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(54) Title: SEMICONDUCTOR MANUFACTURING SYSTEM WITH GETTER SAFETY DEVICE

(57) Abstract

A semiconductor manufacturing system includes a getter-based gas purifier coupled in flow communication with a gas distribution network for a semiconductor fabrication facility. The gas distribution network supplies purified gas to at least one wafer processing chamber in the semiconductor fabrication facility. The gas purifier includes a getter column having a metallic vessel with an inlet, an outlet, and a containment wall extending between the inlet and the outlet. Getter material which purifies gas flowing therethrough by sorbing impurities therefrom is disposed in the vessel. A first temperature sensor is disposed in a top portion of the getter material. The first temperature sensor is located in a melt zone to detect rapidly the onset of an exothermic reaction which indicates the presence of excess impurities in the incoming gas to be purified. A second temperature sensor is disposed in a bottom portion of the getter material. The second temperature sensor is located in a melt zone to detect rapidly the onset of an exothermic reaction which indicates that excess impurities are being backfed into the getter column. First and second high melting point, nonmetallic liners are disposed in the vessel such that at least some of the top and bottom portions, respectively, of the getter material is separated from the containment wall of the vessel. A getter-based gas purifier, a method of making an integrated circuit device, and a method of protecting a getter column are also described.