APPARATUS FOR SPATIAL AND TEMPORAL CONTROL OF TEMPERATURE ON A SUBSTRATE

ABSTRACT

An apparatus for control of a temperature of a substrate has a temperaturecontrolled base, a heater, a metal plate, a layer of dielectric material. The heater is thermally coupled to an underside of the metal plate while being electrically insulated from the metal plate. A first layer of adhesive material bonds the metal plate and the heater to the top surface of the temperature controlled base. This adhesive layer is mechanically flexible, and possesses physical properties designed to balance the thermal energy of the heaters and an external process to provide a desired temperature pattern on the surface of the apparatus. A second layer of adhesive material bonds the layer of dielectric material to a top surface of the metal plate. This second adhesive layer possesses physical properties designed to transfer the desired temperature pattern to the surface of the apparatus. The layer of dielectric material forms an electrostatic clamping mechanism and supports the substrate.

Figure 7