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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	History of Development and Prospects of Steelmaking in Electric Arc Furnaces -- Technology and Power Engineering of Modern Furnaces -- Arc Furnace as Thermal Unit -- Fundamental Laws and Calculation Formulae of Heat Transfer Processes -- Energy (Heat) Balances of Furnaces -- Criteria of Energy Effectiveness -- Preheating of Scrap by Burners and Off Gases -- Replacement of Electric Arcs with Burners -- Basic Physical Chemistry Processes in the Liquid Bath: Process Mechanisms -- Stirring and Splashing Bath during Oxygen Blow -- Fundamental Laws and Calculation Formulae of Gas Dynamics for Oxygen Jets -- Devices for Oxygen and Carbon Injection into the Bath -- Water-Cooled Elements of Furnace -- Automation of Energy Mode of Operation -- Offgas Evacuation and Environment.
Sommario/riassunto	This book equips a reader with knowledge necessary for critical analysis of innovations in electric arc furnaces and helps to select the most effective ones and for their successful implementation. The book also covers general issues related to history of development, current state and prospects of steelmaking in Electric Arc Furnaces. Therefore, it can be useful for everybody who studies metallurgy, including students of colleges and universities. The modern concepts of

mechanisms of Arc Furnace processes are are discussed in the book at the level sufficient to solve practical problems: To help readers lacking knowledge required in the field of heat transfer as well as hydro-gas dynamics, it contains several chapters which provide the required minimum of information in these fields of science. In order to better assess different innovations, the book describes experience of the application of similar innovations in open-hearth furnaces and oxygen converters. Some promising ideas on key issues regarding intensification of the heat, which are of interest for developers of new processes and equipment for Electric Arc Furnaces, are also the concern of the book It should be noted, that carrying out the simplified calculations as distinct from using "off the shelf" programs greatly promotes comprehensive understanding of physical basics of processes and effects produced by various factors. This book gives numerous examples of such calculations performed by means of simplified methods and formulas. Getting familiar with material in this book will allow the reader to perform required calculations on his / her own without any difficulties.