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   Nota di contenuto   1 Basics of Electrostatics -- 2 Electrostatics of Conductors -- 3
                             Electrostatics of Dielectric Media -- 4 Electric Currents -- 5
                             Magnetostatics -- 6 Magnetic Induction -- 7 Electromagnetic
                             Oscillators and Wave Propagation -- 8 Maxwell Equations and
                             Conservation Laws -- 9 Relativistic Transformations of the Fields -- 10
                             Radiation Emission and Scattering -- 11 Electromagnetic Waves in
                             Matter -- 12 Transmission Lines, Waveguides -- Resonant Cavities --
                             13 Additional Problems.

   Sommario/riassunto   This second edition adds 46 new problems, for a total of 203. The
                             solutions to certain "old" problems have been revised for improved
                             clarity, in response to questions and comments from our students
                             (second-year students in the Master's in Physics program). Each
                             problem is given a title indicating its relation to the various areas of
                             physics or technology. By tackling the problems presented here,

students are gently introduced to advanced topics such as unipolar and homopolar motors, magnetic monopoles, radiation pressure, angular momentum of light, bulk and surface plasmons, and radiation friction. We also address a number of tricky concepts and apparent ambiguities and paradoxes encountered in the classical theory of electromagnetism, with a particular focus on conservation laws and transformation properties between different frames of reference. At the same time, the book can be used as an introduction to applications of classical electromagnetism including cutting-edge topics like plasmonics, metamaterials, and light-driven propulsion. While unnecessary mathematical complexity is avoided, the new edition also provides a few introductory examples concerning elegant and powerful solution techniques. Hopefully the second edition offers an even better teaching tool for undergraduates in physics, mathematics, and electric engineering, and a valuable reference guide for students planning to work in optics, material science, electronics, and plasma physics.