

STABILIZED ELECTRON MULTIPLIER ANODE FOR MASS SPECTROMETRY APPLICATIONS

Abstract

The invention relates to methods and systems to compensate for distortions created by dynamic voltage applied to an electron multiplier used in mass spectrometry. An electron multiplier has a cathode end accepting ion flow, an opposite emitter end and an interior surface. The electron multiplier produces an electron output from ions colliding with the interior surface. A variable power supply has a voltage output coupled to the cathode end and the emitter end of the electron multiplier. The voltage output changes dynamically to adjust the electron output from the electron multiplier. An anode is located in proximity to the electron multiplier. An electrometer is coupled to the anode in proximity to the electron multiplier to measure the current generated by the electron output. A low pass filter circuit is coupled to the emitter end to the ground of the electrometer to attenuate emitter voltage changes. A bias circuit is coupled to the emitter end to stabilize emitter to anode voltage difference.

Figure 1