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Nota di contenuto	Introduction -- Boundary Integral Equations -- Representation Formulae -- Sobolev Spaces -- Variational Formulations -- Electromagnetic Fields -- Introduction to Pseudodifferential Operators -- Pseudodifferential Operators as Integral Operators -- Pseudodifferential and Boundary Integral Operators -- Integral Equations on Recast as Pseudodifferential Equations -- Boundary Integral Equations on Curves in R^2. Remarks on Pseudodifferential Operators for Maxwell Equations -- Appendix A: Local Coordinates -- Appendix B: Vector Field Identities, Integration Formulae -- References -- Index.
Sommario/riassunto	This is the second edition of the book which has two additional new chapters on Maxwell’s equations as well as a section on properties of solution spaces of Maxwell’s equations and their trace spaces. These two new chapters, which summarize the most up-to-date results in the

literature for the Maxwell’s equations, are sufficient enough to serve as a self-contained introductory book on the modern mathematical theory of boundary integral equations in electromagnetics. The book now contains 12 chapters and is divided into two parts. The first six chapters present modern mathematical theory of boundary integral equations that arise in fundamental problems in continuum mechanics and electromagnetics based on the approach of variational formulations of the equations. The second six chapters present an introduction to basic classical theory of the pseudo-differential operators. The aforementioned corresponding boundary integral operators can now be recast as pseudo-differential operators. These serve as concrete examples that illustrate the basic ideas of how one may apply the theory of pseudo-differential operators and their calculus to obtain additional properties for the corresponding boundary integral operators. These two different approaches are complementary to each other. Both serve as the mathematical foundation of the boundary element methods, which have become extremely popular and efficient computational tools for boundary problems in applications. This book contains a wide spectrum of boundary integral equations arising in fundamental problems in continuum mechanics and electromagnetics. The book is a major scholarly contribution to the modern approaches of boundary integral equations, and should be accessible and useful to a large community of advanced graduate students and researchers in mathematics, physics, and engineering.