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(54) Title: WAFER PROCESSING REACTOR HAVING A GAS FLOW CONTROL SYSTEM AND METHOD		
(57) Abstract A wafer processing system for delivering a processing gas and an inert gas to a chamber which includes a CVD processing region having a plurality of gas flow paths for conveying the gases to the chamber and exhausting them from the chamber. A flow control system is coupled to each of the exhaust gas flow paths and each of the process gas exhaust flow paths is separately controlled to maintain a constant rate of flow within each of the gas flow paths, independent of the accumulation of deposition byproducts. Utilization of a self-cleaning orifice allows a pressure differential measurement in a process exhaust line to measure flow. The wafer processing system is provided with load and unload regions surrounding the chamber(s), each having additional inert gas exhaust flow paths. A flow characteristic, preferably pressure differential across an orifice, of the gases in each of these regions is measured and a flow control unit is selectively adjusted to maintain a substantially constant exhaust flow rate from each of the regions, in order to compensate for any pressure imbalance across the chamber due to internal (thermal load) or external (environmental) asymmetry that would degrade the performance of an APCVD system.		