

THE GILLETTE COMPANY and
FUJITSU SEMICONDUCTOR AMERICA, INC.,
Petitioner,

v.

ZOND, LLC,
Patent Owner.

IPR2014-00578
IPR2014-00604
Patent 6,896,775

Patent Owner's Demonstrative Exhibits

'775 Patent

(57)

ABSTRACT

Magnetically enhanced plasma processing methods and apparatus are described. A magnetically enhanced plasma processing apparatus according to the present invention includes an anode and a cathode that is positioned adjacent to the anode. An ionization source generates a weakly-ionized plasma proximate to the cathode. A magnet is positioned to generate a magnetic field proximate to the weakly-ionized plasma. The magnetic field substantially traps electrons in the weakly-ionized plasma proximate to the cathode. A power supply produces an electric field in a gap between the anode and the cathode. The electric field generates excited atoms in the weakly-ionized plasma and generates secondary electrons from the cathode. The secondary electrons ionize the excited atoms, thereby creating a strongly-ionized plasma. A voltage supply applies a bias voltage to a substrate that is positioned proximate to the cathode that causes ions in the plurality of ions to impact a surface of the substrate in a manner that causes etching of the surface of the substrate.

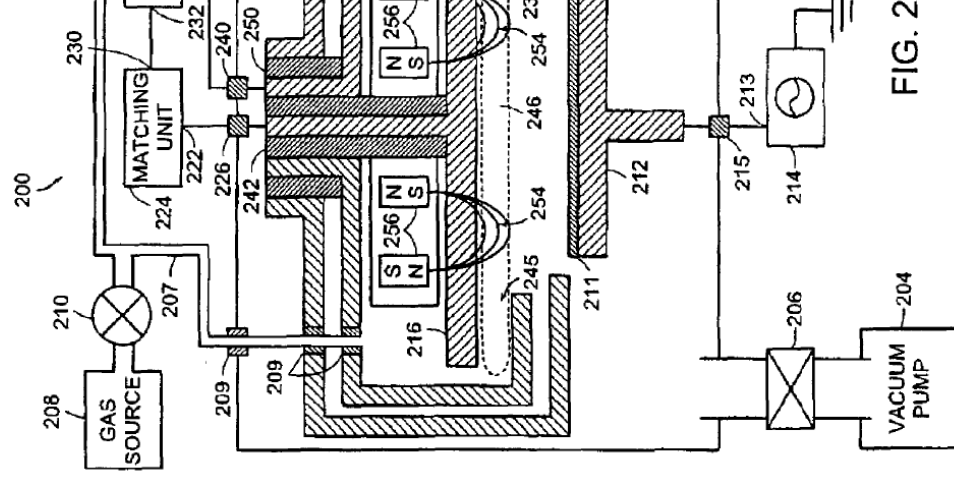


FIG. 2

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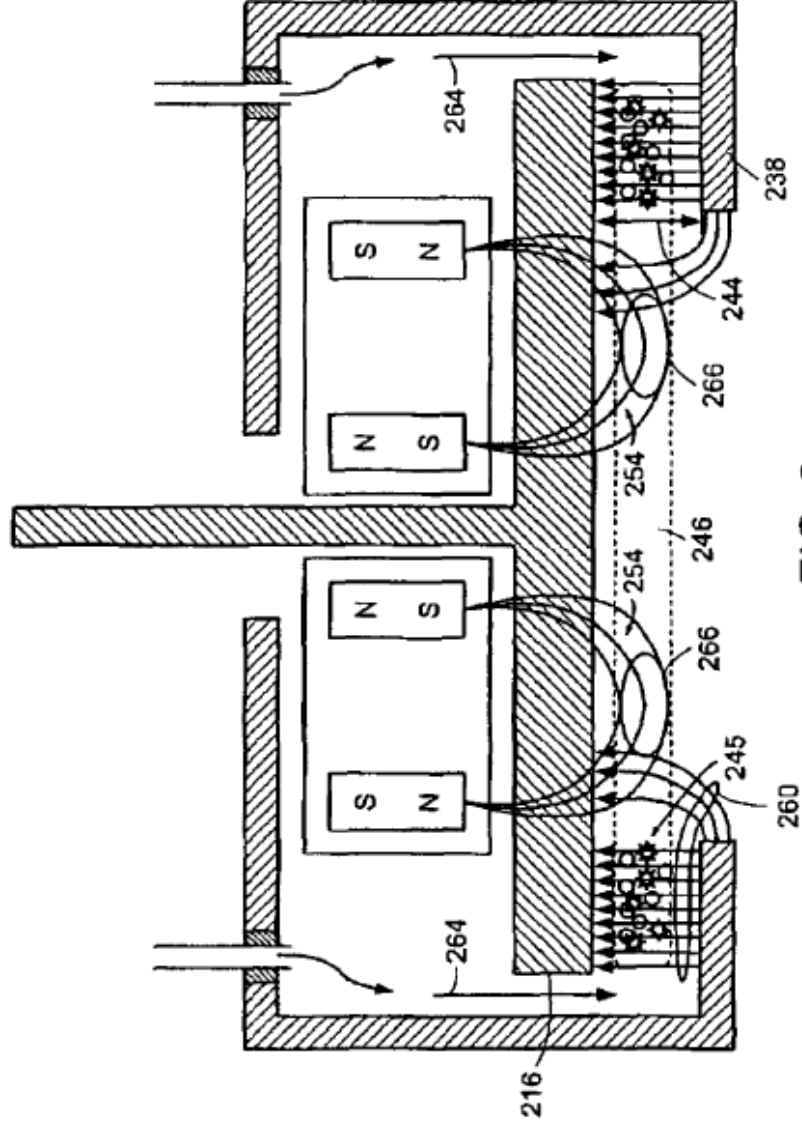


FIG. 3

Wang

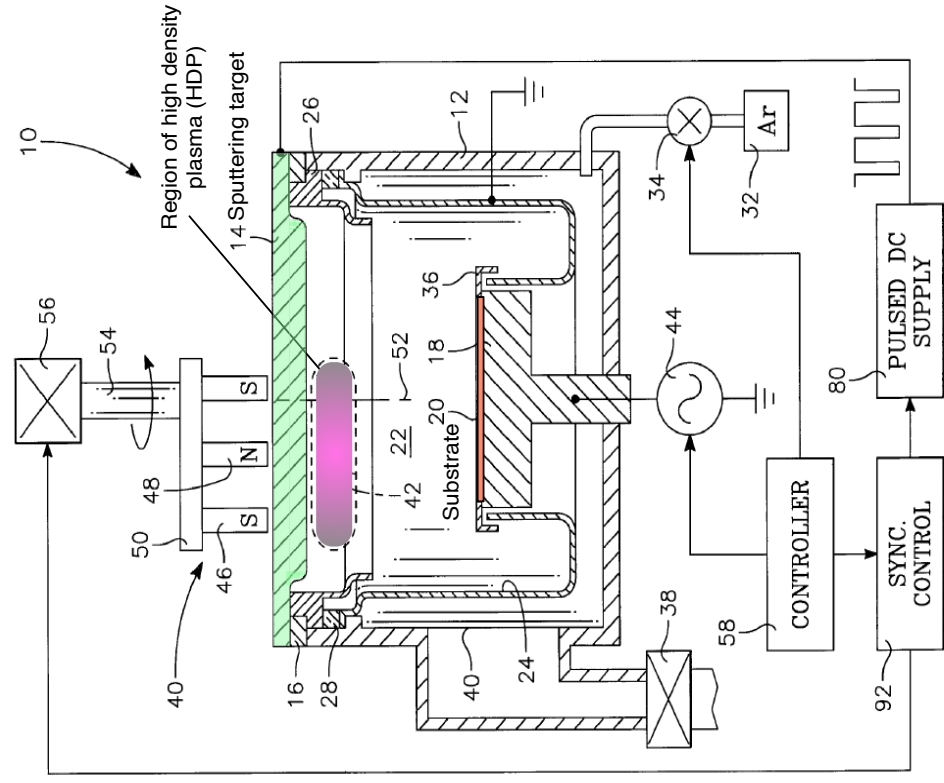


FIG. 1

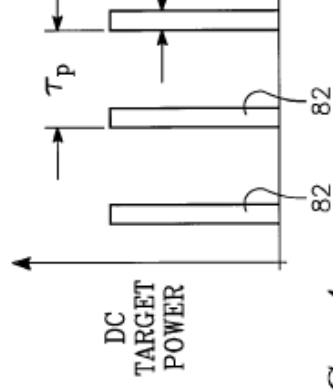


FIG. 4

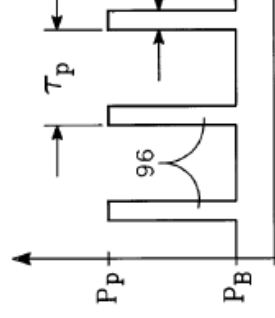


FIG. 6

Kudravetsev

$$\frac{\partial n_e}{\partial t} = n_1 n_e \beta_{1e} + n_2 n_e \beta_{2e} + n_2 n_e \beta_{eST} - \nabla \Gamma_e, \quad (1)$$

$$\frac{\partial n_2}{\partial t} = n_1 n_e k_{12} - n_2 n_e k_{21} - n_2 n_e \beta_{2e} - n_2 n_e \beta_{eST} - n_2 A_{21} \theta_{21} - \nabla \Gamma_y. \quad (2)$$

“a scale-independent parametric model”

-Ex. 2012 at 48:20-22.

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