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Nota di contenuto	An Introduction to Cluster Science; Contents; Preface; Units; 1 Clusters in Nature; 1.1 Atoms, Molecules and Bulk; 1.1.1 Scales of Matter Down to Atoms; 1.1.2 More on Time Scales; 1.1.3 Binding in Atoms, Molecules and Bulk; 1.2 A New State of Matter?; 1.2.1 From Atom to Bulk, Small and Large Clusters; 1.2.2 Cluster Types; 1.2.3 Cluster Science; 2 Measuring Clusters; 2.1 Cluster Production; 2.1.1 Cluster Sources; 2.1.2 Sizes and Temperatures; 2.2 Excitations of a Cluster; 2.2.1 Collisions with Projectiles; 2.2.2 Laser Fields; 2.2.3 Coupling to Light and Optical Response 2.3 Measuring Cluster Properties2.3.1 Mass Distributions; 2.3.2 Magnetic Moments; 2.3.3 Photon Signals; 2.3.4 Electron Signals; 3 How to Describe Clusters; 3.1 Approximations for the Ions; 3.1.1 The Adiabatic, or Born-Oppenheimer, Approximation; 3.1.2 Born-Oppenheimer Dynamics; 3.1.3 Beyond the Born-Oppenheimer Approximation; 3.1.4 Structure Optimization; 3.1.5 Approaches Eliminating Electrons; 3.2 Approximation Chain for Electrons; 3.2.1 Overview of Approaches for the Electronic Subsystem; 3.2.2 Ab initio

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3.2.4 Density Functional Theory 3.2.5 Semiclassical Approaches; 3.3
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4.2.3 Thermal Shape Fluctuations 4.2.4 The Width of the Mie Plasmon
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Sommario/riassunto

Filling the need for a solid textbook, this short primer in cluster science is ideal for a one-semester lecture for advanced undergraduate students. It is based on a series of lectures given by the well-established and recognized authors for the past ten years. The book covers both the basics of the domain as well as up-to-date developments. It can be divided roughly into two parts. The first three chapters introduce basic concepts of cluster science. Chapter 1 provides a general introduction, complemented by chapter 2 on experimental and chapter 3 o
