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(54) Title: POLYGONAL TOROIDAL PLASMA SOURCE

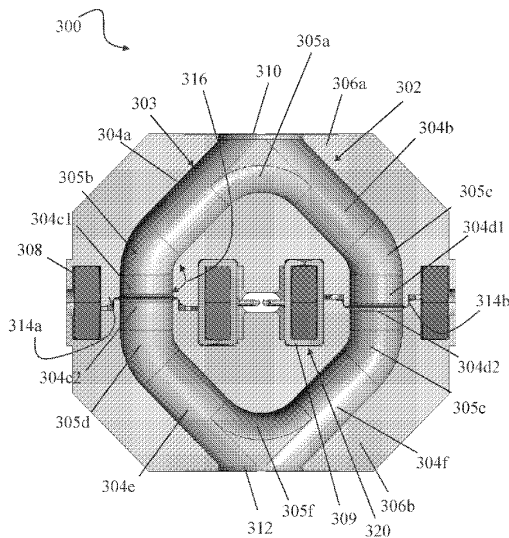


FIG. 3

(57) Abstract: A plasma source is provided that includes multiple metallic blocks. A toroidal plasma chamber and a transformer are substantially embedded in the metallic blocks. The toroidal plasma chamber includes a gas inlet configured to receive a process gas and a gas outlet configured to expel at least a portion of the process gas from the plasma chamber. The plasma chamber also includes multiple linear channel segments, multiple joints, an inlet joint, and an outlet joint machined into the metallic blocks. Each of the inlet joint, the outlet joint, and the joints connects a pair of the linear channel segments. The linear channel segments, the joints, the inlet joint and the outlet joint in combination form the toroidal plasma chamber. The gas inlet is disposed on the inlet joint. The gas outlet is disposed on the outlet joint. An inner angle of each of the joints is greater than about 90 degrees.

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