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Titolo	The Attribute of Water : Single Notion, Multiple Myths / / by Chang Q Sun, Yi Sun
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ISBN	981-10-0180-4
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Descrizione fisica	1 online resource (510 p.)
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Soggetti	Atomic structure Molecular structure Water Nanotechnology Atomic/Molecular Structure and Spectra Water, general
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Wonders of Water -- Water Structure -- O:H-O Bond Cooperativity -- Phase Diagram: Bonding Dynamics -- O:H-O Bond Asymmetrical Potentials -- Mechanical Compression -- Thermal Excitation -- Molecular Undercoordination: Supersolidity -- Superlubricity of Ice -- Water Supersolid Skin -- Mpemba Paradox -- Aqueous Solution Point Controllers -- Hydration Shells versus Water Skin -- Aqueous Solution Phase Transition -- Water Floating Bridge -- Miscellaneous Issues -- Approaching Strategies -- Laws for Water.
Sommario/riassunto	This book features the latest advances and future trends in water science and technology. It also discusses the scientific popularization and quantitative resolution of a variety of mysterious properties of water and ice from the perspective of hydrogen-bond cooperativity in response to stimuli such as chemical contamination, electrification, magnetification, mechanical compression, molecular undercoordination, and thermal excitation. Anomalies include the floating of ice, the Hofmeister effect in solutions, regelation of ice, slipperiness of ice, water’s tough skin, the Mpemba paradox, and the floating bridge. It also addresses the superfluidity of microchannels,

hydrogen bond potentials, nanodroplet and bubble thermodynamics, quasisolidity and supersolidity, controlling superhydrophobicity–superhydrophilicity transition, and high-pressure ice formation. The target audience for this book includes students, senior scholars, engineers and practitioners in the area of physical chemistry, biology, as well as aqueous and colloid solutions.