

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJITSU SEMICONDUCTOR LIMITED,
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,
Petitioners,

v.

ZOND, LLC,
Patent Owner

IPR2014-00807¹
Patent 7,604,716 B2

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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

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II. CLAIM CONSTRUCTION 1

III. RESPONSE TO ARGUMENTS 2

 A. A skilled person would have found it obvious to combine Wang and Kudryavtsev. 2

 B. Wang in view of Kudryavtsev teaches generating/forming “a strongly-ionized plasma without developing an electrical breakdown condition in the chamber” (Claims 14 and 26). 6

 C. Wang in view of Kudryavtsev teaches “a cathode that is positioned adjacent to the anode” (Claim 26). 11

 D. Wang in view of Kudryavtsev teaches “wherein the anode and the cathode form a gap there between” (Claim 28). 15

 E. Wang in view of Kudryavtsev teaches “wherein a dimension of the gap between the anode and the cathode is chosen to increase an ionization rate of the excited atoms in the weakly-ionized plasma” (Claim 29). 16

 F. Wang in view of Kudryavtsev teaches “at least one of a rise time and magnitude of the electrical pulse ... is selected to increase a density of the weakly-ionized plasma” (Claim 16). 20

 G. Wang in view of Kudryavtsev teaches “at least one of a rise time and magnitude of the electrical pulse ... is selected to excite atoms in the weakly-ionized plasma to generate secondary electrons that increase an ionization rate of the weakly-ionized plasma” (Claim 17) and “at least one of a rise time and an amplitude of the electric field is chosen to increase an ionization rate of the excited atoms in the weakly-ionized plasma” (Claim 30). 23

H. Wang in view of Kudryavtsev render obvious Claims 15, 18, 25, 27,
31, and 32..... 25

IV. CONCLUSION.....25

TABLE OF AUTHORITIES

CASES

Ex parte Liebich,

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REGULATIONS

37 C.F.R. § 42.231

PETITIONER'S EXHIBIT LIST

April 30, 2015

Exhibit	Description
1201	U.S. Patent No. 7,604,716 ("716 Patent")
1202	Kortshagen Declaration ("Kortshagen Decl.")
1203	D.V. Mozgrin, <i>et al</i> , <u>High-Current Low-Pressure Quasi-Stationary Discharge in a Magnetic Field: Experimental Research</u> , Plasma Physics Reports, Vol. 21, No. 5, pp. 400-409, 1995 ("Mozgrin")
1204	U.S. Pat. No. 6,413,382 ("Wang")
1205	A. A. Kudryavtsev and V.N. Skerbov, <u>Ionization relaxation in a plasma produced by a pulsed inert-gas discharge</u> , Sov. Phys. Tech. Phys. 28(1), pp. 30-35, January 1983 ("Kudryavtsev")
1206	U.S. Pat. No. 6,853,142 ("142 Patent")
1207	File History for U.S. Pat. No. 7,604,716, Office Action dated March 27, 2008 ("03/27/08 Office Action")
1208	File History for U.S. Pat. No. 7,604,716, Response dated September 24, 2008 ("09/24/08 Response")
1209	File History for U.S. Pat. No. 7,604,716, Notice of Allowance dated June 11, 2009 ("06/11/09 Allowance")
1210	European Patent Application 1560943, Response of April 21, 2008 ("04/21/08 Response in EP 1560943")
1211	U.S. Patent No. 7,147,759 ("759 Patent")
1212	File History for U.S. Pat. No. 7,147,759, Response dated May 2, 2006 ("05/02/06 Response of '759 Patent File History")
1213	Plasma Etching: An Introduction, by Manos and Flamm, Academic Press (1989) ("Manos")
1214	The Materials Science of Thin Films, by Ohring M., Academic Press (1992) ("Ohring")

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