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(54) Title: PLASMA SOURCE DESIGN

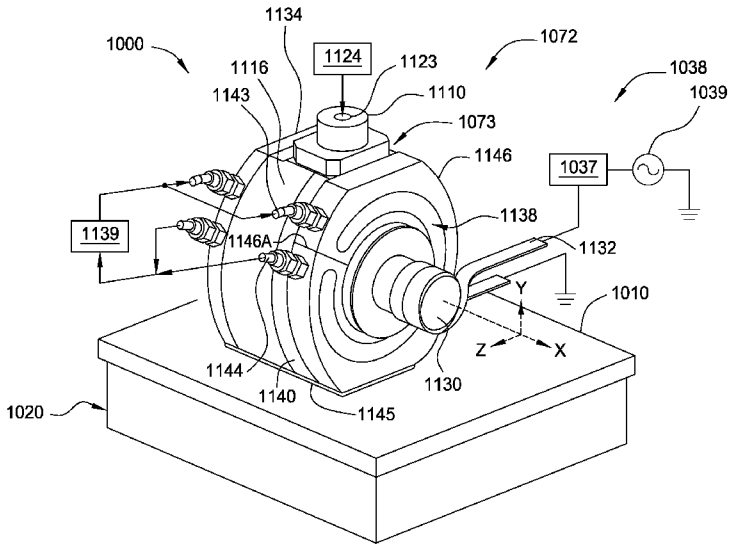


FIG. 2A

(57) Abstract: Embodiments of the present invention generally provide a plasma source apparatus, and method of using the same, that is able to generate radicals and/or gas ions in a plasma generation region that is symmetrically positioned around a magnetic core element by use of an electromagnetic energy source. In general, the orientation and shape of the plasma generation region and magnetic core allows for the effective and uniform coupling of the delivered electromagnetic energy to a gas disposed in the plasma generation region. In general, the improved characteristics of the plasma formed in the plasma generation region is able to improve deposition, etching and/or cleaning processes performed on a substrate or a portion of a processing chamber that is disposed downstream of the plasma generation region.

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