

Auto-feedback control system for microchannel plate electron scrubbing

Electron scrubbing is an important process for microchannel plates (MCP) production to clean residual gas in microchannel wall, which will reduce ion feedback and improve gain stability. This manuscript has designed an auto-feedback control system for MCP electron scrubbing, including surface electron source, power supply and auto-control system. The surface electron source is hot electrons produced by electron gun. In order to obtain stable output current of MCP, the auto-control system adjusts filament current of electron gun according to the variation of output current of MCP. The experiment result shows the output current follows the given parameters and the system works well, therefore, suitable electron scrubbing charge for MCP will be obtained.

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