

ABSTRACT OF THE DISCLOSURE

ELECTROSTATIC CHUCK AND METHOD OF MAKING SAME

An electrostatic chuck includes a ceramic structural element, at least one electrode disposed on the ceramic structural element, and a surface dielectric layer disposed over the at least one electrode, the surface layer activated by a voltage in the electrode to form an electric charge to electrostatically clamp a substrate to the electrostatic chuck. The surface dielectric layer comprises: (i) an insulator layer of amorphous alumina, of a thickness of less than about 5 microns, disposed over the at least one electrode; and (ii) a stack of dielectric layers disposed over the insulator layer. The stack of dielectric layers includes: (a) at least one dielectric layer including aluminum oxynitride; and (b) at least one dielectric layer including at least one of silicon oxide and silicon oxynitride.

Fig. 3