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Nota di contenuto	General Introduction -- Infrared spectroscopy of chromophore-labeled water clusters phenol-(H2O)n (n < ~50) -- Infrared pectroscopy of large protonated water clusters H+(H2O)n (n 221) -- Tuning of the Internal Energy and Isomer Distribution in Protonated Water Clusters H+(H2O)n (n 50): Towards a more detailed understanding of structures and dynamics -- Infrared spectroscopy of water cluster radical cations (H2O)n+ (n 11) -- Conclusions and future work.
Sommario/riassunto	The properties and nature of water clusters studied with novel spectroscopic approaches are presented in this thesis. Following a general introduction on the chemistry of water and water clusters, detailed descriptions of the experiments and analyses are given. All the experimental results, including first size-selective spectra of large clusters consisting of 200 water molecules, are presented with corresponding analyses. Hitherto unidentified hydrogen bond network structures, dynamics, and reactivity of various water clusters have been characterized at the molecular level. The main targets of this book are physical chemists and chemical physicists who are interested in water chemistry or cluster chemistry.