SUMMARY OF INVENTION

[0003] The objective of the present invention is to provide a plasma transport channel device and coating equipment, which can cool a channel body and/or adsorb an impurity component in a plasma.

[0004] The present invention adopts the following technical solutions.

[0005] A plasma transport channel device includes a channel body, wherein an A channel configured for a transport of a plasma is formed inside the channel body, two ends of the A channel constitute an A inlet and an A outlet, respectively, a cooling unit configured for cooling the channel body is arranged on or beside the channel body, and an adsorption unit configured for adsorbing an impurity component in the plasma is arranged on an inner wall of the channel body.

[0006] Preferably, the cooling unit is formed by an air-cooling device arranged outside the channel body.

[0007] Preferably, the cooling unit is formed by a cooling passage arranged on the channel body, and a cooling fluid is contained in the cooling passage.

[0008] Preferably, the cooling passage is arranged on an outer side wall of the channel body.

[0009] Preferably, the cooling passage is formed by an interlayer arranged on the channel body, and a cooling fluid inlet and a cooling fluid outlet are arranged on the cooling passage.

[0010] Preferably, the cooling passage is formed by a spiral tube arranged on the channel body, one end of the spiral tube is the cooling fluid inlet, and the other end of the spiral tube is the cooling fluid outlet.

[0011] Preferably, an adsorption unit is arranged along a length range of the channel body.

[0012] Preferably, the adsorption unit is formed by a plate or a block arranged on the inner wall of the channel body.

[0013] Preferably, the adsorption unit is formed by annular plates arranged on the inner

or beside the channel body 100, and an adsorption unit configured for adsorbing the impurity component in the plasma is arranged on an inner wall of the channel body 100. The impurity component 00b includes neutral particles, impurities and microscopic particles.

[0062] In the plasma transport channel device provided by the embodiment of the present application, the A channel 110 is formed inside the channel body 100. The plasma is input from the A inlet 120 at one end of the A channel 110, and output from the A outlet 130 at the other end. During this process, the channel body 100 is cooled by the cooling unit arranged on or beside the channel body 100, thus achieving the purpose of heat dissipation and temperature reduction of the channel body 100. The impurity component 00b in the plasma is adsorbed by the adsorption unit arranged on the inner wall of the channel body 100, thereby improving the effect. When a cleaning operation is performed, only the adsorption unit needs to be cleaned. The above plasma transport channel device provided by the present application can filter out the impurity component, and only allows charged particles and electrons to pass through the channel, thereby enhancing film adhesion and uniformity, reducing particles depositing on film, improving surface properties, and greatly prolonging product service life.

[0063] Referring to FIG. 1 to FIG. 6, based on the above implementation, the present embodiment provides coating equipment, including the above-mentioned plasma transport channel device. The coating equipment is one or any combination of magnetron sputtering equipment, vacuum-arc equipment, chemical vapor deposition equipment and pure ion vacuum coating equipment.

[0064] Through using the above-mentioned plasma transport channel device, the coating equipment provided by the embodiment of the present application can concurrently filter the impurity component in the plasma and cool the channel body 100 in the working process, so as to ensure the plasma transport channel device continuously exerts a stable filtering effect, thus beneficial to improving a coating quality.

[0065] Embodiment 2