Atom-probe tomography (APT) analysis is one of the most promising techniques to characterize local variation of chemical distribution in materials on a sub-nanometer spatial resolution [1, 2]. This report describes the design of the Atom Probe Prototype with femtosecond Laser Evaporation and a position-sensitive detector based on delay lines for tomographic (3D) analysis of the chemical composition of materials (APPLE-3D) which has been built at the ITEP of NRC "Kurchatov institute" [3]. The prototype features were demonstrated on tungsten, titanium and aluminum alloys, Fe-Cr based alloys and oxide dispersion strengthened steels. Mass and spatial resolutions, data collection efficiency and data collection characterization are presented.


Keywords: microscopy, nanoparticles, precipitates