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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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FUJITSU SEMICONDUCTOR AMERICA, INC.,
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CORPORATION, RENESAS ELECTRONICS AMERICA, INC.,
GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN
MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN
MODULE TWO LLC & CO. KG, TOSHIBA AMERICA ELECTRONIC
COMPONENTS, INC., TOSHIBA AMERICA INC., TOSHIBA
AMERICA INFORMATION SYSTEMS, INC.,
TOSHIBA CORPORATION, and
THE GILLETTE COMPANY,
Petitioners,

v.

ZOND, LLC,
Patent Owner

IPR2014-00807¹
Patent 7,604,716 B2

PETITIONER'S DEMONSTRATIVE EXHIBIT FOR ORAL ARGUMENT

¹ Cases IPR 2014-00846, IPR 2014-0974, and IPR 2014-01065 have been joined
with the instant proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

U.S. Patent No. 7,604,716:

Samsung Semiconductor Limited, and Fujitsu Semiconductor America, Inc., Advanced Micro Devices, Inc., Renesas Electronics Corporation, Renesas Electronics America, Inc., GlobalFoundries U.S., Inc., GlobalFoundries Dresden Module One LLC & Co. KG, GlobalFoundries Dresden Module Two LLC & Co. KG, Toshiba America Electronic Components, Inc., Toshiba America Inc., Toshiba America Information Systems, Inc., Toshiba Corporation, and the Gillette Company.

v.

Zond, LLC.

IPR2014-807 and IPR2014-808

GlobalFoundries U.S., Inc., GlobalFoundries Dresden Module One LLC & Co. KG, GlobalFoundries Dresden Module Two LLC & Co. KG, and the Gillette Company.

v.

Zond, LLC.

IPR2014-1099 and IPR2014-1100

June 12, 2015

Overview

Overview of the '716 Patent

Grounds Instituted for Review

Overview of Wang

Disputes for Independent Claims

- “Without developing an electrical breakdown condition”
(*claims 1, 14, 26, 33*)
- Wang + Kudryavtsev (*claims 14, 26*)
- Cathode “adjacent” to anode (*claim 26*)

Disputes for Dependent Claims

The '716 Patent



1) Patent No.: **US 7,604,716 B2**
 2) Date of Patent: ***Oct. 20, 2009**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

(Continued)

4) METHODS AND APPARATUS FOR GENERATING HIGH-DENSITY PLASMA

(51) Int. Cl. (2006.01)
C23C 14/35 (2006.01)
C23C 16/00 (2006.01)
 (52) U.S. Cl. 204/192.12; 204/298.08;
 204/298.06; 204/298.19; 315/111.21; 315/111.41;
 118/723 R; 118/723 E
 (58) Field of Classification Search 204/192.12,
 204/298.08, 298.06, 298.19; 118/723 R,
 118/723 E; 315/111.21, 111.41
 See application file for complete search history.

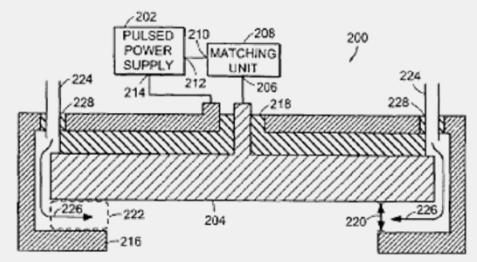
of Physics.
 (Continued)
 Primary Examiner—Rodney G McDonald
 (74) Attorney, Agent, or Firm—Kurt Rauschenbach,
 Rauschenbach Patent Law Group, LLC

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(57) ABSTRACT
 Methods and apparatus for generating a strongly-ionized plasma are described. An apparatus for generating a strongly-ionized plasma according to the present invention includes an anode and a cathode that is positioned adjacent to the anode to form a gap there between. An ionization source generates a weakly-ionized plasma proximate to the cathode. A power supply produces an electric field in the 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 the strongly-ionized plasma.
 33 Claims, 13 Drawing Sheets



UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. 7,604,716 B2
 APPLICATION NO. 10/897257
 DATED October 20, 2009
 INVENTOR(S) Chistyakov

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page please add the following information to the Patent:

Item (63)
 Related U.S. Application Data
 Continuation of USSN 10/065,629, filed November 4, 2002, now U.S. Patent No. 6,853,142

Item (63)
 Related U.S. Application Data
 Continuation of USSN 10/065,629, filed November 4, 2002, now U.S. Patent No. 6,853,142

Signed and Sealed this
 Fifth Day of January, 2010

David J. Kappos
 Director of the United States Patent and Trademark Office

The '716 Patent – Fig. 2A

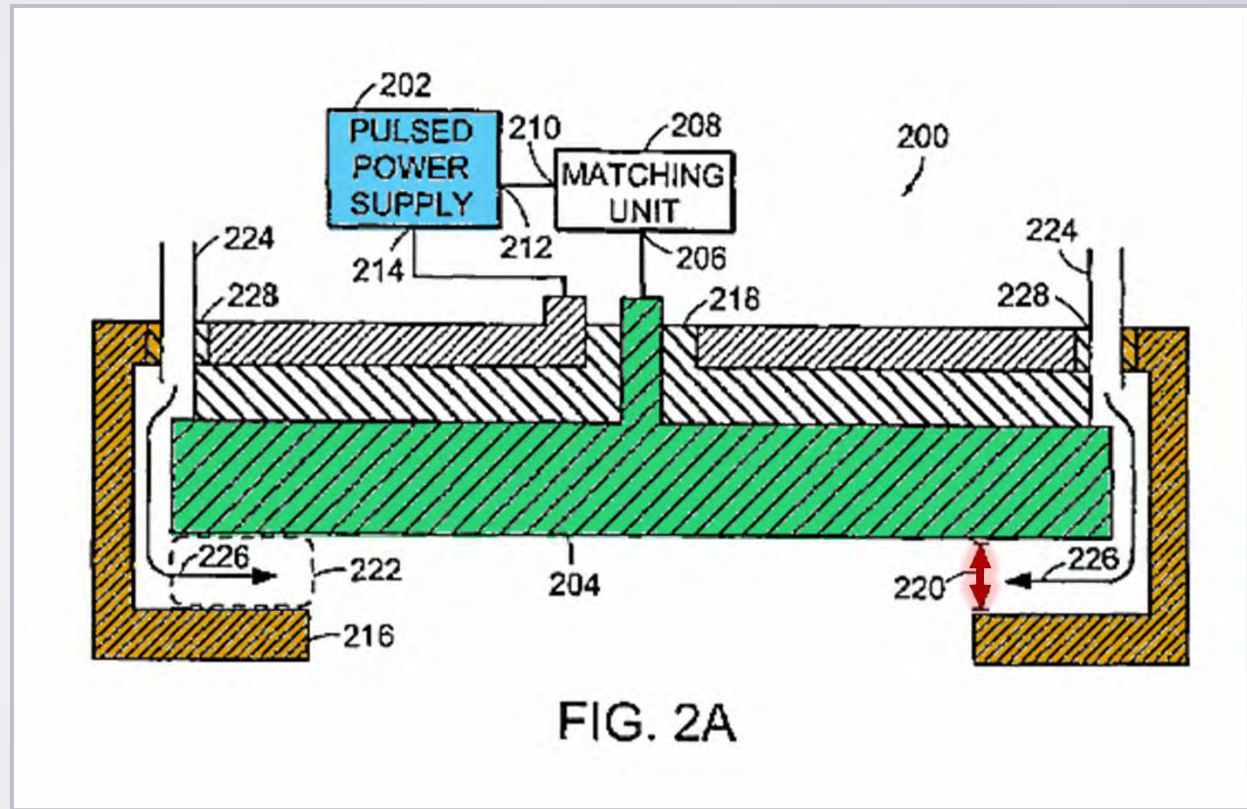
thode (204)

ode (216)

ip (220)

lised power supply

02)



'716 Patent, Fig. 2A

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