The Point-Projection Microscope

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The Field Emission Microscope, introduced in 1937, was the first point-projection microscope. This talk will highlight the legacy of the Field Emission Microscope and its progenies: the Field Ion Microscope, the Topografiner, the Scanning Tunneling Microscope 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. The paradigm shifted away from single atom analysis with the introduction of the 10 cm Atom Probe in 1973. Atom Probe Tomography was introduced in 1983 and in 2000 was commercialized to provide the latest advance in the legacy of the point-projection microscope.