Amol Kumar Chakroborty Phsics Book

The book titled Advanced Computational and Communication Paradigms: Proceedings of International Conference on ICACCP 2017, Volume 2 presents refereed high-quality papers of the First International Conference on Advanced Computational and Communication Paradigms (ICACCP 2017) organized by the Department of Computer Science and Engineering, Sikkim Manipal Institute of Technology, held from 8– 10 September 2017. ICACCP 2017 covers an advanced computational paradigms and communications technique which provides failsafe and robust solutions to the emerging problems faced by mankind. Technologists, scientists, industry professionals and research scholars from regional, national and international levels are invited to present their original unpublished work in this conference. There were about 550 technical paper submitted. Finally after peer review, 142 high-quality papers have been accepted and registered for oral presentation which held across 09 general sessions and 05 special sessions along with 04 keynote address and 06 invited talks. This volume comprises 77 accepted papers of ICACCP 2017.

This book examines the topics of magnetohydrodynamics and plasma oscillations, in addition to the standard topics discussed to cover courses in electromagnestism, electrodynamics, and fundamentals of physics, to name a few. This textbook on electricity and magnetism is primarily targeted at graduate students of physics. The undergraduate students of physics also find the treatment of the subject useful. The treatment of the special theory of relativity clearly emphasises the Lorentz covariance of Maxwell's equations. The rather abstruse topic of radiation reaction is covered at an elementary level, and the Wheeler–Feynman absorber theory has been dwelt upon briefly in the book.

This book presents the selected peer-reviewed papers from the International Conference on Communication Systems and Networks (ComNet) 2019. Highlighting the latest findings, ideas, developments and applications in all areas of advanced communication systems and networking, it covers a variety of topics, including next-generation wireless technologies such as 5G, new hardware platforms, antenna design, applications of artificial intelligence (AI), signal processing and optimization techniques. Given its scope, this book can be useful for beginners, researchers and professionals working in wireless communication and networks, and other allied fields.

Covers the basic principles and theories of engineering physics and offers a balance between theoretical concepts and their applications. It is designed as a textbook for an introductory course in engineering physics. Beginning with a comprehensive discussion on oscillations and waves with applications in the field of mechanical and electrical engineering, it goes on to explain the basic concepts such as Huygen's principle, Fresnel's biprism, Fraunhofer diffraction and polarization. Emphasis has been given to an understanding of the basic concepts and their applications to a number of engineering problems. Each topic has been discussed in detail, both conceptually and mathematically. Pedagogical features including solved problems, unsolved exercised and multiple choice questions are interspersed throughout the book. This will help undergraduate students of engineering acquire skills for solving difficult problems in quantum mechanics, electromagnetism, nanoscience, energy systems and other engineering disciplines.

This book constitutes the refereed proceedings of the International Conference on Advances in Information Technology and Mobile Communication, AIM 2011, held at Nagpur, India, in April 2011. The 31 revised full papers presented together with 27 short papers and 34 poster papers were carefully reviewed and selected from 313 submissions. The papers cover all current issues in theory, practices, and applications of Information Technology, Computer and Mobile Communication Technology and related topics.

From Plato to post-Second World War British and American political thinkers, this textbook covers the entire range of Western political thoughts. This book thoroughly discusses the historical background of the ideas of political thinkers. For each political philosopher, the author has described the philosophy in detail, followed by an unbiased evaluation at the end of the chapter.Western Political Thought will meet the needs of the students of political science, history, philosophy and sociology. It will appeal to the students who have no previous exposure to the subject as the chapters require no previous understanding of the thinkers and their works. It will also serve as a useful and steady companion for UGC NET and UPSC aspirants.Key Features: * Critical analysis of the philosophy of each of the thinkers in light of its applicability and effect on modern political tradition * Elaborate discussion of the history of the period that served as a background of the political ideas * Comprehensive study, based mostly on original texts rather than second references * Each chapter aided by self-test review questions to assess critical understanding of the topics

Filling the gap for an up-to-date textbook in this relatively new interdisciplinary research field, this volume provides readers with a thorough and comprehensive introduction. Based on extensive teaching experience, it includes numerous worked examples and highlights in special biographical boxes some of the most outstanding personalities and their contributions to both physics and economics. The whole is rounded off by several appendices containing important background material.

Ion beams have been used for decades for characterizing and analyzing materials. Now energetic ion beams are providing ways to modify the materials in unprecedented ways. This book highlights the emergence of high-energy swift heavy ions as a tool for tailoring the properties of materials with nanoscale structures. Swift heavy ions interact with materials by exciting/ionizing electrons without directly moving the atoms. This opens a new horizon towards the 'so-called' soft engineering. The book discusses the ion beam technology emerging from the non-equilibrium conditions and emphasizes the power of controlled irradiation to tailor the properties of various types of materials for specific needs.

This book summarizes the current status of theoretical and experimental progress in 2 dimensional graphene-like monolayers and few-layers of transition metal dichalcogenides (TMDCs). Semiconducting monolayer TMDCs, due to the presence of a direct gap, significantly extend the potential of low-dimensional nanomaterials for applications in nanoelectronics and nano-optoelectronics as well as flexible nano-electronics with unprecedented possibilities to control the gap by external stimuli. Strong quantum confinement results in extremely high exciton binding energies which forms an interesting platform for both fundamental studies and device applications. Breaking of spatial inversion symmetry in monolayers results in strong spin-valley coupling potentially leading to their use in valleytronics. Starting with the basic

chemistry of transition metals, the reader is introduced to the rich field of transition metal dichalcogenides. After a chapter on three dimensional crystals and a description of top-down and bottom-up fabrication methods of few-layer and single layer structures, the fascinating world of two-dimensional TMDCs structures is presented with their unique atomic, electronic, and magnetic properties. The book covers in detail particular features associated with decreased dimensionality such as stability and phase-transitions in monolayers, the appearance of a direct gap, large binding energy of 2D excitons and trions and their dynamics, Raman scattering associated with decreased dimensionality, extraordinarily strong light-matter interaction, layer-dependent photoluminescence properties, new physics associated with the destruction of the spatial inversion symmetry of the bulk phase, spin-orbit and spin-valley couplings. The book concludes with chapters on engineered heterostructures and device applications such as a monolayer MoS2 transistor. Considering the explosive interest in physics and applications of two-dimensional materials, this book is a valuable source of information for material scientists and engineers working in the field as well as for the graduate students majoring in materials science.

The universe is much simpler that we have been led to believe. Because of a fundamental cosmological error dating back to 1912, currently accepted astrophysics has built an elaborate structure of theories that are without foundation. The mythical "big bang" could not possibly have happened, galaxies are not retreating from us, we are not on a collision course with Andromeda, and both dark matter and dark energy are fictions. Inside this book you will find documented proof that these fanciful theories are invalid.Because of two mathematical oversights dating back to 1915, general relativity has become the currently accepted explanation for gravity. Unfortunately, this geometric theory of gravity is fatally flawed. Spacetime does not exist, gravity does not bend light, and gravitational waves do not exist. Inside this book you will discover significant facts about gravity that Einstein failed to consider.Scientific truth is never a matter of consensus. The currently prevailing view about the cosmos is just as much in error as it was during the era in which it was believed that the Sun revolved around the Earth.

This book features selected papers presented at the Fourth International Conference on Nanoelectronics, Circuits and Communication Systems (NCCS 2018). Covering topics such as MEMS and nanoelectronics, wireless communications, optical communications, instrumentation, signal processing, the Internet of Things, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications in mines, it offers a valuable resource for young scholars, researchers, and academics alike.

Thoroughly revised to cater the needs of Graduate and Post Graduate students spanning various colleges and Universities nationwide. This fourth revised edition has the following latest features. > The textbook is written in a clear lucid manner to cover the theortical, practical and applied aspect of biostatistics. > Well-labelled illustrations, diagrams, tables and adequate examples complement the text so that student may practice on their own. > Numerous examination oriented solved problems as well as number of topics viz set theory, Bionomial Expansion, Permutation, Combination and Non-Parametric Statistics have been incorporated. > Theortical Discussions as well as solution of problems have been represented in unambiguos language so as to clear to the needs of all students of Biosciences (Zoology, Botany, Physiology, Microbiology and Biotechnology etc.)

|Quantum Physics|Charged - Particle Ballistics|Electron Optics|Lenses And Eye-Pieces|Interference|Diffraction And Polarization|Nuclear Physics|Digital Electronics|Dielectrics|Lasers|Fibre Optics

Sensors are integral to modern living and are found in a huge number of applications in science, engineering and technology thus it is critical for scientists and technologists to understand the physical principles behind sensor types as well as their characteristics, applications, and how they can be suitably employed in sensor technologies. Whilst there exists a vast literature on the physics and characteristics of traditional sensors, this book provides a broad overview of the range of sensor technologies and attendant topics needed to optimise and utilise these devices in the modern world. Not only reviewing sensors by classification, the book encompasses the physics, design characteristics, simulation and interface electronics, and it includes case studies, future challenges and several other aspects of wider sensor technology to provide an overview of modern sensors and their applications. The broad scope will appeal to industrial and academic researchers and application engineers, especially those developing and implementing real-time hardware implementations employing smart sensors for emerging applications. Key Features Features a broad review of sensor types, including MEMS, wearable and smart sensors Presents application of modern sensors and emerging research directions Incorporates case studies Reviews wider associated technologies such as simulation, materials and interface electronics Interdisciplinary appeal making the text suitable for industrial and academic researchers as well as application engineers

Nanoscale science and technology have occupied centre stage globally in modern scientific research and discourses in the early twenty first century. The enabling nature of the technology makes it important in modern electronics, computing, materials, healthcare, energy and the environment. This volume contains selected articles presented (as Invited/Oral/Poster presentations) at the 2nd international conference on advanced materials and nanotechnology (ICANN-2011) held recently at the Indian Institute of Technology Guwahati, during Dec 8-10, 2011. The list of topics covered in this proceedings include: Synthesis and self assembly of nanomaterials Nanoscale characterisation Nanophotonics & Nanoelectronics Nanobiotechnology Nanocomposites F Nanomagnetism Nanomaterials for Energy Computational Nanotechnology Commercialization of Nanotechnology The conference was represented by around 400 participants from several countries including delegates invited from USA, Germany, Japan, UK, Taiwan, Italy, Singapore, India etc.

Renewable Energy Systems: Modelling, Optimization and Control aims to cross-pollinate recent advances in the study of renewable energy control systems by bringing together diverse scientific breakthroughs on the modeling, control and optimization of renewable energy systems by leading researchers. The book brings together the most comprehensive collection of modeling, control theorems and optimization techniques to help solve many scientific issues for researchers in renewable energy and control engineering. Many multidisciplinary applications are discussed, including new fundamentals, modeling, analysis, design, realization and experimental results. The book also covers new circuits and systems to help researchers solve many nonlinear problems. This book fills the gaps between different interdisciplinary applications, ranging from mathematical concepts, modeling, and analysis, up to the realization and experimental work. Covers modeling, control theorems and optimization techniques which will solve many scientific issues for researchers in renewable energy Discusses many multidisciplinary applications with new fundamentals, modeling, analysis, design, realization and experimental results Includes new circuits and systems, helping researchers solve many nonlinear problems

For those of you who don’t know me yet, I’m Rivanah Bannerjee, a Kolkatan trying to find her footing in Mumbai. Even though I’m currently in a relationship with a great guy, I can’t help but miss my ex-boyfriend despite knowing that he cheated on me. But that’s the least of my worries. The stranger has gone missing since the police tried to nab him unsuccessfully. Where is he? What does he want from me? Why did he come into my life in the first place? Will he ever contact me again? These and many more questions continue to torment me every day. I’m desperate for the stranger to come back to me, knowing full well that he may destroy me forever. But then that’s the sexiest thing I have ever known about someone. With every revelation, it seems the truth is

far more twisted than Rivanah can imagine. Wickedly plotted, All Yours, Stranger—Novoneel Chakraborty's gripping follow-up to his hugely popular Marry Me, Stranger—will keep you on the edge of your seat until the last page. This is Book Two of the Stranger Trilogy

Security and authentication issues are surging to the forefront of the research realm in global society. As technology continues to evolve, individuals are finding it easier to infiltrate various forums and facilities where they can illegally obtain information and access. By implementing biometric authentications to these forums, users are able to prevent attacks on their privacy and security. Biometrics: Concepts, Methodologies, Tools, and Applications is a multi-volume publication highlighting critical topics related to access control, user identification, and surveillance technologies. Featuring emergent research on the issues and challenges in security and privacy, various forms of user authentication, biometric applications to image processing and computer vision, and security applications within the field, this publication is an ideal reference source for researchers, engineers, technology developers, students, and security specialists.

This book describes the latest advances in intelligent techniques such as fuzzy logic, neural networks, and optimization algorithms, and their relevance in building intelligent information systems in combination with applied mathematics. The authors also outline the applications of these systems in areas like intelligent control and robotics, pattern recognition, medical diagnosis, time series prediction, and optimization of complex problems. By sharing fresh ideas and identifying new targets/problems it offers young researchers and students new directions for their future research. The book is intended for readers from mathematics and computer science, in particular professors and students working on theory and applications of intelligent systems for real-world applications.

Biophysics is an intradisciplinary as well as an emerging subject in the field of Biological Science in the recent years.It is a hybrid science which deals with Physics ,Chemistry and Biology.

This self-contained treatment covers all aspects of nonlinear dynamics, from fundamentals to recent developments, in a unified and comprehensive way. Numerous examples and exercises will help the student to assimilate and apply the techniques presented.

Of all the different areas in computational chemistry, density functional theory (DFT) enjoys the most rapid development. Even at the level of the local density approximation (LDA), which is computationally less demanding, DFT can usually provide better answers than Hartree-Fock formalism for large systems such as clusters and solids. For atoms and molecules, the results from DFT often rival those obtained by ab initio quantum chemistry, partly because larger basis sets can be used. Such encouraging results have in turn stimulated workers to further investigate the formal theory as well as the computational methodology of DFT.This Part II expands on the methodology and applications of DFT. Some of the chapters report on the latest developments (since the publication of Part I in 1995), while others extend the applications to wider range of molecules and their environments. Together, this and other recent review volumes on DFT show that DFT provides an efficient and accurate alternative to traditional quantum chemical methods. Such demonstration should hopefully stimulate frutiful developments in formal theory, better exchange-correlation functionals, and linear scaling methodology.

Festschrift honoring Professor Kuruvila Zachariah, 1890-1955, former head of the Department of History, Presidency College, on his birth centenary.

Bionanocomposites in Tissue Engineering and Regenerative Medicine explores novel uses of these in tissue engineering and regenerative medicine. This book offers an interdisplinary approach, combining chemical, biomedical engineering, materials science and pharmacological aspects of the characterization, synthesis and application of bionanocomposites. Chapters cover a broad selection of bionanocomposites including chitosan, alginate and more, which are utilized in tissue engineering, wound healing, bone repair, drug formulation, cancer therapy, drug delivery, cartilage regeneration and dental implants. Additional sections of Bionanocomposites in Tissue Engineering and Regenerative Medicine discuss, in detail, the safety aspects and circular economy of bionanocomposites – offering an insight into the commercial and industrial aspects of these important materials. Bionanocomposites in Tissue Engineering and Regenerative Medicine will prove a highly useful text for for those in the fields of biomedical engineering, chemistry, pharmaceutics and materials science, both in academia and industrial R&D groups. Each bionanocomposite type is covered individually, providing specific and detailed information for each material Covers a range of tissue engineering and regenerative medicine applications, from dental and bone engineering to cancer therapy Offers an integrated approach, with contributions from authors across a variety of related disciplines, including biomedical engineering, chemistry and materials science

Supersymmetry or SUSY, one of the most beautiful recent ideas of physics, predicts sparticles existing as superpartners of particles. This book gives a theoretical and phenomenological account of sparticles. Starting from a basic level, it provides a comprehensive, pedagogical and user-friendly treatment of the subject of four-dimensional N=1 supersymmetry as well as its observational aspects in high energy physics and cosmology. Part One of the book introduces the requisite formal theory, preceded by a discussion of the naturalness problem. Part Two describes the supersymmetrization of the Standard Model of particle interactions as well as the origin of soft supersymmetry breaking and how it can be mediated from higher energies. Search strategies for sparticles, supersymmetric Higgs bosons, nonminimal scenarios and cosmological implications are some of the other topics covered. Novel features of the book include a dictionary between two-component and four-component spinor notation, a step-by-step derivation of the nonrenormalization theorem, an extended discussion of supersymmetric renormalization group evolution, detailed analyses of minimal and nonminimal models with gravity (including anomaly) mediated and gauge mediated supersymmetry breaking as well as elaborate self-contained presentations of collider signals of sparticles plus supersymmetric Higgs bosons and of supersymmetric cosmology. Appendices list all Feynman rules for the vertices of the Minimal Supersymmetric Standard Model. Contents:Introduction and Overview:Supersymmetry: Why and HowSupersymmetry Formalism:PreliminariesAlgebraic AspectsFree Superfields in SuperspaceInteracting

SuperfieldsSuperspace Perturbation Theory and SupergraphsGeneral Aspects of Supersymmetry BreakingSupersymmetry Phenomenology:Basic Structure of the MSSMSoft Supersymmetry Breaking in the MSSMHiggs Bosons in the MSSMEvolution from Very High EnergiesGravity Mediated Supersymmetry BreakingGauge Mediated Supersymmetry BreakingBeyond the MSSMSupersymmetry at CollidersSupersymmetric CosmologyConclusion: Wish List, Roadmap and Fine Tuning Readership: Graduate students, teachers and researchers in theoretical as well as experimental high energy physics. Keywords:Reviews: “I find the book very attractive and very useful at this time. There are not so many up-to-date books for the LHC phenomenology.” G Altarelli CERN “It seeks to be the complete primer on supersymmetry for the theorist, phenomenologist and experimentalist. The presentation is lucid throughout and the notation is well-chosen. This is a highly recommended book for the student of particle physics who has studied the basics of quantum field theory and the phenomenon of the known elementary particles. In addition, it is a handy source of information (and most valuably, explanations) for senior students and practicing physicists in other areas, who will increasingly feel the need to know about the area of fundamental science most finely poised for a dramatic experimental breakthrough.” Current Science “… very informative book on supersymmetric particles …” Professor Barry Barish California Institute of Technology “Very good text. Although suitable for those who want to begin working in the field, nonexperts can get substantial insights into the goals and motivation behind the theory by browsing through. The book begins with a good pedagogical treatment of the superspace formalism and ends with an extensive summary of Feynman rules. About 300 pages cover the phenomenology of supersymmetry — from colliders to dark matter — with significant discussion of supersymmetry breaking and a 30-page chapter on supersymmetric Higgs bosons.” Physics Today
Plasmonics is a rapidly developing field that combines fundamental research and applications ranging from areas such as physics to engineering, chemistry, biology, medicine, food sciences, and the environmental sciences. Plasmonics appeared in the 1950s with the discovery of surface plasmon polaritons. Plasmonics then went through a novel propulsion in the mid-1970s, when surface-enhanced Raman scattering was discovered. Nevertheless, it is in this last decade that a very significant explosion of plasmonics and its applications has occurred. Thus, this book provides a snapshot of the current advances in these various areas of plasmonics and its applications, such as engineering, sensing, surface-enhanced fluorescence, catalysis, and photovoltaic devices.
Indian Journal of Theoretical PhysicsPlasma and Fusion ScienceFrom Fundamental Research to Technological ApplicationsCRC Press
The Seventh Edition Of This Book Is Thoroughly Revised And Enlarged And Is Specifically Tailored To Meet The Revised Syllabus, Offered In The First Year Of B.E./B.Tech. Of All The Branches In Various Engineering Colleges Affiliated To Anna University, Tamil Nadu.Salient Features:- * It Is User-Friendly With Step-By-Step Procedures. * Each Solved Problem Is Graded And Is Followed By Similar Exercise Problem For Students To Practice Confidently And Grasp The Fundamental Principles Much Easily. * Additional Problems Are Also Added In Each Chapter. * An Excellent Guide For An Average Student Highlighting The Important Points, Notes, Rules, Hints, To Remember, Etc. * Illustrated With 800 Solvedi University Problems With Illustrations, It Is Examination Oriented.
A series of six books for Classes IX and X according to the CBSE syllabus
In this new book, an interdisciplinary and international team of experts provides an exploration of the emerging plasma science that is poised to make the plasma technology a reality in the manufacturing sector. The research presented here will stimulate new ideas, methods, and applications in the field of plasma science and nanotechnology. Plasma technology applications are being developed that could impact the global market for power, electronics, mineral, and other fuel commodities. Currently, plasma science is described as a revolutionary discipline in terms of its possible impact on industrial applications. It offers potential solutions to many problems using emerging techniques. In this book the authors provide a broad overview of recent trends in field plasma science and nanotechnology. Divided into several parts, Plasma and Fusion Science: From Fundamental Research to Technological Applications explores some basic plasma applications and research, space and atmospheric plasma, nuclear fusion, and laser plasma and industrial applications of plasma. A wide variety of cutting-edge topics are covered, including: • basic plasma physics • computer modeling for plasma • exotic plasma (including dusty plasma) • industrial plasma applications • laser plasma • nuclear fusion technology • plasma diagnostics • plasma processing • pulsed power • space astrophysical plasma • plasma and nanotechnology Pointing to current and possible future developments in plasma science and technology, the diverse research presented here will be valuable for researchers, scientists, industry professionals, and others involved in the revolutionary field of plasma and fusion science.
The book in its present form is due to my interaction with the students for quite a long time.It had been my long-cherished desire to write a book covering most of the topics that form the syllabii of the Engineering and Science students at the degree level.Many students,although able to understand the various topics of the books,may not be able to put their knowledge to use.For this purpose a number of questions and problems are given at the end of each chapter.