

# Engineering Physics G Senthil Kumar

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## **NORMAN BEST**

*Handbook of Research on Advancements in the Processing, Characterization, and Application of Lightweight Materials* IGI Global

This book presents recent developments in the coating processes, sub processes and emphasizes on processes with the potential to improve performance quality and reproducibility. The book demonstrates how application methods, environmental factors, and chemical interactions affect each surface coating's performance. In addition, it provides analysis of latest polymers, carbon resins, high-temperature materials used for coatings and describes the development, chemical and physical properties, synthesis, polymerization, commercial uses and characteristics for each raw material and coating. Characterization techniques to solve the coating problems are also presented, as well as optimization studies to identify the critical coating parameters to ensure a robust process.

*Machinability of Advanced Materials* Academic Press

This book covers synthesis, characterization, stability, heat transfer and applications of nanofluids. It includes different types of nanofluids, their preparation methods as well as its effects on the stability and thermophysical properties of nanofluids. It provides a discussion on the mechanism behind the change in the thermal properties of nanofluids and heat transfer behaviour. It presents the latest information and discussion on the preparation and advanced characterization of nanofluids. It also consists of stability analysis of nanofluids and discussion on why it is essential for the industrial application. The book provides a discussion on thermal boundary layer properties in convection. Future directions for heat transfer applications to make the

production and application of nanofluids at industrial level are also discussed.

*Nanostructured Materials* IGI Global

Machinability of Advanced Materials addresses the level of difficulty involved in machining a material, or multiple materials, with the appropriate tooling and cutting parameters. A variety of factors determine a material's machinability, including tool life rate, cutting forces and power consumption, surface integrity, limiting rate of metal removal, and chip shape. These topics, among others, and multiple examples comprise this research resource for engineering students, academics, and practitioners.

*Emerging Trends and Insights on Economic Inequality in the Wake of Global Crises* Walter de Gruyter GmbH & Co KG

This book covers the state-of-art image classification methods for discrimination of earth objects from remote sensing satellite data with an emphasis on fuzzy machine learning and deep learning algorithms. Both types of algorithms are described in such details that these can be implemented directly for thematic mapping of multiple-class or specific-class landcover from multispectral optical remote sensing data. These algorithms along with multi-date, multi-sensor remote sensing are capable to monitor specific stage (for e.g., phenology of growing crop) of a particular class also included. With these capabilities fuzzy machine learning algorithms have strong applications in areas like crop insurance, forest fire mapping, stubble burning, post disaster damage mapping etc. It also provides details about the temporal indices database using proposed Class Based Sensor Independent (CBSI) approach supported by practical examples. As well, this book addresses other related algorithms based on distance, kernel based as well as spatial information through Markov Random Field (MRF)/Local convolution methods to handle mixed pixels, non-

linearity and noisy pixels. Further, this book covers about techniques for quantitative assessment of soft classified fraction outputs from soft classification and supported by in-house developed tool called sub-pixel multi-spectral image classifier (SMIC). It is aimed at graduate, postgraduate, research scholars and working professionals of different branches such as Geoinformation sciences, Geography, Electrical, Electronics and Computer Sciences etc., working in the fields of earth observation and satellite image processing. Learning algorithms discussed in this book may also be useful in other related fields, for example, in medical imaging. Overall, this book aims to: exclusive focus on using large range of fuzzy classification algorithms for remote sensing images; discuss ANN, CNN, RNN, and hybrid learning classifiers application on remote sensing images; describe sub-pixel multi-spectral image classifier tool (SMIC) to support discussed fuzzy and learning algorithms; explain how to assess soft classified outputs as fraction images using fuzzy error matrix (FERM) and its advance versions with FERM tool, Entropy, Correlation Coefficient, Root Mean Square Error and Receiver Operating Characteristic (ROC) methods and; combines explanation of the algorithms with case studies and practical applications.

*Engineering Principles* IGI Global

Brydson's Plastics Materials, Eighth Edition, provides a comprehensive overview of the commercially available plastics materials that bridge the gap between theory and practice. The book enables scientists to understand the commercial implications of their work and provides engineers with essential theory. Since the previous edition, many developments have taken place in plastics materials, such as the growth in the commercial use of sustainable bioplastics, so this book brings the user fully up-to-date with the latest materials, references, units,

and figures that have all been thoroughly updated. The book remains the authoritative resource for engineers, suppliers, researchers, materials scientists, and academics in the field of polymers, including current best practice, processing, and material selection information and health and safety guidance, along with discussions of sustainability and the commercial importance of various plastics and additives, including nanofillers and graphene as property modifiers. With a 50 year history as the principal reference in the field of plastics material, and fully updated by an expert team of polymer scientists and engineers, this book is essential reading for researchers and practitioners in this field. Presents a one-stop-shop for easily accessible information on plastics materials, now updated to include the latest biopolymers, high temperature engineering plastics, thermoplastic elastomers, and more Includes thoroughly revised and reorganised material as contributed by an expert team who make the book relevant to all plastics engineers, materials scientists, and students of polymers Includes the latest guidance on health, safety, and sustainability, including materials safety data sheets, local regulations, and a discussion of recycling issues

*Pervasive Computing and Social Networking* Taylor & Francis  
This book introduces readers to gas flows and heat transfer in pebble bed reactor cores. It addresses fundamental issues regarding experimental and modeling methods for complex multiphase systems, as well as relevant applications and recent research advances. The numerical methods and experimental measurements/techniques used to solve pebble flows, as well as the content on radiation modeling for high-temperature pebble beds, will be of particular interest. This book is intended for a broad readership, including researchers and practitioners, and is sure to become a key reference resource for students and professionals alike.

*Physics for Engineers* CRC Press

The use of synthetic chemical dyes in various industrial processes, including paper and pulp manufacturing, plastics, dyeing of cloth, leather treatment and printing, has increased considerably over the last few years, resulting in the release of dye-containing industrial effluents into the soil and aquatic ecosystems. The textile industry generates high-polluting wastewaters and their treatment is a very serious problem due to high total dissolved solids (TDS), presence of toxic heavy metals, and the non-

biodegradable nature of the dyestuffs in the effluent. The chapters in this book provide an overview of the problem and its solution from different angles. These problems and solutions are presented in a genuinely holistic way by world-renowned researchers.

Discussed are various promising techniques to remove dyes, including the use of nanotechnology, ultrasound, microwave, catalysts, biosorption, enzymatic treatments, advanced oxidation processes, etc., all of which are "green."

*Green Chemistry for Dyes Removal from*

*Wastewater* comprehensively discusses: Different types of dyes, their working and methodologies and various physical, chemical and biological treatment methods employed Application of advanced oxidation processes (AOPs) in dye removal whereby highly reactive hydroxyl radicals are generated chemically, photochemically and/or by radiolytic/sonolytic means. The potential of ultrasound as an AOP is discussed as well.

Nanotechnology in the treatment of dye removal types

of adsorbents for removal of toxic pollutants from aquatic systems Photocatalytic oxidation process for dye degradation under both UV and visible light, application of solar light and solar photoreactor in dye degradation

*Caste Discrimination and Exclusion in Indian Universities* IGI Global

Hybrid composites have exceptional features that are used to meet materials design needs that non-hybrid composites cannot achieve. These materials have superior stiffness, strength, bending and mechanical properties, fatigue/impact resistance, and balanced thermal distortion stability. This book covers the latest developments in the hybrid composite materials, processing, characterization, and modeling of materials behavior. Springer Nature

The disciplines of science and engineering rely heavily on the forecasting of prospective constraints for concepts that have not yet been proven to exist, especially in areas such as artificial intelligence. Obtaining quality solutions to the problems presented becomes increasingly difficult due to the number of steps required to sift through the possible solutions, and the ability to solve such problems relies on the recognition of patterns and the categorization of data into specific sets. Predictive modeling and optimization methods allow unknown events to be categorized based on statistics and classifiers input by

researchers. The Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering is a critical reference source that provides comprehensive information on the use of optimization techniques and predictive models to solve real-life engineering and science problems. Through discussions on techniques such as robust design optimization, water level prediction, and the prediction of human actions, this publication identifies solutions to developing problems and new solutions for existing problems, making this publication a valuable resource for engineers, researchers, graduate students, and other professionals.

**Handbook of Research on Advances and Applications of Fuzzy Sets and Logic** Springer Nature

Oxynitride thin film technology is rapidly impacting a broad spectrum of applications, ranging from decorative functions (through optoelectronics) to corrosion resistance. Developing a better understanding of the relationships between deposition processes, structure and composition of the deposited films is critical to the continued evolution of these applications. This e-book provides valuable information about the process modeling, fabrication and characterization of metallic oxynitride-based thin films produced by reactive sputtering and some related deposition processes. Its contents are spread in twelve main and concise chapters through which the book thoroughly reviews the bases of oxynitride thin film technology and deposition processes, sputtering processes and the resulting behaviors of these oxynitride thin films. More importantly, the solutions for the growth of oxynitride technology are given in detail with an emphasis on some particular compounds. This is a valuable resource for academic learners studying materials science and industrial coaters, who are concerned not only about fundamental aspects of oxynitride synthesis, but also by their innate material characteristics.

*Who's Who in Science and Engineering 2008-2009* Springer Science & Business Media

"This book examines the use of fuzzy expert systems in the agricultural field"--Provided by publisher.

**Handbook of Universities** CRC Press

This book introduces readers to numerous multiplicative inverse functional equations and their stability results in various spaces. This type of functional equation can be of use in solving many

physical problems and also has significant relevance in various scientific fields of research and study. In particular, multiplicative inverse functional equations have applications in electric circuit theory, physics, and relations connecting the harmonic mean and arithmetic mean of several values. Providing a wealth of essential insights and new concepts in the field of functional equations, the book is chiefly intended for researchers, graduate schools, graduate students, and educators, and can also be used for seminars in analysis covering topics of functional equations.

**Polymer-Based Composites** Engineering Science Reference  
The Most Authentic Source Of Information On Higher Education In India The Handbook Of Universities, Deemed Universities, Colleges, Private Universities And Prominent Educational & Research Institutions Provides Much Needed Information On Degree And Diploma Awarding Universities And Institutions Of National Importance That Impart General, Technical And Professional Education In India. Although Another Directory Of Similar Nature Is Available In The Market, The Distinct Feature Of The Present Handbook, That Makes It One Of Its Kind, Is That It Also Includes Entries And Details Of The Private Universities Functioning Across The Country. In This Handbook, The Universities Have Been Listed In An Alphabetical Order. This Facilitates Easy Location Of Their Names. In Addition To The Brief History Of These Universities, The Present Handbook Provides The Names Of Their Vice-Chancellor, Professors And Readers As Well As Their Faculties And Departments. It Also Acquaints The Readers With The Various Courses Of Studies Offered By Each University. It Is Hoped That The Handbook In Its Present Form, Will Prove Immensely Helpful To The Aspiring Students In Choosing The Best Educational Institution For Their Career Enhancement. In Addition, It Will Also Prove Very Useful For The Publishers In Mailing Their Publicity Materials. Even The Suppliers Of Equipment And Services Required By These Educational Institutions Will Find It Highly Valuable.

Real-Time Data Analytics for Large Scale Sensor Data BoD - Books on Demand

**Biological Synthesis of Nanoparticles and Their Applications** gives insight into the synthesis of nanoparticles utilizing the natural routes. It demonstrates various strategies for the synthesis of nanoparticles utilizing plants, microscopic organisms like bacteria, fungi, algae and so forth. It orchestrates interdisciplinary

hypothesis, ideas, definitions, models and discoveries associated with complex cell of the prokaryotes and eukaryotes. Highlights: Discusses biological approach towards the nanoparticle synthesis Describes the role of nanotechnology in the field of medicine and its medical devices Covers application and usage of the chemicals at the molecular level to act as catalysts and binding products for both organic and inorganic Chemical Reactions Reviews application in physics such as solar cells, photovoltaics and other usage Microorganisms can aggregate and detoxify substantial metals because of different reductase enzymes, which can diminish metal salts to metal nanoparticles. The readers after going through this book will have detailed account of mechanism of bio-synthesis of nanoparticles.

World Congress on Medical Physics and Biomedical Engineering May 26-31, 2012, Beijing, China CRC Press

Handbook of Research on Advancements in the Processing, Characterization, and Application of Lightweight Materials IGI Global

Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering Bentham Science Publishers

**Electrochemical Impedance Spectroscopy** is a compendium of contributions from experts in the field of electrochemical impedance spectroscopy (EIS). This compilation of investigations and reviews addresses the groundbreaking applications of EIS in different fields. An array of exploitations are revealed throughout this book such as the use of EIS in monitoring and controlling of corrosion, in medicine where accurate information on fluid distribution is needed as well as environmental applications in food, water, and drug analyses. Competency of EIS as an approach compared to the traditional electrochemical techniques is assessed in almost every application. This book, therefore, is a valuable reference for students, researchers, and anyone interested in electrochemical impedance spectroscopy.

Incremental Sheet Forming Technologies Springer Nature

Student assessment in online learning is submitted remotely without any face-to-face interaction, and therefore, student authentication is widely seen as one of the major challenges in online examination. Authentication is the process of determining whether someone or something is, in fact, who or what it is declared to be. As the dependence upon computers and computer networks grows, especially within education, the need for

authentication has increased. **Biometric Authentication in Online Learning Environments** provides innovative insights into biometrics as a strategy to mitigate risk and provide authentication, while introducing a framework that provides security to improve e-learning and on-line examination by utilizing biometric-based authentication techniques. This book examines e-learning, security, threats in online exams, security considerations, and biometric technologies, and is designed for IT professionals, higher education administrators, professors, researchers, business professionals, academicians, and libraries seeking topics centered on biometrics as an authentication strategy within educational environments.

Fuzzy Machine Learning Algorithms for Remote Sensing Image Classification Jaypee Brothers Medical Publishers

**Sodium Alginate-based Nanomaterials for Wastewater Treatment** offers detailed coverage of fundamentals and recent advances in sodium alginate-based nanomaterials for wastewater treatment. The book provides a detailed overview of the development and application of nanomaterials-based sodium alginate so that new methods can be put in place for efficient wastewater treatment. This includes illustrating how nanomaterials have enabled the formation of nanocomposites or blends of sodium alginate with other compounds like chitosan for the effective removal of heavy metals from wastewater. This important reference source for materials scientists and environmental engineers comprehensively covers nanotechnology applications in efficient wastewater treatment solutions. Shows how sodium alginate is being used for the removal of organic and inorganic pollutants from wastewater Explains the formation and application of sodium alginate-based beads, electro-spun fibers, nanofibers, blends and zerovalent sodium alginate Discusses the future potential of nanomaterial-based sodium alginate and its blends

**Biological Synthesis of Nanoparticles and Their Applications** Engineering Science Reference

**Fundamentals of Environmental and Toxicological Chemistry: Sustainable Science, Fourth Edition** covers university-level environmental chemistry, with toxicological chemistry integrated throughout the book. This new edition of a bestseller provides an updated text with an increased emphasis on sustainability and green chemistry. It is organized based on the five spheres of Earth's environment: (1) the hydrosphere (water), (2) the

atmosphere (air), (3) the geosphere (solid Earth), (4) the biosphere (life), and (5) the anthrosphere (the part of the environment made and used by humans). The first chapter defines environmental chemistry and each of the five environmental spheres. The second chapter presents the basics of toxicological chemistry and its relationship to environmental chemistry. Subsequent chapters are grouped by sphere, beginning with the hydrosphere and its environmental chemistry, water pollution, sustainability, and water as nature's most renewable resource. Chapters then describe the atmosphere, its structure and importance for protecting life on Earth, air pollutants, and the sustainability of atmospheric quality. The author explains the nature of the geosphere and discusses soil for growing food as well as geosphere sustainability. He also describes the biosphere and its sustainability. The final sphere

described is the anthrosphere. The text explains human influence on the environment, including climate, pollution in and by the anthrosphere, and means of sustaining this sphere. It also discusses renewable, nonpolluting energy and introduces workplace monitoring. For readers needing additional basic chemistry background, the book includes two chapters on general chemistry and organic chemistry. This updated edition includes three new chapters, new examples and figures, and many new homework problems.

Knowledge Discovery Practices and Emerging Applications of Data Mining: Trends and New Domains CRC Press

Machine learning allows for non-conventional and productive answers for issues within various fields, including problems related to visually perceptive computers. Applying these strategies and algorithms to the area of computer vision allows

for higher achievement in tasks such as spatial recognition, big data collection, and image processing. There is a need for research that seeks to understand the development and efficiency of current methods that enable machines to see. Challenges and Applications for Implementing Machine Learning in Computer Vision is a collection of innovative research that combines theory and practice on adopting the latest deep learning advancements for machines capable of visual processing. Highlighting a wide range of topics such as video segmentation, object recognition, and 3D modelling, this publication is ideally designed for computer scientists, medical professionals, computer engineers, information technology practitioners, industry experts, scholars, researchers, and students seeking current research on the utilization of evolving computer vision techniques.