

CLAIMS

What is claimed is:

1. A showerhead assembly for a substrate processing system, comprising:
 - a back plate connected to a gas channel;
 - a face plate connected adjacent to a first surface of the back plate and including a gas diffusion surface;
 - one or more conductors; and
 - an electrode ~~arranged in one of~~ embedded within the back plate and the face plate and connected to the one or more conductors,wherein at least one of a bottom surface of the back plate and a top surface of the face plate includes a recess such that a gas plenum (i) is defined in the recess between the back plate and the face plate and below the electrode and (ii) is in fluid communication with the gas channel, and
wherein the back plate and the face plate are made of a non-metallic material.
2. The showerhead assembly of claim 1, further comprising
 - a stem connected to the back plate and defining the gas channel,wherein the stem is made of a non-metallic material, and
wherein the one or more conductors pass through the stem.
3. The showerhead assembly of claim 1, wherein one of:
 - the gas diffusion surface of the face plate includes spaced holes;
 - the gas diffusion surface of the face plate includes perforations; or
 - the gas diffusion surface of the face plate is porous.