

Electricity and Magnetism

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For 50 years, Edward M. Purcell's classic textbook has introduced students to the world of electricity and magnetism. The third edition has been brought up to date and is now in SI units. It features hundreds of new examples, problems, and figures, and contains discussions of real-life applications. The textbook covers all the standard introductory topics, such as electrostatics, magnetism, circuits, electromagnetic waves, and electric and magnetic fields in matter. Taking a nontraditional approach, magnetism is derived as a relativistic effect. Mathematical concepts are introduced in parallel with the physics topics at hand, making the motivations clear. Macroscopic phenomena are derived rigorously from the underlying microscopic physics. With worked examples, hundreds of illustrations, and nearly 600 end-of-chapter problems and exercises, this textbook is ideal for electricity and magnetism courses. Solutions to the exercises are available for instructors at www.cambridge.org/Purcell-Morin.

Introducing students to the world of electricity and magnetism, the third edition of this classic textbook has now been converted to SI units and features additional examples and problems. It covers all the standard introductory topics and contains hundreds of illustrations and nearly 600 end-of-chapter problems and exercises. Edward M. Purcell (1912-97) was the recipient of many awards for his scientific, educational and civic work. In 1952 he shared the Nobel Prize for Physics for his independent discovery of nuclear magnetic resonance in liquids and in solids, an elegant and precise way of determining chemical structure and properties of materials which is widely used today. During his career he served as science advisor to Presidents Dwight D. Eisenhower, John F. Kennedy and Lyndon B. Johnson.

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Other Books

Electricity and Magnetism. This outstanding text for a two-semester course is geared toward physics undergraduates who have completed a basic first-year physics course. The coherent treatment offers several notable features, including 300 detailed examples at various levels of difficulty, a self-contained chapter on vector algebra, and a single chapter devoted to radiation that cites interrelationships between various analysis methods. Starting with chapters on vector analysis and electrostatics, the text covers electrostatic boundary value problems, formal and microscopic theories of dielectric electrostatics and of magnetism and matter, electrostatic energy, steady currents, and induction. Additional topics include magnetic energy, circuits with nonsteady currents, Maxwell's equations, radiation, electromagnetic boundary value problems, and the special theory of relativity. Exercises appear at the end of each chapter and answers to odd-numbered problems are included in one of several helpful appendixes.

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