Abstract

The present invention discloses a particulate matter purification system for exhaust gas in semiconductor process flows, wherein the system comprises a refrigeration unit, a plasma diversion unit, and particulate matter collection unit; the refrigeration unit, the plasma diversion unit, and the particulate matter collection unit are sequentially arranged on an exhaust piping between a vacuum chamber and a vacuum pump; the particulate matter collection unit is provided with a collection trough and an exhaust port; the refrigeration unit is used to cool the exhaust gas discharged from the vacuum chamber, promoting the condensation and growth of particulate matter in the exhaust gas into particles which then enter the plasma diversion unit; the plasma diversion unit is used to generate a free charge distribution region and a sheath electric field. When the input exhaust gas flows through the free charge distribution region, the particulate matter within the exhaust gas is charged, and then the sheath electric field is used to repel and guide the charged particulate matter to move into the collection trough; the exhaust port of the particulate matter collection unit is connected to the vacuum pump through an exhaust duct, for discharging the residual gas which has been filtered out the particulate matter, through the vacuum pump.

[Figure 5]