**UPPER ELECTRODE BACKING MEMBER WITH PARTICLE REDUCING FEATURES**

**Abstract**

Components of a plasma processing apparatus includes a backing member with gas passages attached to an upper electrode with gas passages. To compensate for the differences in coefficient of thermal expansion between the metallic backing member and upper electrode, the gas passages are positioned and sized such that they are misaligned at ambient temperature and substantially concentric at an elevated processing temperature. Non-uniform shear stresses can be generated in the elastomeric bonding material, due to the thermal expansion. Shear stresses can either be accommodated by applying an elastomeric bonding material of varying thickness or using a backing member comprising of multiple pieces.

**Figure 1**