METHOD FOR RAPIDLY DETERMINING AN IMPURITY LEVEL IN A GAS SOURCE OR A GAS DISTRIBUTION SYSTEM

ABSTRACT

Provided is a novel method for rapidly determining an impurity level in a gas source. A gas source and a measurement tool are provided for measuring an impurity level in a gas flowing from the gas source. The measurement tool is in communication with the gas source through a sampling line. The sampling line has a gas inlet disposed upstream from a gas outlet. The sampling line is baked according to a baking strategy, such that when baking is terminated, a concentration profile of the impurity in the sampling line contains a first region and a second region. In the first region, extending from the gas inlet to a point downstream from the inlet, the vapor phase concentration of the impurity is less than the vapor phase concentration of the impurity in the gas entering the sampling line. In the second region, located downstream from the first region and extending to the gas outlet, the vapor phase concentration of the impurity is greater than the vapor phase concentration of the impurity in the gas entering the sampling line. A method for rapidly determining an impurity level in a gas distribution system which delivers gas to a point of use is also provided. Particular applicability is found in the semiconductor processing industry to measure impurities in gases delivered to processing tools.

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