

Portable Mass-Spectrograph with Linear Segmented Detector Array

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Our presentation is devoted to calculation, development and testing of a portable mass spectrograph applied for on-line in-situ analysis of multicomponent mixtures. Mass analyser of the instrument contains electrostatic spherical analyser and small-sector-angle magnet. Ion-optic scheme provides double-focusing ion beam and its z-compression at the entrance of the detector. This scheme coordinates mass analyser with the original linear segmented detector array, which allows carry out independent scanning of separate subranges of mass spectra. Sensor of the detector (chevron fabricated MCP) is disposed at a considerable distance from the magnet exit boundary and moreover from focusing area. Due to the design our detector allows support dynamic range up to $< 10^7$. The results of testing are discussed.