YTTRIA INSULATOR RING FOR USE INSIDE A PLASMA CHAMBER

A yttria insulator ring for use in a plasma processing apparatus is provided to minimize arcing between the apparatus and a ground extension, while also increasing a mean time between cleanings (MTBC). The yttria insulator ring may be located between a ground extension and a plasma generation zone, or gap, of the chamber of the apparatus, as well as between an edge ring and the ground extension. Compared to a quartz ring, the yttria insulator ring can also provide improved semiconductor substrate uniformity because of improved RF coupling as a result of decreased reactivity and increased dielectric constant.

Figure 1A