

Deeper Understanding Faster Calculation Guo Yufeng

Toward Deep Neural Networks: WASD Neuronet Models, Algorithms, and Applications introduces the outlook and extension toward deep neural networks, with a focus on the weights-and-structure determination (WASD) algorithm. Based on the authors' 20 years of research experience on neuronets, the book explores the models, algorithms, and applications of the WASD neuronet, and allows reader to extend the techniques in the book to solve scientific and engineering problems. The book will be of interest to engineers, senior undergraduates, postgraduates, and researchers in the fields of neuronets, computer mathematics, computer science, artificial intelligence, numerical algorithms, optimization, simulation and modeling, deep learning, and data mining. Features Focuses on neuronet models, algorithms, and applications Designs, constructs, develops, analyzes, simulates and compares various WASD neuronet models, such as single-input WASD neuronet models, two-input WASD neuronet models, three-input WASD neuronet models, and general multi-input WASD neuronet models for function data approximations Includes real-world applications, such as Weierstrass approximation, Bernstein polynomial approximation, Taylor polynomial approximation, and multivariate function approximation, exploring the close integration of mathematics (i.e., function approximation theories) and computers (e.g., computer algorithms) Utilizes the authors' 20 years of research on neuronets

Calculations and Simulations of Low-Dimensional Materials A comprehensive guide to methods for calculating and simulating the properties of low-dimensional materials Two-dimensional materials are those, such as graphene and 2D oxides, whose thickness is so small as to approach the atomic scale. Potential applications for these materials exist in an enormous range of scientific and industrial fields. A previous era of low-dimensional materials focused on direct experimentation to demonstrate the properties, reactions, and potential applications of these materials; however, in recent years, calculation and simulation have been shown to have considerable predictive power, reducing the period between design and deployment of these potentially critical materials. Calculations and Simulations of Low-Dimensional Materials offers the first comprehensive survey of this exciting new approach to low-dimensional materials. It guides readers through the foundational physics and through a range of calculation and simulation methods, each with different predictive capacities. Mastery of these methods will enable readers to narrowly tailor the properties of particular materials towards real-world applications, providing confidence in the underlying mechanics and in the range of possible outcomes. Calculations and Simulations of Low-Dimensional Materials readers will also find: Broad coverage of material properties, including electronic, spin, magnetic, photonic, optical, electrochemical and transport properties Discussion of potential applications in areas such as electronics, spintronics, and valleytronics Examination of further potential applications regarding quantum Hall phase, photonics, optoelectronics, multiferroic, and photocatalysis Calculations and Simulations of Low-Dimensional Materials is a useful reference for materials scientists, electrochemists, inorganic chemists, physical chemists, photochemists, and the libraries that support these professions.

Electric power systems are headed for a true changing of the guard, due to the urgent need for achieving sustainable energy delivery. Fortunately, the development of new technologies is driving the transition of power systems toward a carbon-free paradigm while maintaining the current standards of quality, efficiency, and resilience. The introduction of HVDC and FACTS in the 20th century, taking advantage of dramatic improvements in power electronics and control, gave rise to unprecedented levels of flexibility and speed of response in comparison with traditional electromechanical devices. This flexibility is nowadays required more than ever in order to solve a puzzle with pieces that do not always fit perfectly. This Special Issue aims to address the role that FACTS and HVDC systems can play in helping electric power systems face the challenges of the near future.

Concepts and Case Studies

Deep Neural Networks

Analysis, Simulation and Numerical Calculation

Tailoring Properties for Applications

Environmental Science and Information Application Technology

Bioanalytical, Biomolecular and Medical Applications

Renewable Energy Production and Distribution: Recent Developments covers critical research and industry developments on renewable energy, including technological, production, conversion, storage and management. This updated volume provides recent developments in solar energy systems (thermal and photovoltaic), wind energy, hydropower, geothermal energy, bioenergy production and hydrogen production, with the addition of fuel cell technology for this new release. Technology advancements include resources assessment and deployment, materials performance improvement, system optimization and sizing, instrumentation and control, monitoring and simulation, and regulations and policies. Each chapter examines advances in specific renewable energy systems, providing theoretical and applied aspects of system optimization, control and management. Global case studies demonstrate practical applications and economical and environmental aspects through lifecycle analysis. The book will be of interest to engineering graduates, researchers, professors and industry professionals involved in the renewable energy sector and advanced engineering courses dealing with renewable energy, sources, thermal and electrical energy production and sustainability. Addresses the advantages and disadvantages of all renewable technologies Includes global case studies that demonstrate the practical applications of renewable energy production and distribution Features videos and slideshows in the online e-Book for application tutorials

This book presents state-of-the-art computational attention models that have been successfully tested in diverse application areas and can build the foundation for artificial systems to efficiently explore, analyze, and understand natural scenes. It gives a comprehensive overview of the most recent computational attention models for processing visual and acoustic input. It covers the biological background of visual and auditory attention, as well as bottom-up and top-down attentional mechanisms and discusses various applications. In the first part new approaches for bottom-up visual and acoustic saliency models are presented and applied to the task of audio-visual scene exploration of a robot. In the second part the influence of top-down cues for attention modeling is investigated.

This book is devoted to the qualitative study of solutions of superlinear partial differential equations and systems. This class of problems contains, in particular, a number of reaction-diffusion systems which arise in various mathematical models, especially in chemistry, physics and biology. The book is self-contained and up-to-date, taking special care on the didactical preparation of the material. It is devoted to problems that are intensively studied but have not been treated thus far in depth in the book literature.

Integrated Computational Materials Engineering (ICME) for Metals

WASD Neuronet Models, Algorithms, and Applications

Micro and Macro Mixing

Proceedings of the 2014 5th International Conference on Environmental Science and Information Application Technology (ESIAT 2014), Hong Kong, November 7-8, 2014

Proceedings TENCON '93

Multimodal Computational Attention for Scene Understanding and Robotics

This book presents the original articles that have been accepted in the 2019 INNS Big Data and Deep Learning (INNS BDDL) international conference, a major event for researchers in the field of artificial neural networks, big data and related topics, organized by the International Neural Network Society and hosted by the University of Genoa. In 2019 INNS BDDL has been held in Sestri Levante (Italy) from 20 countries participated in the INNS BDDL. In April 2019, in addition to regular sessions, INNS BDDL welcomed around 40 oral communications, 6 tutorials have been presented together with 4 invited plenary speakers. This book covers a broad range of topics in big data and deep learning. From theoretical aspects to state-of-the-art applications. This book is directed to both Ph.D. students

of the state-of-the-art on the topics addressed by the conference.

nonlinear and simulation, and regulations and policies. Each chapter examines advances in specific renewable energy systems, providing theoretical and applied aspects of system optimization, control and management. Global case studies demonstrate practical applications and economical and environmental aspects through lifecycle analysis. The book will be of interest to engineering graduates, researchers, professors and industry professionals involved in the renewable energy sector and advanced engineering courses dealing with renewable energy, sources, thermal and electrical energy production and sustainability. Addresses the advantages and disadvantages of all renewable technologies Includes global case studies that demonstrate the practical applications of renewable energy production and distribution Features videos and slideshows in the online e-Book for application tutorials

This book is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest in their area find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

Large producers have started to use gas injection for their applications and in the future it is predicted that this trend will increase. This book is the most comprehensive and up-to-date coverage of this technique, which is rapidly increasing in importance and usage in the natural gas and petroleum industry. The authors, a group of the most well-known and respected in the field, discuss, in a series of chapters, how this technology can be used to improve production and safety. This book can be used by industry to creating a safer, cleaner environment.

Acid Gas Injection and Related Technologies

Chinese Muslims and the Global Ummah

Computational Approaches for Understanding Dynamical Systems: Protein Folding and Assembly

Computed Tomography & Magnetic Resonance Imaging Of The Whole Body E-Book

Deeper Understanding, Faster Calculation

Renewable Energy Production and Distribution

The multi-volume set LNAI 12975 until 12979 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2021, which was held during September 13-17, 2021. The conference was originally planned to take place in Bilbao, Spain, but changed to an online event due to the COVID-19 pandemic. The 210 full papers presented in these proceedings were carefully reviewed and selected from a total of 869 submissions. The volumes are organized in topical sections as follows: Research Track: Part I: Online learning; reinforcement learning; time series, streams, and sequence models; transfer and multi-task learning; semi-supervised and few-shot learning; learning algorithms and applications. Part II: Generative models; algorithms and learning theory, graphs and networks; interpretation, explainability, transparency, safety. Part III: Generative models; search and optimization; supervised learning; text mining and natural language processing; image processing, computer vision and visual analytics. Applied Data Science Track: Part IV: Anomaly detection and malware; spatio-temporal data; e-commerce and finance; healthcare and medical applications (including Covid); mobility and transportation. Part V: Automating machine learning, optimization, and feature engineering; machine learning based simulations and knowledge discovery; recommender systems and behavior modeling; natural language processing; remote sensing, image and video processing; social media.

Deeper Understanding, Faster CalculationExam FM. Deeper Understanding, Faster CalculationExam FM Insights & Shortcuts. Theories of interestChinese Muslims and the Global UmmahIslamic Revival and Ethnic Identity among the Hui of Qinghai ProvinceRouteledge

This book highlights a comprehensive description of the numerical methods in rarefied gas dynamics, which has strong applications ranging from space vehicle re-entry, micro-electromechanical systems, to shale gas extraction. The book consists of five major parts: The fast spectral method to solve the Boltzmann collision operator for dilute monatomic gas and the Enskog collision operator for dense granular gas; The general synthetic iterative scheme to solve the kinetic equations with the properties of fast convergence and asymptotic preserving; The kinetic modeling of monatomic and molecular gases, and the extraction of critical gas parameters from the experiment of Rayleigh-Brillouin scattering; The assessment of the fluid-dynamics equations derived from the Boltzmann equation and typical kinetic gas-surface boundary conditions; The applications of the fast spectral method and general synthetic iterative scheme to reveal the dynamics in some canonical rarefied gas flows. The book is suitable for postgraduates and researchers interested in rarefied gas dynamics and provides many numerical codes for them to begin with.

Applications of Geotechnical Mechanics in Underground Engineering

Calculations and Simulations of Low-Dimensional Materials

Pattern Recognition and Computer Vision

Superlinear Parabolic Problems

Handbook of Research on E-Assessment in Higher Education

Computer Vision and Machine Learning in Agriculture, Volume 2

E-assessments of students profoundly influence their motivation and play a key role in the educational process. Adapting assessment techniques to current technological advancements allows for effective pedagogical practices, learning processes, and student engagement. The Handbook of Research on E-Assessment in Higher Education provides emerging perspectives on the theoretical and practical aspects of digital assessment techniques and applications within educational settings. Featuring coverage on a broad range of topics such as competency assessment, adaptive courseware, and learning performance, this publication is ideally designed for educational administrators, educational professionals, teachers and professors, researchers, and graduate-level students seeking current research on comparative studies and the pedagogical issues of online assessment in academic institutions.

This book is a compilation of peer-reviewed papers from the 2018 Asia-Pacific International Symposium on Aerospace Technology (APISAT 2018). The symposium is a common endeavor between the four national aerospace societies in China, Australia, Korea and Japan, namely, the Chinese Society of Aeronautics and Astronautics (CSAA), Royal Aeronautical Society Australian Division (RAeS Australian Division), the Korean Society for Aeronautical and Space Sciences (KASAS) and the Japan Society for Aeronautical and Space Sciences (JSASS). APISAT is an annual event initiated in 2009 to provide an opportunity for researchers and engineers from Asia-Pacific countries to discuss current and future advanced topics in aeronautical and space engineering.

The Advances in Protein Chemistry and Structural Biology series is an essential resource for protein chemists. Each volume brings forth new information about protocols and analysis of proteins, with each thematically organized volume guest edited by leading experts in a broad range of protein-related topics. Provides cutting-edge developments in protein chemistry and structural biology Chapters are written by authorities in their field Targeted to a wide audience of researchers, specialists, and students

Islamic Revival and Ethnic Identity Among the Hui of Qinghai Province

Artificial Intelligence and Security

Electronics and Signal Processing

Personalized Medicine

The Proceedings of the 2018 Asia-Pacific International Symposium on Aerospace Technology (APISAT 2018)

New Advances at the Intersection of Brain-Inspired Learning and Deep Learning in Autonomous Vehicles and Robotics

This book gives an overview of recent developments in RS and SERS for sensing and biosensing considering also limitations, possibilities and prospects of this technique. Raman scattering (RS) is a widely used vibrational technique providing highly specific molecular spectral patterns. A severe limitation for the application of this spectroscopic technique lies in the low cross section of RS. Surface-enhanced Raman scattering (SERS) spectroscopy overcomes this problem by 6-11 orders of magnitude enhancement compared with the standard RS for molecules in the close vicinity of certain rough metal surfaces. Thus, SERS combines molecular fingerprint specificity with potential single-molecule sensitivity. Due to the recent development of new SERS-active substrates, labeling and derivatization chemistry as well as new instrumentations, SERS became a very promising tool for many varied applications, including biochemical studies and sensing. Both intrinsic and extrinsic SERS biosensing schemes have been employed to detect and identify small molecules, nucleic acids and proteins, and also for cellular and in vivo sensing.

Computational Approaches for Understanding Dynamical Systems: Protein Folding and Assembly, Volume 170 in the Progress in Molecular Biology and Translational Science series, provides the most topical, informative and exciting monographs available on a wide variety of research topics. The series includes in-depth knowledge on the molecular biological aspects of organisational physiology, with this release including chapters on Pairwise-Additive and Polarizable Acoustic Force Fields for Molecular Dynamics Simulations of Proteins, Scale-consistent approach to the derivation of coarse-grained force fields for simulating structure, dynamics, and thermodynamics of biopolymers, Enhanced sampling and free energy methods, and much more. Includes comprehensive coverage on molecular biology Presents ample use of tables, diagrams, schemata and color figures on chapters to enhance the reader's ability to rapidly grasp the information provided Contains contributions from renowned experts in the field

Advances in Catalysis, Volume 60 fills the gap between journal papers and textbooks across the diverse areas of catalysis research, with this updated volume in the series covering Advances in Photocatalysis, Advances in Catalysis for Biomass Conversion, Advances in Catalysis for Methanol to Olefin Conversion, and Advances in Catalysis for Syngas Conversion to Hydrocarbons. For more than 60 years, this series has dedicated itself to record and present the latest progress in the field of catalysis, providing the scientific community with comprehensive and authoritative reviews. It is an invaluable and comprehensive resource for chemical engineers and chemists working in the field of catalysis in both academia and industry. Contains authoritative reviews written by experts in the field Explores topics that reflect progress in the field, such as catalyst synthesis, catalyst characterization, catalytic chemistry, reaction engineering, computational chemistry, and physics Provides insightful and critical articles that are fully edited to suit various backgrounds

Recent Developments

Chaos Near Resonance

Principles of Reinforced Concrete

International Conference on Electrical, Control and Automation [ICECA 2014]

New Advances in Geology and Engineering Technology of Unconventional Oil and Gas

6th International Conference, ICASIS 2020, Hohhot, China, July 17–20, 2020, Proceedings, Part II

The global spread of Islamic movements and the ascendance of a Chinese state that limits religious freedom have aroused anxieties about integrating Islam and protecting religious freedom around the world. Focusing on violent movements like the so-called Islamic State and Uygur separatists in China's Xinjiang Province threatens to drown out the alternatives presented by apolitical and inwardly focused manifestations of transnational Islamic revival popular among groups like the Hui, China's largest Muslim minority. This book explores how Muslim revivalists in China's Qinghai Province employ individual agency to reconcile transnational notions of religious orthodoxy with the materialist rationalism of atheist China. Based on a year immersed in one of China's most concentrated and conservative urban Muslim communities in Xining, the book puts individuals' struggles to navigate theological controversies in the contexts of global Islamic revival and Chinese modernization. By doing so, it reveals how attempts to revive the original essence of Islam can empower individuals to form peaceful and productive articulations with secular societies, and further suggests means of combatting radicalization and encouraging interfaith dialogue. As the first major research monograph on Islamic revival in modern China, this book will be of interest to students and scholars of Anthropology, Islamic Studies, and Chinese Studies.

This two-volume set LNCS 12239-12240 constitutes the refereed proceedings of the 6th International Conference on Artificial Intelligence and Security, ICASIS 2020, which was held in Hohhot, China, in July 2020. The conference was formerly called "International Conference on Cloud Computing and Security" with the acronym ICCCS. The total of 142 full papers presented in this two-volume proceedings was carefully reviewed and selected from 1064 submissions. The papers were organized in topical sections as follows: Part I: Artificial intelligence and internet of things. Part II: Internet of things, information security, big data and cloud computing, and information processing.

A unified treatment of resonant problems with special emphasis on the recently discovered phenomenon of homoclinic jumping. After a survey of the necessary background, the book develops a general finite dimensional theory of homoclinic jumping, illustrating it with examples. The main mechanism of chaos near resonances is discussed in both the dissipative and the Hamiltonian context, incorporating previously unpublished new results on universal homoclinic bifurcations near resonances, as well as on multi-pulse Silnikov manifolds. The results are applied to a variety of different problems, which include applications from beam oscillations, surface wave dynamics, nonlinear optics, atmospheric science and fluid mechanics.

Surface-Enhanced Raman Spectroscopy

European Conference, ECML PKDD 2021, Bilbao, Spain, September 13-17, 2021, Proceedings, Part V. Lecture Notes in Artificial Intelligence

Discussion of Cold Damage (Shang Han Lun)

Computer Engineering & Apps

HVDC/FACTS for Grid Services in Electric Power Systems

A major new translation of the Chinese classic Shang Han Lun by scholar and medical doctor Guohui Liu makes this foundational text fully accessible to English speaking clinicians for the first time. Extensive study and research underpins the translation; the author's understanding of both classical and modern Chinese enables him to interpret fully the ancient work within the theory of Chinese medicine. An extensive commentary explains the translation, the difficulties with the text, how it has been subsequently translated or expanded on the theory laid out in the original text to reach an understanding that can be applied in the clinic for diagnosis and treatment. The value of this classic text lies primarily in its establishment of a basic framework for differentiation and treatment, but it also presents 112 formulas and 88 medicinal substances, which are commonly applied in clinical work for various conditions. In this edition, the 112 formulas are fully explained in the context of the clinical experiences of well-known ancient and modern doctors, and they are also laid out in two appendices, cross referenced to the text.

Principle of Reinforced Concrete introduces the main properties of structural concrete and its mechanical behavior under various conditions as well as all aspects of the combined function of reinforcement and concrete. Based on the experimental investigation, the variation regularity of mechanical behavior, working mechanism, and calculation method are presented for the structural member under various internal forces. After examining the basic principle and analysis method of reinforced concrete, the book covers some extreme circumstances, including fatigue load, earthquake, explosion, high temperature (fire accident), and durability damage, and the special responses and analysis methods of its member under these conditions. This work is valuable as a textbook for post-graduates, and can be used as a reference for university teachers and under-graduates in the structural engineering field. It is also useful for structural engineers engaged in scientific research, design, or construction. Focuses on the principles of reinforced concrete, providing professional and academic readers with a single volume reference Experimental data enables readers to make full use of the theory presented The mechanical behavior of both concrete and reinforcement materials, plus the combined function of both are covered, enabling readers to understand the behaviors of reinforced concrete structures and their members

Covers behavior of the materials and members under normal and extreme conditions

Over 5200 high quality CT, MR, and hybrid technology images in one definitive reference. For the radiologist who needs information on the latest cutting-edge techniques in rapidly changing imaging technologies, such as CT, MRI, and PET /CT, and for the resident who needs a comprehensive resource that gives a broad overview of CT and MRI capabilities. Brand-new team of new international associate editors provides a unique global perspective on the use of CT and MRI across the world. Completely revised in a new, more succinct presentation without redundancies for faster access to critical content. Vastly expanded section on new MRI and CT technology keeps you current with continuously evolving innovations.

Exam FM Insights & Shortcuts. Theories of interest

Machine Learning and Knowledge Discovery in Databases. Applied Data Science Track

Kinetic Modeling and Multi-Scale Simulation

Proceedings of the INNS Big Data and Deep Learning Conference INNSBDDL2019, held at Sestri Levante, Genova, Italy 16-18 April 2019

1993 IEEE Region 10 Conference on "Computer, Communication, Control and Power Engineering" , October 19-21, 1993, Beijing, Beijing International Convention Center, Beijing Continental Grand Hotel

5th Chinese Conference, PRCV 2022, Shenzhen, China, November 4–7, 2022, Proceedings, Part I

This book is as an extension of previous book "Computer Vision and Machine Learning in Agriculture" for academicians, researchers, and professionals interested in solving the problems of agricultural plants and products for boosting production by rendering the advanced machine learning including deep learning tools and techniques to computer vision algorithms. The book contains 15 chapters. The first three chapters are devoted to crops harvesting, weed, and multi-class crops detection with the help of robots and UAVs through machine learning and deep learning algorithms for smart agriculture. Next, two chapters describe agricultural data retrievals and data collections. Chapters 6, 7, 8 and 9 focuses on yield estimation, crop maturity detection, agri-food product quality assessment, and medicinal plant recognition, respectively. The remaining six chapters concentrates on optimized disease recognition through computer vision-based machine and deep learning strategies.

The 4-volume set LNCS 13534, 13535, 13536 and 13537 constitutes the refereed proceedings of the 5th Chinese Conference on Pattern Recognition and Computer Vision, PRCV 2022, held in Shenzhen, China, in November 2022. The 233 full papers presented were carefully reviewed and selected from 564 submissions. The papers have been organized in the following topical sections: Theories and Feature Extraction; Machine Learning, Multimedia and Multimodal; Optimization and Neural Network and Deep Learning; Biomedical Image Processing and Analysis; Pattern Classification and Clustering; 3D Computer Vision and Reconstruction, Robots and Autonomous Driving; Recognition, Remote Sensing; Vision Analysis and Understanding; Image Processing and Low-level Vision; Object Detection, Segmentation and Tracking.

Environmental Science and Information Application Technology contains selected papers from the 2014 5th International Conference on Environmental Science and Information Application Technology (ESIAT 2014, Hong Kong, 7-8 November 2014). The book covers a wide variety of topics: - Global Environmental Change and Ecosystems Management - Graphic and Image Processing - Spatial Information Systems - Application of Remote Sensing and Application of Spatial Information Systems Environmental Science and Information Application Technology will be invaluable to academics and professionals interested and/or involved in these fields.

Calculations of Flow and Heat Transfer for an Obstruction Between Two Sliding Walls in Body-fitted Coordinates

Recent Advances in Big Data and Deep Learning

Advances in Catalysis

Blow-up, Global Existence and Steady States

Advances in Robots Trajectories Learning via Fast Neural Networks

Exam FM.

Focuses entirely on demystifying the field and subject of ICME and provides step-by-step guidance on its industrial application via case studies This highly-anticipated follow-up to Mark F. Horstemeyer's pedagogical book on Integrated Computational Materials Engineering (ICME) concepts includes engineering practice case studies related to the analysis, design, and use of structural metal alloys. A welcome supplement to the first book—which includes the theory and methods required for teaching the subject in the classroom—Integrated Computational Materials Engineering (ICME) For Metals: Concepts and Case Studies focuses on engineering applications that have occurred in industries demonstrating the ICME technologies throughout the world.

The recent confluence of smaller desktop computers with enhanced computing power coupled with the emergence of physically-based material models has created the clear trend for modeling and simulation in product design, which helped create a need to integrate more knowledge into materials processing and product performance. Integrated Computational Materials Engineering (ICME) For Metals: Case Studies educates those seeking that knowledge with chapters covering: Body Centered Cubic Materials; Designing An Interatomic Potential For Fe-C Alloys; Phase-Field Crystal Modeling; Simulating Dislocation Plasticity in BCC Metals by Integrating Fundamental Concepts with Macroscale Models; Steel Powder Metal Modeling; Hexagonal Close Packed Materials; Multiscale Modeling of Pure Nickel; Predicting Constitutive Equations for Materials Design; and more. Presents case studies that connect modeling and simulation for different materials' processing methods for metal alloys Demonstrates several practical engineering problems to encourage industry to employ ICME ideas Introduces a new simulation-based design paradigm Provides web access to microstructure-sensitive models and experimental database

Integrated Computational Materials Engineering (ICME) For Metals: Case Studies is a must-have book for researchers and industry professionals aiming to comprehend and employ ICME in the design and development of new materials.

The homogenization of single phase gases or liquids with other reactive components by mixing begins with the oldest basic operations applied in chemical engineering. The mixing process is used as an essential step in nearly all processes of the chemical industry as well as the pharmaceutical and food industries. Recent experimentally and theoretically based results from research work lead to a fairly good prediction of the velocity fields in different kinds of mixers, where as predictions of simultaneous preceding homogeneous chemical re- tions, are still not reliable in a similar way. Therefore the design of equipment for mixing processes is still derived from measurements of the so called "mixing time" which is related to the applied methods of measurement and the special, sign of the test equipment itself.

The cooperation of 17 research groups was stimulated by improved modern methods for experimental research and visualization, for simulations and numer- cal calculations of mixing and chemical reactions in micro and macro scale of time and local coordinates. The research work was financed for a six years period within the recently finished Priority Program of the German Research Foundation (DFG) named "Analysis, modeling and numerical prediction of flow-mixing with and without chemical reactions (SPP 1141)". The objective of the investigations was to improve the prediction of efficiencies and selectivities of chemical re- tions on macroscopic scale.

International Conference on Electrical, Control and Automation [ICECA 2014] will be held from February 22nd to 23rd, 2014 in Shanghai, China. CECA 2014 will bring together top researchers from Asian Pacific areas, North America, Europe and around the world to exchange research results and address open issues in all aspects of Electrical, Control and Automation. The ICECA 2014 welcomes the submission of original full research papers, short papers, posters, workshop proposals, tutorials, and industrial professional reports.

Commentaries and Clinical Applications

Rarefied Gas Dynamics

Earth Deep Interior: High-pressure Experiments and Theoretical Calculations From the Atomic to the Global Scale

Proceedings of the Trends in Electronics Conference