

ABSTRACT OF THE DISCLOSURE

PROCESS AND APPARATUS FOR REMOVING
PARTICLES FROM HIGH PURITY GAS SYSTEMS

An apparatus for removing particles from a gas in a high purity flowing gas system is provided which includes a flow tube inserted inline in the flowing gas system having an inlet and an outlet, a pressure sealed, electrically insulated feed-through integral to the flow tube, an emitter inserted through the feed-through into the flow tube to create a plasma in the gas to charge particles in the gas, and a collector surface in proximity to the emitter; whereby an electric field between the emitter and the collector surface draws the particles in the gas to the collector surface. An apparatus for removing particles from a gas in a high purity gas containment vessel is also provided which includes a gas containment vessel having an inlet orifice, a pressure sealed, electrically insulated feed-through sealingly attached adjacent the inlet orifice, an emitter inserted through the feed-through into the gas containment vessel to create a plasma in the gas to charge particles in the gas; and a collector surface in proximity to the emitter, whereby an electric field between the emitter and the collector surface draws the particles in the gas to the collector surface. Methods of using the above apparatus are also provided.

(Figure 1)