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Sommario/riassunto	Auger electron spectroscopy (AES) is capable of providing elemental composition and, in some restricted cases, chemical bonding information for the elements present near the surface of solid materials. The surface specificity of this technique is such that only atoms in the top 5 to 10 nm are detected. The great strength of AES is its ability to provide this information with excellent spatial resolution (down to <10 nm). It can be used to provide elemental maps of the surface, which gives rise to the term scanning Auger microscopy (SAM). When used in combination with a source of high-energy ions, it provides elemental depth profiles to depths of up to a few micrometers. The use of AES and SAM for the characterization of a wide range of technological materials is discussed. These include metals and alloys, semiconductors, nanostructures, and insulators. Its value as a tool for high- resolution elemental imaging and compositional depth

profiling is illustrated. The application of the technique for obtaining compositional information from the surfaces, interfaces, and thin film structures of technological and engineering materials is demonstrated. This volume also describes the basic physical principles of AES in simple, largely qualitative, terms understandable by any undergraduate science or engineering student. Major components of typical Auger spectrometers are also described because an understanding of the instrumentation is important to anyone wishing to become a skilled analyst. Mention is also made of other types of analysis for which an Auger electron spectrometer may be used, for example, secondary electron microscopy, backscattered electron imaging, and X-ray spectroscopy. The relationship between AES and other analysis techniques is also discussed.