

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0213019 A1

Jun. 27, 2024 (43) **Pub. Date:**

(54) SILICON CARBIDE WAFER MANUFACTURING APPARATUS

- (71) Applicants: DENSO CORPORATION, Kariya-city (JP); TOYOTA JIDOSHA KABUSHIKI KAISHA, Toyota-shi (JP); MIRISE Technologies Corporation, Nisshin-shi (JP)
- (72) Inventor: Hiroaki FUJIBAYASHI, Nisshin-shi (JP)
- (21) Appl. No.: 18/531,929
- (22) Filed: Dec. 7, 2023
- Foreign Application Priority Data (30)

Dec. 27, 2022 (JP) 2022-210956

Publication Classification

(51) Int. Cl. H01L 21/02 (2006.01)H01L 21/67 (2006.01)

U.S. Cl. CPC H01L 21/02378 (2013.01); H01L 21/0262 (2013.01); H01L 21/67098 (2013.01)

(57)ABSTRACT

In a silicon carbide wafer manufacturing apparatus, a cooling unit is capable of cooling a separation space to 400° C. or lower, and a supply pipe includes a dopant gas supply pipe through which an ammonia-based gas included in a reactant gas is to be supplied, a growth gas supply pipe through which a growth gas containing a silane-based gas and a chlorine-based gas and included in the reactant gas is to be supplied, and an inert gas supply pipe through which an inert gas included in the reactant gas is to be supplied between a portion of the separation space to which the ammonia-based gas is to be supplied and a portion of the separation space to which the chlorine-based gas is to be supplied.

