

ABSTRACT

A COMPOSITE SHOWERHEAD ELECTRODE ASSEMBLY FOR A PLASMA PROCESSING APPARATUS

A showerhead electrode for a plasma processing apparatus includes an interface gel between facing surfaces of an electrode plate and a backing plate. The interface gel maintains thermal conductivity during lateral displacements generated during temperature cycling due to mismatch in coefficients of thermal expansion. The interface gel comprises, for example, a silicone based composite filled with aluminum oxide microspheres. The interface gel can conform to irregularly shaped features and maximize surface contact area between mating surfaces. The interface gel can be pre-applied to a consumable upper electrode.

FIG. 1A