

【ABSTRACT】

The present disclosure discloses a pre-cleaning apparatus for a semiconductor substrate, and a pre-cleaning method using the same, the pre-cleaning apparatus including a process chamber having a hollow interior and comprising a process gas supply hole formed in a side upper portion and a lower discharge hole formed in a lower side; a susceptor positioned a lower portion in the process chamber and configured to allow the semiconductor substrate to be placed thereon; a shower head coupled to the process chamber in a horizontal direction between an upper surface of the susceptor and the process gas supply hole, and comprising a head gas hole passing therethrough from the upper surface to a lower surface, and being formed from a transparent material; a laser beam transmitting plate coupled horizontally to the process chamber above the process gas supply hole, and being formed from a transparent material; a substrate heating unit positioned above the laser beam transmitting plate, and irradiating a laser beam to the semiconductor substrate; and a gas supply unit configured to supply a process gas, which reacts with the silicon oxide film to convert it into a sublimable film, to the process gas supply hole.