Record Nr. UNINA9910969953403321 Autore Rocke Alan J. <1948-> Titolo Image and reality: Kekule, Kopp, and the scientific imagination / / Alan J. Rocke Chicago,: University of Chicago Press, 2010 Pubbl/distr/stampa **ISBN** 9786612646423 9781282646421 1282646427 9780226723358 0226723356 Edizione [1st ed.] Descrizione fisica 1 online resource (403 p.) Collana Synthesis VB 2380 Classificazione Disciplina 540.9/034 Soggetti Chemistry, Organic - History - 19th century Science - Methodology - History **Imagination** Visualization Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front matter -- Contents -- Preface -- Abbreviations -- 1. Ether/Or --2. The Architect of Molecules -- 3. Building an Unseen Structure -- 4. A Barometer of the Science -- 5. The Heuristics of Molecular Representation -- 6. Molecules as Metaphors -- 7. Aromatic Apparitions -- 8. Dimensional Molecules -- 9. Kopp's World -- 10. Kekulé's "Dreams" -- 11. The Scientific Image-ination -- Bibliography -- Index Sommario/riassunto Nineteenth-century chemists were faced with a particular problem: how

Nineteenth-century chemists were faced with a particular problem: how to depict the atoms and molecules that are beyond the direct reach of our bodily senses. In visualizing this microworld, these scientists were the first to move beyond high-level philosophical speculations regarding the unseen. In Image and Reality, Alan Rocke focuses on the community of organic chemists in Germany to provide the basis for a fuller understanding of the nature of scientific creativity. Arguing that visual mental images regularly assisted many of these scientists in thinking through old problems and new possibilities, Rocke uses a

variety of sources, including private correspondence, diagrams and illustrations, scientific papers, and public statements, to investigate their ability to not only imagine the invisibly tiny atoms and molecules upon which they operated daily, but to build detailed and empirically based pictures of how all of the atoms in complicated molecules were interconnected. These portrayals of "chemical structures," both as mental images and as paper tools, gradually became an accepted part of science during these years and are now regarded as one of the central defining features of chemistry. In telling this fascinating story in a manner accessible to the lay reader, Rocke also suggests that imagistic thinking is often at the heart of creative thinking in all fields. Image and Reality is the first book in the Synthesis series, a series in the history of chemistry, broadly construed, edited by Angela N. H. Creager, John E. Lesch, Stuart W. Leslie, Lawrence M. Principe, Alan Rocke, E.C. Spary, and Audra J. Wolfe, in partnership with the Chemical Heritage Foundation.