The book starts with an exposition of the relevant properties of ions and continues with a description of their solvation in the gas phase. The book contains a large amount of factual information in the form of extensive tables of critically examined data and illustrations of the points made throughout. It covers:

- the relevant properties of prospective liquid solvents for the ions
- the process of the transfer of ions from the gas phase into a liquid where they are solvated
- various aspects of the solutions of the ions, such as structural and transport ones and the effects of the ions on the solvent dynamics and structure
- what happens in cases where the solvent is a mixture selective solvation takes place
- applications of the concepts expounded previously in fields such as electrochemistry, hydrometallurgy, separation chemistry, biophysics, and synthetic methods
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