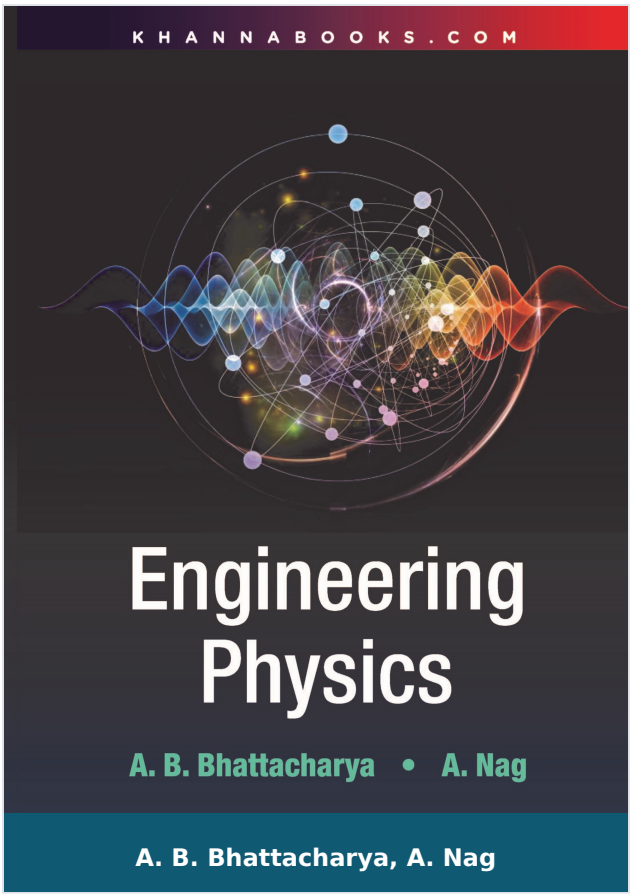



# Engineering Physics

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In this book titled ‘Engineering Physics,’ the authors have given sincere efforts to explain the concepts of Physics in a very judicial way for the Engineering students of different branches so that they can acquire a reasonably good knowledge on the subject without devoting much time. In order to implement it successfully, the authors have maintained the following two features throughout:

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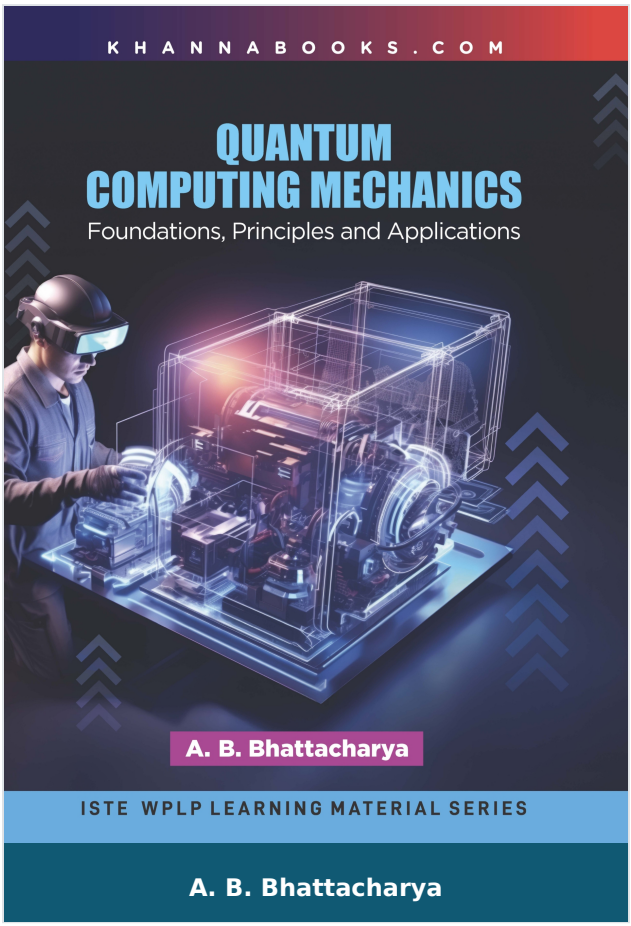
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# Quantum Computing Mechanics(Foundations, Principles and Applications)

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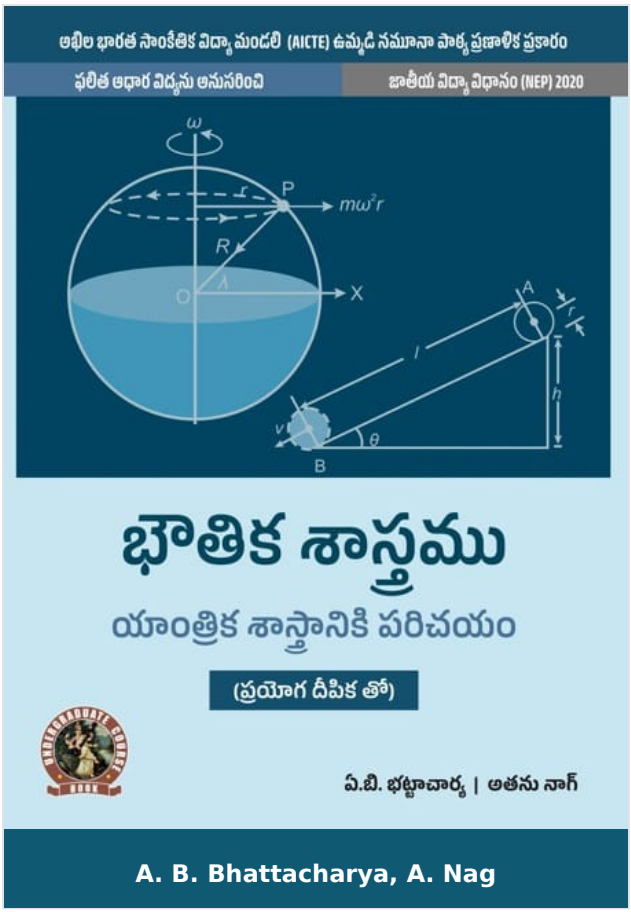
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# Physics (Introduction to Mechanics) with Lab Manual

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·To develop knowledge on critical questions solved and supplementary problems covering all type of medium and advanced level

· Under problems in a very logical and systematic manner.

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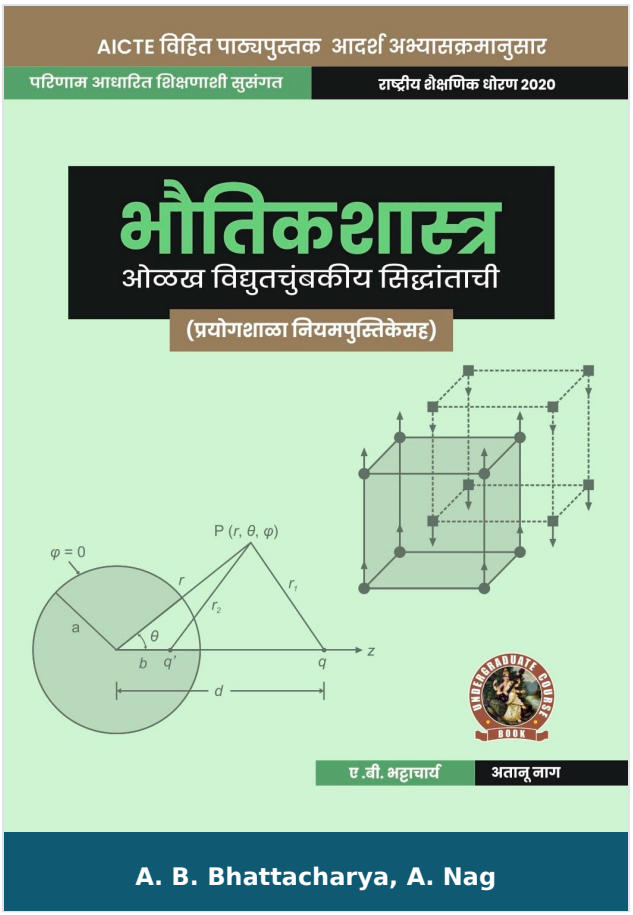
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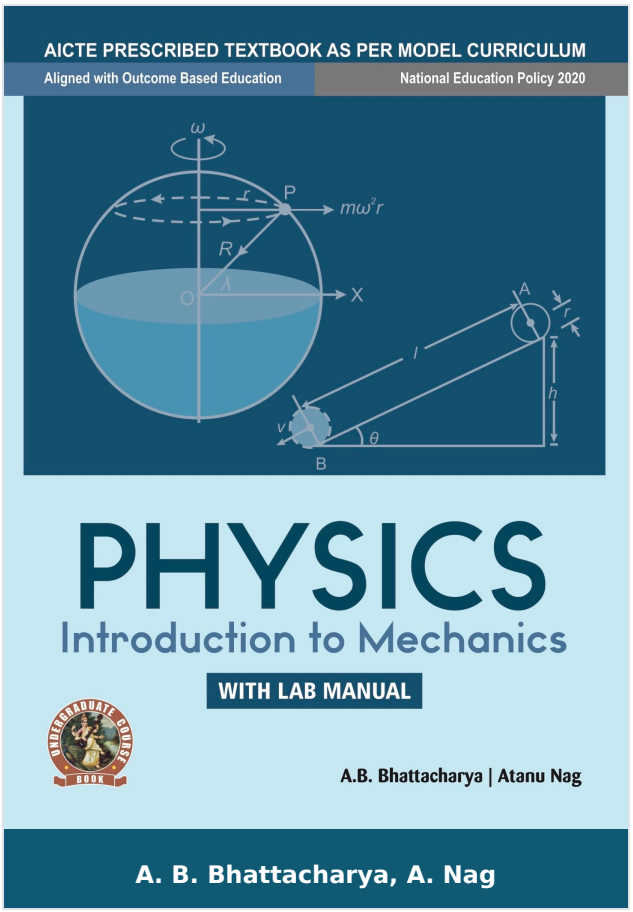
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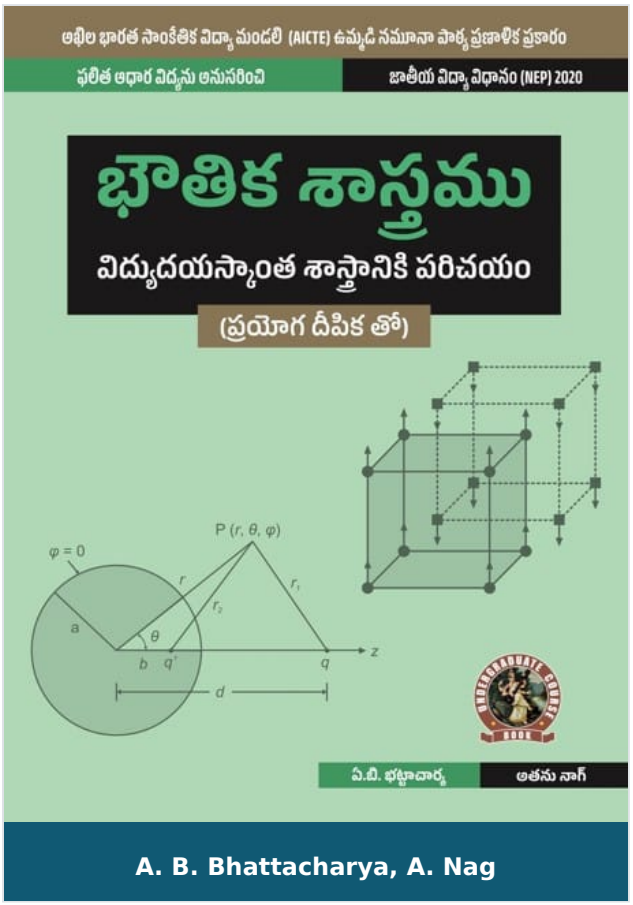
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Engineering Physics: Introduction to Electromagnetic Theory has been written for the first year students of B. Tech Engineering Degree Courses of all Indian Universities following the guideline and syllabus as recommended by AICTE. The book, written in a very simple and lucid way, will be very much helpful to reinforce understanding of different aspects to meet the engineering student’s needs Writing a text-cum manual of this category poses several challenges providing enough content without sacrificing the essentials, highlighting the key features, presenting in a novel format and building informative assessment. This book on engineering physics will prepare students to apply the knowledge of Electromagnetic Theory to tackle 21st century and onward engineering challenges and address the related questions.

Some Salient Features of the Book:

1. Expose basic science to the engineering students to the fundamentals of physics and to enable them to get an insight of the subject.

2. To develop knowledge on critical questions, solved and supplementary problems covering all types of medium and advanced level problems in a very logical and systematic manner.

3. Some essential information for the users under the heading “know More” for clarifying some basic

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Prof. A. B. Bhattacharya did his MSc and PhD degree from the University of Calcutta in Physics and Post-doc from the Massachusetts Institute of Technology (MIT), Cambridge, USA. He worked in close collaboration with the leading laboratories like Lincoln Laboratory; Milestone Hill Observatory; Earth, Atmospheric and Planetary Sciences division of MIT and many other well recognized laboratories in India and abroad. He served as Professor & Head of the Department of Physics, University of Kalyani; Dean of Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

**A. Nag**

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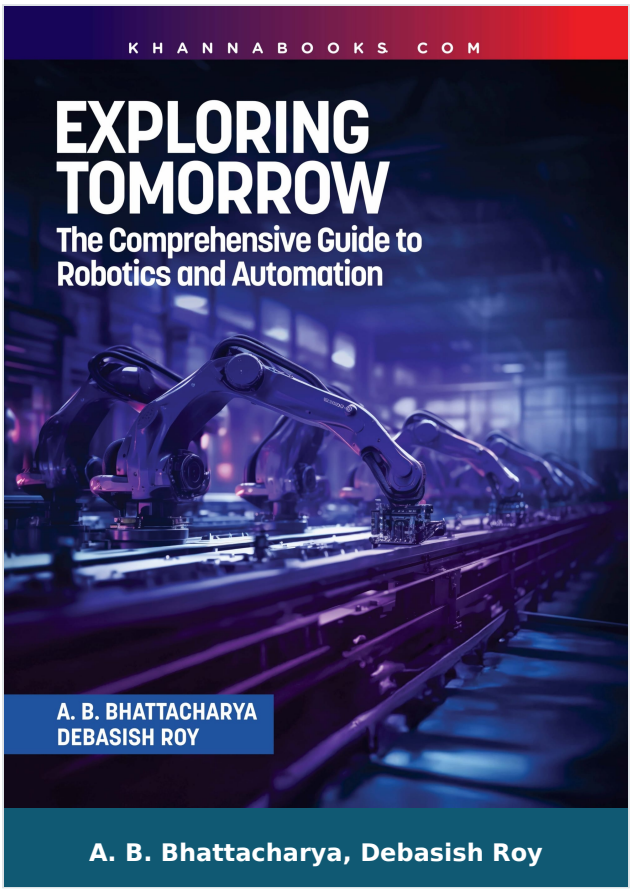
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A. Nag Dr. Atanu Nag did his M. Sc. in 2007 and Ph. D. in 2013 from the University of Kalyani. He has published over 50 Journal papers and 5 books for Science & Engineering students. Presently he is the Head and Associate Professor in the Department of Physics, Modern Institute of Engineering & Technology, Hooghly, West Bengal.

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# Exploring Tomorrow (The Comprehensive Guide to Robotics and Automation)


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**Salient Features of the Book:**

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- Robotics in Entertainment and Service Industries.
- Autonomation and the Workforce: Emerging Trends.
- Interconnected Domains of Industrial Automation and Robotics.
- Robotics and Automation Technologies used in Modern Warfare.
- Challenges in Robotics and Automation.


## Author

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of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

**Debasish Roy**

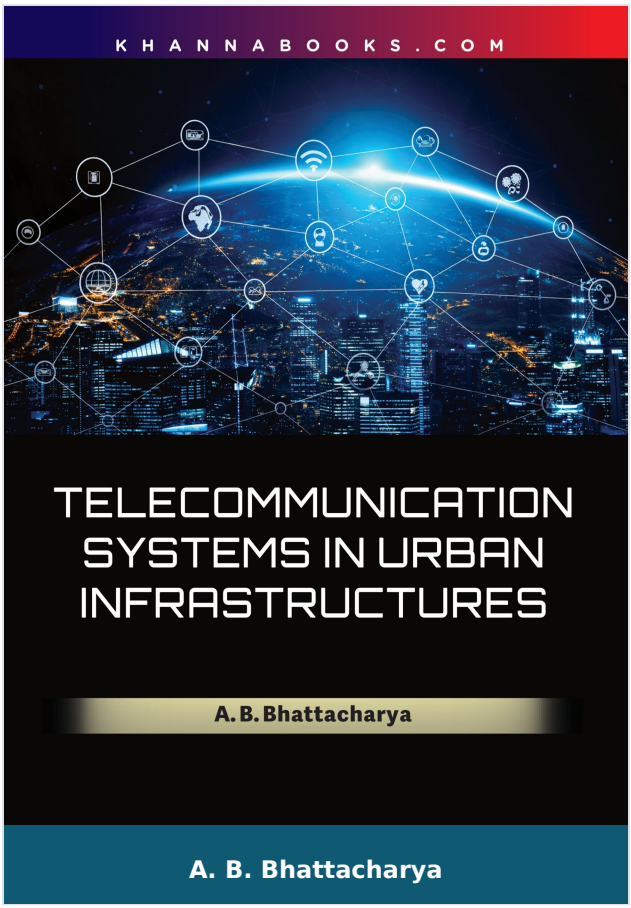
Dr. Debasish Roy is a highly accomplished and motivated professional with a robust academic background in Information Technology, including an MCA, MBA M. Tech, and PhD. He was currently the Director General( Railways) at a top-level position in the Indian Police Service ( IPS). He received the Indian Police Medal and President's Police Medal in 2000 and 2010. He is well known for pioneering contributions in land mobile radio systems. He is highly recognized for spearheading strategic planning and execution of security measures for the railways network, implementing innovative technologies to enhance railway security and counteract emerging day-to-day operations efficiently. He has provided expert guidance on implementing land mobile radio system for public safety agencies and conducted groundbreaking research in cryptanalysis, leading to

development of advanced techniques for enhancing cyber security. He successfully led a team in designing and implementing secure communication protocols for land mobile radio systems, ensuring robust and encrypted communication. He has published numerous research papers in reputed conferences. He mentored and guided students at the postgraduate and doctoral levels. He has a proven track record of effective leadership and team management, besides all his strategies planning and execution in high-stakes environments. He received many honors and awards for his outstanding contributions to the field and was recognized for exceptional leadership and innovation in technology-driven security initiatives. He completed an Executive Program in Quantum Company and Machine Learning from IIT Delhi in 2023. He participated in the Workshop on Machine Learning for Cryptology (ML4Crypto 2023) at ISI, Kolkata from November 8-10, 2023, organized by SAG, DRDO. His recent paper on " Iterative Quantum Algorithm for Linear System Solving" has been accepted at the International Conference SAI, Computing, 2024 London, organized by Microsoft Corporation.

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# Telecommunication Systems In Urban Infrastructures


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## Product Description

**Telecommunication Systems In Urban Infrastructures**

Modern cities run on connectivity. From smart transport and energy grids to IoT-enabled homes and resilient emergency networks, telecommunication on systems form invisible backbone of urban life. Telecommunication systems in Urban Infrastructure delivers a comprehensive, practical, and future-focused exploration of how communication technologies design, support, and transform smart cities.

This book bridges theory and real-world application, guiding students, engineers, planners, and policymakers through the full ecosystem of urban telecommunication – from foundational signal principles to emerging 6G, AI- driven networks, and cyber-resilient infrastructure.

**Readers will explore:**

- Core principles of wired and wireless telecommunication systems
- Smart city connectivity for transport, utilities, building, and public spaces
- IoT integration, cyber security, and urban data privacy
- Planning, deployment, and economic challenges in dense urban environments
- Cutting-edge technologies including AI optimization, edge/cloud computing, and quantum communication
- Global smart city case studies and future sustainability trends

**Each chapter is carefully structured with:**

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- Numerical problems and technical exercises
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- Practical insights into standards, regulations, and infrastructure planning

With coverage spanning telecom fundamentals, smart utilities, mobility systems, urban IoT, security frameworks, and next-generation networks, this book provides a complete roadmap for designing and managing connected cities. Whether you are4 preparing for academic study, professional deployment, or research in smart infrastructure, this text equips you with the technical depth, analytical tools, and systems perspective required building the cities of tomorrow.

Build smarter networks. Design resilient cities. Shape the connected future.

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## Author

**A. B. Bhattacharya**

Prof. A. B. Bhattacharya did his MSc and PhD degree from the University of Calcutta in Physics and Post-doc from the Massachusetts Institute of Technology (MIT), Cambridge, USA. He worked in close collaboration with the leading laboratories like Lincoln Laboratory; Milestone Hill Observatory; Earth, Atmospheric and Planetary Sciences

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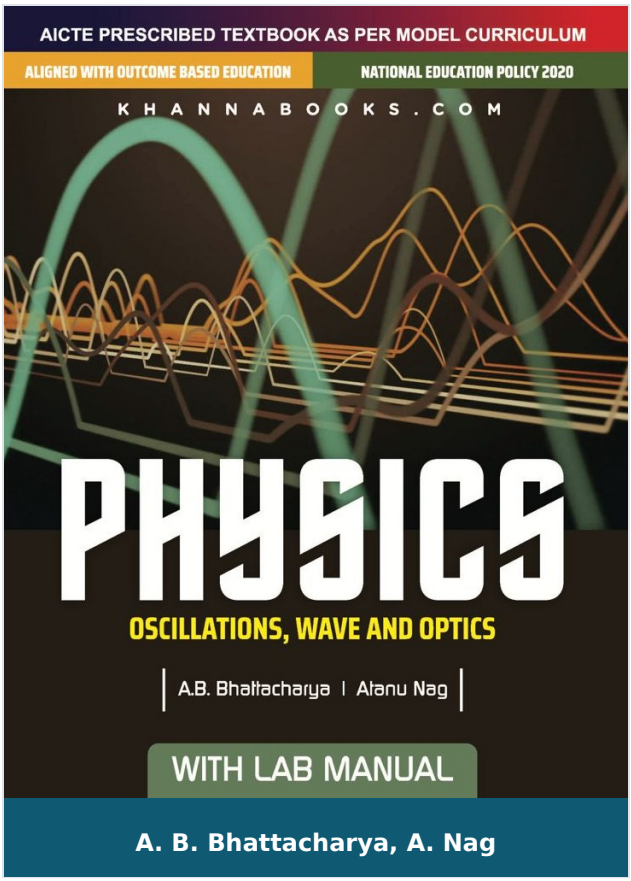
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division of MIT and many other well recognized laboratories in India and abroad. He served as Professor & Head of the Department of Physics, University of Kalyani; Dean of Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

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# Physics (Oscillations, Waves and Optics) With Lab Manual

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## Author

**A. B. Bhattacharya**

Prof. A. B. Bhattacharya did his MSc and PhD degree from the University of Calcutta in Physics and Post-doc from the Massachusetts Institute of Technology (MIT), Cambridge, USA. He worked in close collaboration with the leading laboratories like Lincoln Laboratory; Milestone Hill Observatory; Earth, Atmospheric and Planetary Sciences division of MIT and many other well recognized laboratories in India and abroad. He served as Professor & Head of the Department of Physics, University of Kalyani; Dean of Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars

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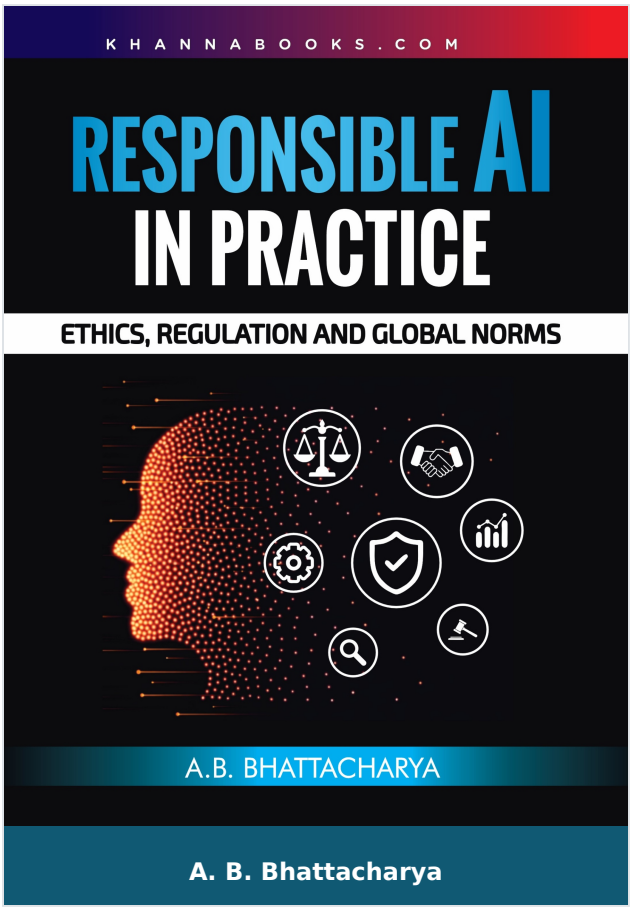
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received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

**A. Nag**

A. Nag Dr. Atanu Nag did his M. Sc. in 2007 and Ph. D. in 2013 from the University of Kalyani. He has published over 50 Journal papers and 5 books for Science & Engineering students. Presently he is the Head and Associate Professor in the Department of Physics, Modern Institute of Engineering & Technology, Hooghly, West Bengal.




# Responsible AI in Practice (Ethics, Regulation and Global Norms)

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## Product Description

**Responsible AI in Practice (Ethics, Regulation and Global Norms)**

Responsible Al in Practice: Ethics, Regulation and Global Norms serves as a vital compass for navigating the complex intersection of cutting-edge technology and human values. In an era where Artificial Intelligence has moved from science fiction to a pervasive social force, this book addresses the urgent question of how to ensure Al serves humanity rather than undermining it. It transcends abstract academic debate by bridging the gap between philosophical reflection and real-world implementation, offering a practical guide to transforming high- level ethical principles into actionable product designs and regulatory enforcement.

The text meticulously explores the evolving tapestry of global Al governance, from the European Union's Al Act to UNESCO's global guidelines, providing a multidimensional view of how different nations are crafting a shared ethical language for machines. Designed for a broad audience, it speaks directly to policymakers drafting laws, engineers embedding ethics into code, researchers probing machine learning boundaries, and engaged citizens seeking to understand the societal mirror that Al represents. By weaving together case studies, ethical checklists, and comparative legal insights, the book empowers readers to act as responsible custodians of transformative technology.

**Salient Features: -**

- **Practical Frameworks for Ethical Design**: The book moves beyond theory to provide a "roadmap" for embedding fairness and accountability directly into Al architecture. It offers technical toolkits for mitigating bias and solving the "Black Box" problem through Explainable Al (XAI), ensuring systems are both transparent and trustworthy.

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- Building Ethical AI: Frameworks, Tools and Best Practices
- AI and the Future of Work: Ethics and Social Justice
- The Road Ahead: Future Challenges and Ethical Imperatives
- Appendices


## Author

**A. B. Bhattacharya**

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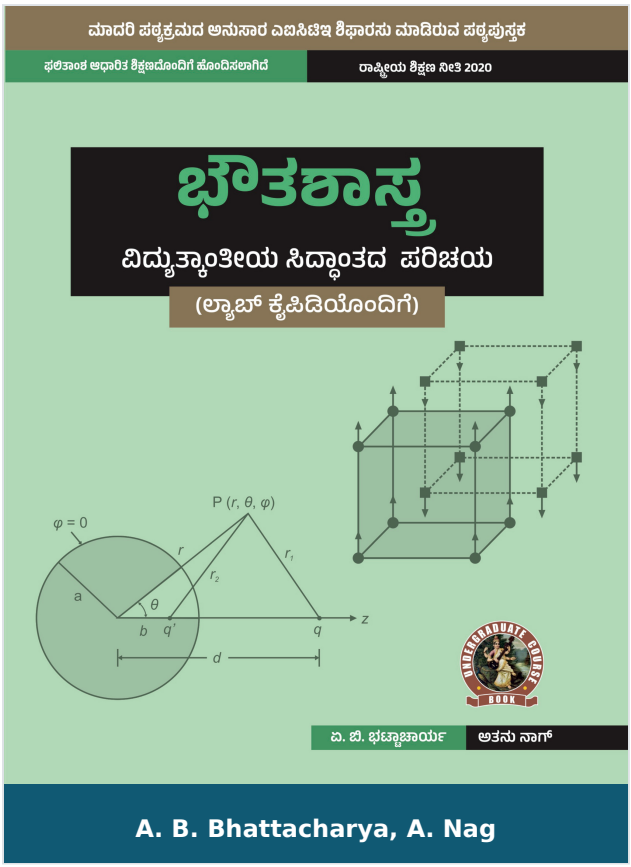
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Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

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# Physics (Introduction to Electromagnetic Theory) (with Lab Manual)

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## Product Description

Engineering Physics: Introduction to Electromagnetic Theory has been written for the first year students of B. Tech Engineering Degree Courses of all Indian Universities following the guideline and syllabus as recommended by AICTE. The book, written in a very simple and lucid way, will be very much helpful to reinforce understanding of different aspects to meet the engineering student’s needs Writing a text-cum manual of this category poses several challenges providing enough content without sacrificing the essentials, highlighting the key features, presenting in a novel format and building informative assessment. This book on engineering physics will prepare students to apply the knowledge of Electromagnetic Theory to tackle 21st century and onward engineering challenges and address the related questions.

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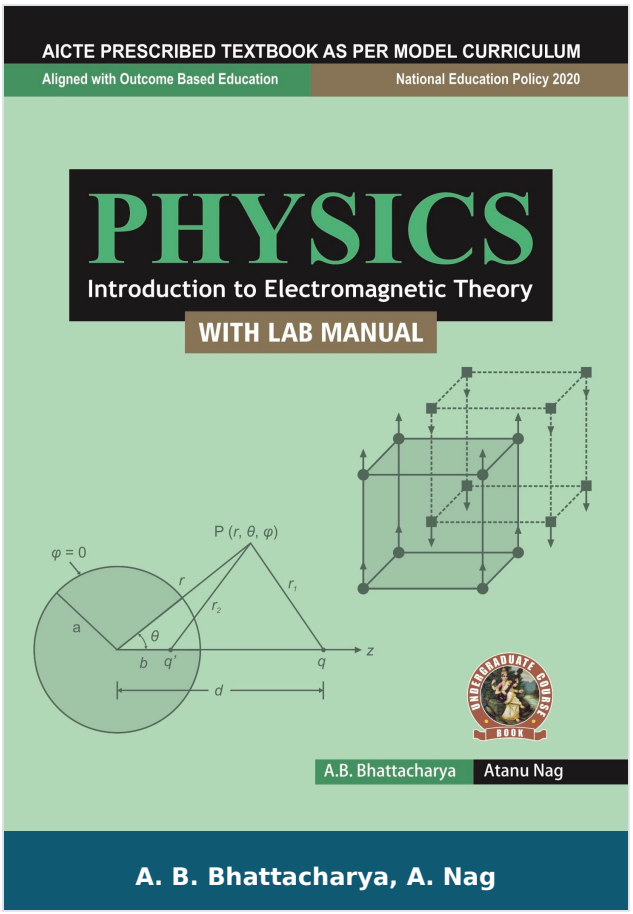
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# Physics (Introduction to Electromagnetic Theory) (with Lab Manual)

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## Product Description

Engineering Physics: Introduction to Electromagnetic Theory has been written for the first year students of B. Tech Engineering Degree Courses of all Indian Universities following the guideline and syllabus as recommended by AICTE. The book, written in a very simple and lucid way, will be very much helpful to reinforce understanding of different aspects to meet the engineering student’s needs Writing a text-cum manual of this category poses several challenges providing enough content without sacrificing the essentials, highlighting the key features, presenting in a novel format and building informative assessment. This book on engineering physics will prepare students to apply the knowledge of Electromagnetic Theory to tackle 21st century and onward engineering challenges and address the related questions.

Some Salient Features of the Book:

· Expose basic science to the engineering students to the fundamentals of physics and to enable them to get an insight of the subject.

· To develop knowledge on critical questions, solved and supplementary problems covering all types of medium and advanced level problems in a very logical and systematic manner.

· Some essential information for the users under the heading “know More” for clarifying some basic information as well as comprehensive synopsis of formulae for a quick revision of the basic principles.

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