

INSULATOR INTERPOSED TYPE PLASMA PROCESSING APPARATUS

ABSTRACT

Electrically charged droplets and neutral droplets mixed with plasma are removed with better efficiency, and an improvement in the surface treatment precision of film formation by high purity plasma is sought.

In a plasma processing apparatus including plasma generating portion A, plasma transport tube B and plasma processing portion C, an insulator interposed type plasma processing apparatus is constituted in which plasma transport tube B is made electrically independent from plasma generating portion A and plasma processing portion C electrically by interposing insulator IS and insulator IF between the starting end side and the finishing end side of the plasma transport tube. Plasma transport tube B is divided into multiple small transport tubes B01, B23 through intermediate insulator II1, and each small transport tube is made independent electrically. The electric potential of the plasma transport tube or the small transport tubes is set to GND, a variable positive electric potential, or a variable negative electric potential, by putting the plasma transport tube or the multiple small transport tubes in an electric floating state, or connecting bias power supplies EB 01, EB 23 for transport tube. Also, the small transport tubes are connected in a bent manner, and droplets are removed by the geometric structure.

Figure 2