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ABSTRACT

A plasma processing apparatus comprises a processing vessel defined by an outer wall and having a stage for holding a substrate to be processed, an evacuation system coupled to the processing vessel, a plasma gas supply part for supplying plasma gas to an interior of the processing vessel, a microwave antenna provided on the processing vessel in correspondence to the substrate to be processed, and a process gas supply part provided between the substrate to be processed on the stage and the plasma gas supply part so as to face the substrate to be processed on the stage, wherein the process gas supply part comprises a plurality of first apertures for passing through plasma formed in the interior of the processing vessel, a process gas passage capable of connecting to a process gas source, a plurality of second apertures in communication with the process gas passage and a diffusion part provided opposite to the second aperture for diffusing process gas released from the second aperture.