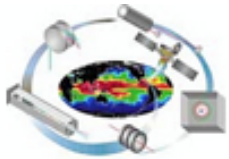

Triode-type MCP-based Compact Ion Detectors for High Pressure Operation in Miniature Mass Spectrometers

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1. *Microchannel plate* *can't be adapted for high pressure operation because of IFB*
   A prototype MCP-based detector for the miniature MS was realized by combining the **triode structure** with a novel potential mode.

2. *High pressure operation*
   The prototype detector was also installed in a **miniature ion trap system** and operated at pressures up to **1.5mtorr**.

3. *Performance comparison with a CEM detector*
   The prototype detector is superior to a conventional channel electron multiplier detector in high pressure operation.

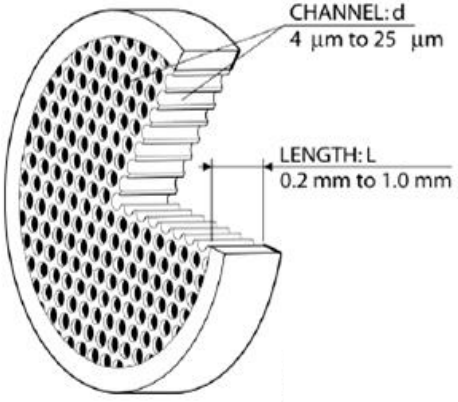

Fig.1 Schematic structure of MCP

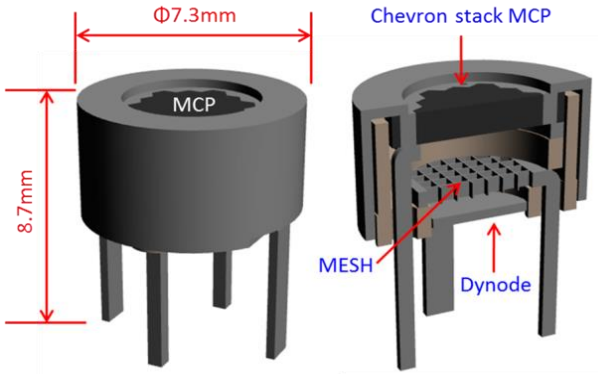

Fig.2 3D-CAD images of the prototype detector.

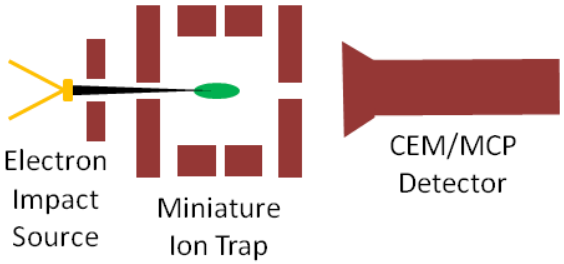

Fig.3 Schematic structure of ion trap system.