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THE GILLETTE COMPANY, RENESAS ELECTRONICS
CORPORATION, RENESAS ELECTRONICS AMERICA, INC., ADVANCED MICRO DE
GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN MODULE ONE LL
GLOBALFOUNDRIES DRESDEN MODULE TWO LLC & CO. KG, TOSHIBA AMERICA
COMPONENTS, INC., TOSHIBA AMERICA INC., TOSHIBA AMERICA INFORMATION S
and TOSHIBA CORPORATION,
Petitioner,
v.
ZOND, LLC,
Patent Owner.

IPR2014-00861
IPR2014-01088
IPR2014-01089
Patent 6,086,652

Patent Owner's Demonstrative Exhibits

GlobalFoundries et al. v. Zond
IPR2014-00861, IPR2014-01088

'652 Patent – A System and Technique for Generating a Super-Ionized Plasma Having a High Density of Ions.

18. A method of generating a high-density plasma, the method comprising:

- a) generating an initial plasma and excited atoms from a volume of feed gas;
- b) transporting the initial plasma and excited atoms proximate to a cathode assembly; and
- c) super-ionizing the initial plasma proximate to the cathode assembly, thereby generating a high-density plasma.

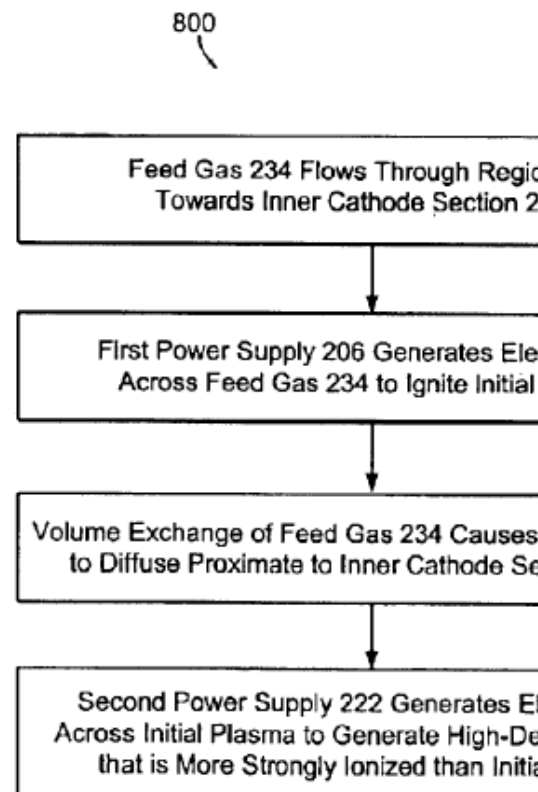


FIG. 16A

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'652 Patent

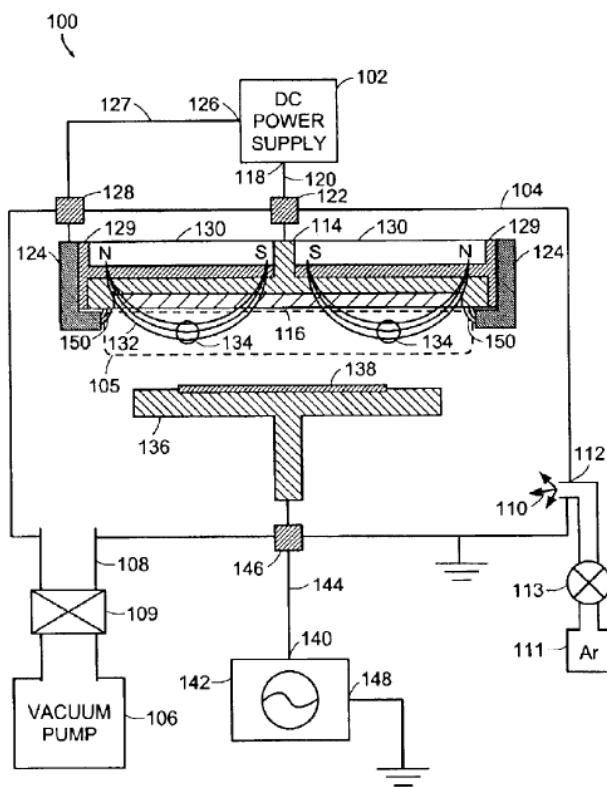


FIG. 1
PRIOR ART

In prior systems, such as that shown in the '652 patent, neutral gas in the chamber between electrodes 114 and 124 is ionized by applying a voltage across the electrodes 114 and 124 to create a plasma. In such systems, ions tend to concentrate in certain portions of the target 105.

If the ion concentration is relatively high, it can cause corresponding erosion non-uniformities in the target.

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- The uniformity of the plasma can be improved by increasing the power applied to the plasma, increasing the voltage across the electrodes, to thereby increase the ion density and disperse the charged particles.
- However, increasing plasma density and uniformity in this manner can significantly increase the risk of an undesirable electrical breakdown and arcing condition.

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'652 Patent

- The '652 patent generates a super-ionized, uniformly distributed plasma (one with a relatively uniform density of charged particles), which reduces the risk of arcing at high charge densities.
- Region 214 is designed to promote excitation of neutral atoms from a feed gas for transport into region 252, where the excited atoms are then ionized by the high power pulses applied to electrodes 202a, 226.

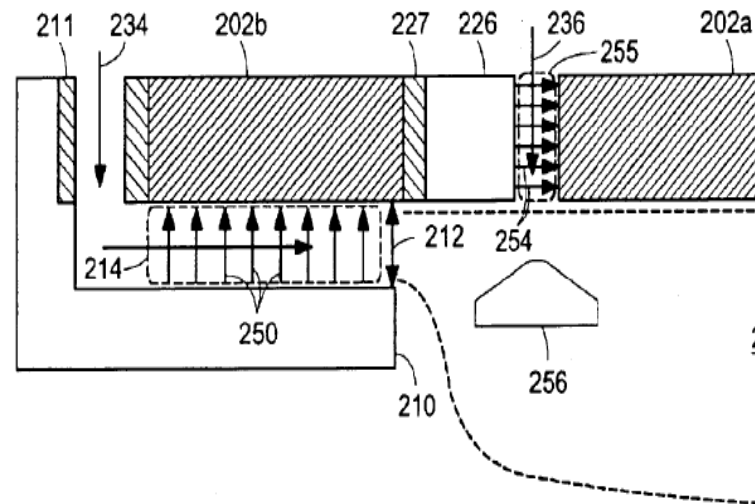


FIG. 2B

'652 Patent at 4:31-

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