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(54) Title: IN SITU GETTER PUMP SYSTEM AND METHOD ✓

(57) Abstract

A wafer processing system including a processing chamber, a low pressure pump coupled to the processing chamber for pumping noble and non-noble gases, a valve mechanism coupling a source of noble gas to the processing chamber, an in situ getter pump disposed within the processing chamber which pumps certain non-noble gases during the flow of the noble gas into the chamber, and a processing mechanism for processing a wafer disposed within the processing chamber. Preferably, the in situ getter pump can be operated at a number of different temperatures to preferentially pump different species of gas at those temperatures. A gas analyzer is used to automatically control the temperature of the getter pump to control the species of gases that are pumped from the chamber. A method for processing a wafer of the present invention includes the steps of placing a wafer within a processing chamber and sealing the chamber, flowing a noble gas into the chamber while simultaneously pumping the chamber with an external low pressure pump and with an in situ getter pump disposed within the chamber which pumps non-noble gases, and processing the wafer within the chamber while the noble gas continues to flow. The method also preferably includes the steps of monitoring the composition of the gas within the chamber and controlling the temperature of the getter material based upon the analysis of the composition.

