilization and disinfection of medical equipment, water purification or gas and air analysis using absorption spectroscopy. Such a source is also highly attractive for the identification and quantification of proteins and biomolecules by means of laser-induced fluorescence or Raman spectroscopy. In this thesis, a novel concept to realize such a compact and portable laser light source with low power consumption and an emission around 222 nm is investigated. The developed concept is based on single-pass frequency doubling of a commercially available high-power GaN laser diode emitting in the blue spectral range. Due to the low frequency doubling conversion efficiencies in this wavelength range of about 10-4 W-1, a laser diode with high optical output power above 1 W is required as pump source. Moreover, it has to exhibit narrowband emission in the range of the acceptance bandwidth of the applied nonlinear BBO crystal. Since GaN-based high-power laser diodes typically show broad emission spectra of ?? = 1…2 nm, stabilizing and narrowing their wavelength by using external wavelength-selective elements is investigated and presented for the first time. With the understanding for the novel concept gained in this work, a compact ultraviolet laser light source was realized. It has a power consumption of less than 10 W and is exceptionally robust due to its immoveable components. The demonstrated output power of 160 ?W enables numerous industrial and everyday applications for which previous laser systems have been too complex and overly cost- and energy-intensive.

Cyber Arms Mar 13 2021 This book will raise awareness on emerging challenges of AIempowered cyber arms used in weapon systems and stockpiled in the global cyber arms race. Based on real life events, it provides a comprehensive analysis of cyber offensive and defensive landscape, analyses the cyber arms evolution from prank malicious codes into lethal weapons of mass destruction, reveals the scale of cyber offensive conflicts, explores cyber warfare mutation, warns about cyber arms race escalation and use of Artificial Intelligence (AI) for military purposes. It provides an expert insight into the current and future malicious and destructive use of the evolved cyber arms, AI and robotics, with emphasis on cyber threats to CBRNe and critical infrastructure. The book highlights international efforts in regulating the cyber environment, reviews the best practices of the leading cyber powers and their controversial approaches, recommends responsible state behaviour. It also proposes information security and cyber defence solutions and provides definitions for selected conflicting cyber terms. The disruptive potential of cyber tools merging with military weapons is examined from the technical point of view, as well as legal, ethical, and political perspectives.

History of Computing: Learning from the Past Jun 27 2022 History of Computing: Learning from the Past Why is the history of computing important? Given that the computer, as we now know it, came into existence less than 70 years ago it might seem a little odd to some people that we are concerned with its history. Isn’t history about ‘old things’? Computing, of course, goes back much further than 70 years with many earlier - vices rightly being known as computers, and their history is, of course, important. It is only the history of electronic digital computers that is relatively recent. History is often justified by use of a quote from George Santayana who famously said that: ‘Those who cannot remember the past are condemned to repeat it’. It is arguable whether there are particular mistakes in the history of computing that we should avoid in the future, but there is some circularity in this question, as the only way we will know the answer to this is to study our history. This book contains papers on a wide range of topics relating to the history of c- puting, written both by historians and also by those who were involved in creating this history.

The papers are the result of an international conference on the History of Computing that was held as a part of the IFIP World Computer Congress in Brisbane in September 2010.
Japanese Journal of Applied Physics Oct 20 2021
Tunable External Cavity Diode Lasers Apr 13 2021 This is the first book on tunable external cavity semiconductor diode lasers, providing an up-to-date survey on the physics, technology, and performance of widely applicable coherent radiation sources of tunable external cavity diode lasers. The purpose is to provide a thorough account of the state-of-the-art of tunable external cavity diode lasers which is achieved by combining this account with basic concepts of semiconductor diode lasers and its tunability with monolithic structures. The practical and accessible information in this volume will enable the reader to study external cavity diode laser, to build up the systems of external cavity diode laser as well as to develop advanced systems for their particular applications. This book will appeal to undergraduate and graduate students, scientists and engineers alike.
Optical Design and Engineering Jan 23 2022
Solid-State Mid-Infrared Laser Sources Aug 30 2022 The book describes the most advanced techniques for generating coherent light in the mid-infrared region of the spectrum. These techniques represent diverse areas of photonics and include heterojunction semiconductor lasers, quantum cascade lasers, tunable crystalline lasers, fiber lasers, Raman lasers, and optical parametric laser sources. Offering authoritative reviews by internationally recognized experts, the book provides a wealth of information on the essential principles and methods of the generation of coherent mid-infrared light and on some of its applications. The instructive nature of the book makes it an excellent text for physicists and practicing engineers who want to use mid-infrared laser sources in spectroscopy, medicine, remote sensing and other fields, and for researchers in various disciplines requiring a broad introduction to the subject.
Delivering Digital Services Feb 21 2022 Lifelong learning is currently a major concern of governments who wish to see their citizens remain employable while the job market changes. Critical to this are digital learning centres where learning is delivered through internet access or via CD-based packages. Access to these turns public libraries and community networks into 'multi media neighbourhood superstores' where print-based learning materials are enhanced by multimedia. The multiplicity of sources of learning materials and experiences reinforces and extends the traditional role of the librarian as mediator between the user and their needs. To support and foster these activities frontline public library and community network staff must be capable of offering user support and advice in a much wider arena. This requires training in new knowledge and skill sets. This timely new book offers practical guidance and expertise for public library and community network staff in setting up, running and developing an effective digital learning centre based within the People's Network or in a related community networking initiative. It has a holistic focus on the use of ICT, taking staff beyond user training applications into areas of network management, e-learning, digitization, web design and XML that staff face on a day-to-day basis. Key areas covered include: PC installation and maintenance managing a network and coping with the security issues of internet connection understanding and supporting lifelong learning digitization of local materials managing websites and intranets: site design, metadata, XML building local community portals implementing e-government social inclusion and service extension: assistive technologies service issues: copyright, access user and staff training. Readership: This book will de-mystify this new area of development for all library and information staff working in, or setting up, a PC-based digital learning centre in information service settings within public libraries, community networking centres, and school and academic libraries.
Teaching Information Technology 14+ Jul 05 2020 The world of information technology is diverse, impacting on, driving and supporting westernised business and industry as well as affecting every individual. Teachers of IT need to ensure that students recognise and understand why information technology is so important to business and society, as well as helping them to develop functional skills. Teaching Information Technology 14+ helps teachers of IT do just that. It explores the nature of Information Technology (IT), describes some of the current issues and debates surrounding IT and suggests appropriate strategies for successful learning and assessment. In addition to providing teachers with support in differentiating between the numerous Information Technology qualifications, it also includes some examples of relevant teaching and learning strategies and includes case studies and quotations from successful IT teachers and industry practitioners, drawn from a range of environments to highlight key concepts. Teaching Information Technology 14+ is not designed simply as another resource book, but as a means to engage students in the wider aspects of IT through the inclusion of reflective questions, encouraging readers to research and debate the place of IT today.
ZnO Nanocrystals and Allied Materials Aug 18 2021 ZnO has been the central theme of research in the past decade due to its various applications in band gap engineering, and textile and biomedical industries. In nanostructured form, it offers ample opportunities to realize tunable optical and optoelectronic properties and it was also termed as a potential material to realize room temperature ferromagnetism. This book presents 17 high-quality contributory chapters on ZnO related systems written by experts in this field. These chapters will help researchers to understand and explore the varied physical properties to envisage device applications of ZnO in thin film, heterostructure and nanostructure forms.
Single Frequency Semiconductor Lasers Jul 25 2019 This book systematically introduces the single frequency semiconductor laser, which is widely used in many vital advanced technologies, such as the laser cooling of atoms and atomic clock, high-precision measurements and spectroscopy, coherent optical communications, and advanced optical sensors. It presents both the fundamentals and characteristics of semiconductor lasers, including basic F-P structure and monolithic integrated structures; interprets laser noises and their measurements; and explains mechanisms and technologies relating to the main aspects of single frequency lasers, including external cavity lasers, frequency stabilization technologies, frequency sweeping, optical phase locked loops, and so on. It paints a clear, physical picture of related technologies and reviews new developments in the field as well. It will be a useful reference to graduate students, researchers, and engineers in the field.
The Greek Element in English Words May 15 2021
Laser Technology and its Applications Mar 25 2022 The laser has become more and more important in scientific research and industrial applications. Now, the laser wavelength can cover the range from ultraviolet to terahertz and output laser performance has significantly progressed in recent years. This book is focused on the advanced diode laser, fiber laser, and their applications in

laser ablation, laser-introduced fluorescence, and laser treatment. The advantages of laser technology are shown comprehensively.

Proceedings of DAE-BRNS National Laser Symposium. Sep 06 2020

The Oxford Handbook of Deaf Studies in Learning and Cognition May 27 2022 In recent years, the intersection of cognitive psychology, developmental psychology, and neuroscience with regard to deaf individuals has received increasing attention from a variety of academic and educational audiences. Both research and pedagogy have addressed questions about whether deaf children learn in the same ways that hearing children learn, how signed languages and spoken languages might affect different aspects of cognition and cognitive development, and the ways in which hearing loss influences how the brain processes and retains information. There are now a number of preliminary answers to these questions, but there has been no single forum in which research into learning and cognition is brought together. The Oxford Handbook of Deaf Studies in Learning and Cognition aims to provide this shared forum, focusing exclusively on learning, cognition, and cognitive development from theoretical, psychological, biological, linguistic, social-emotional, and educational perspectives. Each chapter includes state-of-the-art research conducted and reviewed by international experts in the area. Drawing this research together, this volume allows for a synergy of ideas that possesses the potential to move research, theory, and practice forward.

A compact mode-locked diode laser system for high precision frequency comparison experiments (Band 64) Apr 25 2022 Optical frequency combs (OFC) have revolutionized various applications in applied and fundamental sciences that rely on the determination of absolute optical frequencies and frequency differences. The latter requires only stabilization of the spectral distance between the individual comb lines of the OFC, allowing to tailor and reduce system complexity of the OFC generator (OFCG). One such application is the quantum test of the universality of free fall within the QUANTUS experimental series. Within the test, the rate of free fall of two atomic species, Rb and K, in micro-gravity will be compared. The aim of this thesis was the development of a highly compact, robust, and space-suitable diode laser-based OFCG with a mode-locked optical spectrum in the wavelength range around 780 nm. A diode laser-based OFCG was developed, which exceeds the requirements with a spectral bandwidth > 16 nm at 20 dBc, a comb line optical power > 650 nW (at 20 dBc), a pulse repetition rate of 3.4 GHz, and an RF linewidth of the free-running pulse repetition rate 10 kHz. To realize a proof-of-concept demonstrator module, the diode laser-based OFCG was hybrid-integrated into a space-suitable technology platform that has been developed for future QUANTUS experiments. Proof of sufficient RF stability of the OFCG was provided by stabilizing the pulse repetition rate to an external RF reference. This resulted in a stabilized pulse repetition rate with an RF linewidth smaller than 1.4 Hz (resolution limited), thus exceeding the requirement. The developed diode laser-based OFCG represents an important step towards an improved comparison of the rate of free fall of Rb and K quantum gases within the QUANTUS experiments in micro-gravity.