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Sommario/riassunto	This open access book covers recent advances in experiments using the ultra-cold, very weakly perturbing superfluid environment provided by helium nanodroplets for high resolution spectroscopic, structural and dynamic studies of molecules and synthetic clusters. The recent infra-red, UV-Vis studies of radicals, molecules, clusters, ions and biomolecules, as well as laser dynamical and laser orientational studies, are reviewed. The Coulomb explosion studies of the uniquely quantum structures of small helium clusters, X-ray imaging of large droplets and electron diffraction of embedded molecules are also described. Particular emphasis is given to the synthesis and detection of new species by mass spectrometry and deposition electron microscopy.