

ABSTRACT

The present disclosure provides a gas distribution device and a semiconductor processing apparatus. The semiconductor processing apparatus includes a reaction chamber having a cover plate disposed at a top of the reaction chamber, with the cover plate provided with a gas inlet communicated with an interior of the reaction chamber; the gas distribution device is configured to be disposed below the cover plate, and includes: a gas distribution plate and at least one diffusion plate; the gas distribution plate is located below the gas inlet, a gas homogenizing chamber is formed between the gas distribution plate and the cover plate, and the gas distribution plate is provided with a plurality of gas distribution holes penetrating through the gas distribution plate along a plate thickness direction of the gas distribution plate; the at least one diffusion plate is disposed in the gas homogenizing chamber, and divides the gas homogenizing chamber into at least two gas homogenizing sub-chambers that are spaced apart along a vertical direction; each diffusion plate of the at least one diffusion plate is provided with a plurality of diffusion holes penetrating through the diffusion plate along a plate thickness direction of the diffusion plate; a gas homogenizing sub-chamber adjacent to the cover plate is communicated with the gas inlet; any two adjacent gas homogenizing sub-chambers are communicated with each other through the diffusion holes; and a gas homogenizing sub-chamber adjacent to the gas distribution plate is communicated with the interior of the reaction chamber through the gas distribution holes.