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Nota di contenuto	Chapter 1: The Electrical Capacitance, the Link to the Electrical Fluctuations -- Chapter 2: Electrical Fluctuations in Colloid and Ionic Solutions -- Chapter 3: Electrical Fluctuations Around a Charged Colloidal Cylinder in an Electrolyte -- Chapter 4: Dielectric Relaxation Around a Charged Colloidal Cylinder in an Electrolyte -- Chapter 5: The Polarizability of Rodlike Polyelectrolytes: An Electric Circuit View -- Chapter 6: pH Fluctuations in Unilamellar Vesicles -- Chapter 7: Electrical Fluctuations on the Surfaces of Proteins from Hydrodynamic Data.
Sommario/riassunto	This brief is the result of the research the author has performed in recent years covering electrical fluctuations in numerous systems, including molecular electrical fluctuations, ionic fluctuations, ionic dielectric relaxation, spherical and cylindrical polyelectrolytes, ionic polarizability in polyelectrolytes, pH fluctuation in vesicles and electrical fluctuations in proteins. The importance of estimating electrical fluctuations resides in its richness of information and omnipresence in biological systems. In order to understand how these systems work it is vital to know the magnitude of their electrical

fluctuations. Electromagnetic fluctuations are the origin of London (Van der Waals) forces between molecules, and Lifshitz forces between macro objects. Protonic fluctuations are the origin of Kirkwood and Shumaker forces between molecules and pH fluctuations. Furthermore, protonic fluctuations could be the cause of the dielectric increment of proteins in solution. Local electrical fluctuations can influence chemical reactions and so on. This book addresses the interplay of these pervasive phenomena. .