Point-Projection Microscopy

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The Field Emission Microscope, introduced in 1937, was first the Point-Projection Microscope. This talk will highlight the legacy of the first Point-Projection Microscope and its progenies: the Field Ion Microscope, the Topografiner and the Atom-Probe. The Atom-Probe Field Ion Microscope was introduced in 1967. For the first time a microscope became available that could determine the nature of one single atom seen on a metal surface and selected from neighboring atoms at the discretion of the observer. In 1973 the 10 cm Atom Probe was introduced. Patented in 1975 as the Field Desorption Spectrometer and dubbed the Imaging Atom-Probe, it allowed individual atoms to be identified and imaged as a function of depth from the surface; thereby becoming the first 3-D Atom Probe. Today, the Atom Probe has emerged as an important tool in the arsenal of techniques used to develop new materials for technology and industry. As Atom Probe technology advances new vistas of exploration will emerge, continuing the unique legacy of the Point-Projection Microscope.