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(54) **Title:** SYSTEMS AND METHODS FOR DYNAMIC CONTROL OF COOLING FLUID FLOW IN AN EPITAXIAL REACTOR FOR SEMICONDUCTOR WAFER PROCESSING

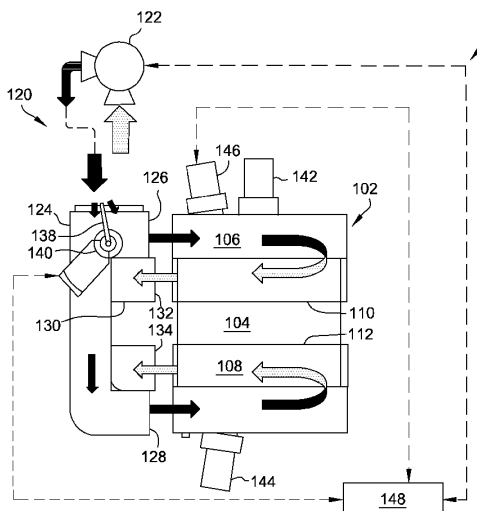


FIG. 1

(57) **Abstract:** An epitaxial reactor system includes a reactor, a cooling circuit, and a controller. The reactor includes a reaction chamber having an upper wall and a lower wall, an upper module positioned above the upper wall, and a lower module positioned below the lower wall. The cooling circuit includes a blower to circulate fluid within the upper module and the lower module and a damper selectively positioned to control an amount of fluid flow provided to each of the upper module and the lower module. The damper is coupled to a damper actuator that adjusts a position of the damper. The system further includes a controller configured to: receive epitaxial process information associated with the reactor, generate a blower output and a damper position output based on the epitaxial process information, transmit the blower output to the blower, and transmit the damper position output to the damper actuator.

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