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(54) Title: ION IMPLANTATION SYSTEM AND RELATED METHODS

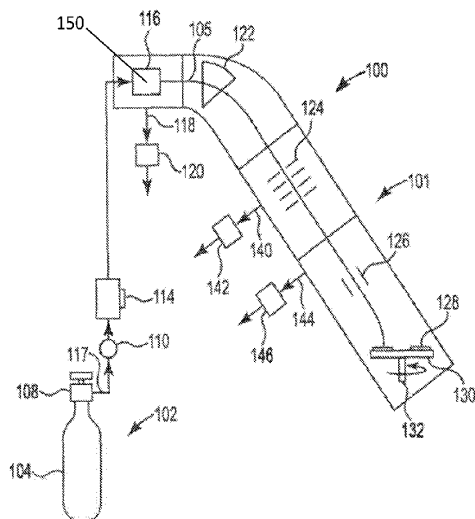


FIG. 1

(57) Abstract: An ion implantation system and related methods are provided herein. An ion implantation system comprises a gas supply assembly comprising at least one gas supply vessel in fluid communication with an arc chamber. The gas supply assembly is configured to supply a gas component comprising at least one of GeF_4 , GeH_4 , H_2 , a fluorine-containing gas, or any combination thereof. When the gas component is supplied from the at least one gas supply vessel to the arc chamber for implantation into a substrate, a beam current of Ge ions generated from the gas component is greater than a beam current of Ge ions generated from a control gas component.

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