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(54) **CONVERTIBLE PLASMA SOURCE AND METHOD**

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(57) **ABSTRACT**

A plasma source comprising a first hollow electrode and a second hollow electrode separated by a gap and a dielectric barrier of a constant width; wherein the plasma source is configured to selectively produce a plasma in either one of a first configuration and a second configuration; wherein, i) in the first configuration, a plasma-forming gas flows in the gap while a non plasma-forming gas flows within the first hollow electrode; and ii) in the second configuration, a plasma-forming gas flows within the first hollow electrode and a non plasma-forming gas flows within the gap. The method comprises selecting at least two gases of different breakdown voltages, injecting a first gas in a first electrode separated from a second hollow electrode by a gas gap of a constant width, injecting a second gas in the gas gap under an applied power.