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'775 PATENT -- CLAIMS 30-37

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT: 6,896,775

INVENTOR: ROMAN CHISTYAKOV

FILED: OCTOBER 29, 2002

ISSUED: MAY 24, 2005

TITLE: HIGH-POWER PULSED MAGNETICALLY ENHANCED
PLASMA PROCESSING

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**DECLARATION OF RICHARD DEVITO REGARDING
U.S. PATENT NO. 6,896,775**

I, Richard DeVito, declare as follows:

1. My name is Richard DeVito.
2. I received my B.S. in Physics from Suffolk University, *cum laude* in 1982. I received my M.S. in Experimental Solid State Physics from Syracuse University in 1986.

3. I am the Founder and President of VAECO Inc. I have been the Director at the “Kostas” Facility for Microfabrication and Nanotechnology at Northeastern University, since October 2005.

4. Between 1987 and 1994, I was a Physical Scientist and then Senior Physical Scientist at Litton-Itek Optical Systems. I was a Senior Process Engineer from 1994-1995, and then a Project / Process Engineer from 1995 -1997 at The Gillette Co. Between 1997 and 2000, I was a Sr. Project Engineer at Corning/OCA/NetOptics. Between 2000 and 2001, I was a Director of thin film processing at Opnetics Corp. Between 2001 and 2002, I was a Director of thin film processing at Unaxis Corp. Between August 2002 and October 2003, I was a Process Manager at Nexx Systems. Between October 2003 and March 2004, I was a consultant at Fluens Corp. I am also a co-founder of Fluens Corp. Between March 2004 and October 2005, I was a Principal Process Development Fab Engineer at Aegis Semiconductor.

5. Thus, for over fifteen years, I have been focused on using plasmas to deposit thin films, and I have worked with a wide range of different equipment for working with many different materials.

6. I make this declaration in my personal capacity and not on behalf of Northeastern University.

7. A copy of my latest *curriculum vitae* (CV) is attached as Appendix A.

8. I have been retained by the Gillette Company (“Gillette” or “Petitioner”) as an expert in the field of plasma technology and sputtering to provide my opinions regarding U.S. Patent No. 6,896,775 (the “’775 patent”) (Ex. 1101).

9. I am being compensated at my normal consulting rate of \$250/hour for my time. My compensation is not dependent on and in no way affects the substance of my statements in this Declaration.

10. I have no financial interest in the Petitioner. I similarly have no financial interest in the ’775 patent, and have had no contact with the named inventor of the ’775 patent.

11. I have reviewed the specification, claims, and file history of the ’775 patent.

12. I have also reviewed the publications cited in this declaration, including:

- D.V. Mozgrin, *et al.*, High-Current Low-Pressure Quasi-Stationary Discharge in a Magnetic Field: Experimental Research, Plasma Physics Reports, Vol. 21, No. 5, 1995 (“Mozgrin” (Ex. 1102)).

- A. A. Kudryavtsev, *et al.*, Ionization relaxation in a plasma produced by a pulsed inert-gas discharge, Sov. Phys. Tech. Phys. 28(1), January 1983 (“Kudryavtsev” (Ex. 1103))
- Lantsman, U.S. Pat. No. 6,190,512 (“Lantsman” (Ex. 1104))
- D.V. Mozgrin, High-Current Low-Pressure Quasi-Stationary Discharge in a Magnetic Field: Experimental Research, Thesis at Moscow Engineering Physics Institute, 1994 (“Mozgrin Thesis” (Ex. 1105)), which is prior art under §102(b). Ex. 1105 is a certified English translation of the original Mozgrin Thesis, attached as Ex. 1106. A copy of the catalogue entry for the Mozgrin Thesis at the Russian State Library is attached as Ex. 1107.
- Wang, U.S. Pat. No. 6,413,382 (“Wang” (Ex. 1108)).
- Gopalraja, U.S. Pat. No. 6,277,249 (Ex. 1109).
- Bobbio, U.S. Pat. No. 5,045,166 (Ex. 1110).
- Thornton, J. and Hoffman, D.W. Stress related effects in thin films, Thin Solid Films, 171, 1989, 5-31 (Ex. 1112).

- N. Savvides and B. Window, Unbalanced magnetron ion-assisted deposition and property modification of thin films, J. Vac. Sci. Technol. A 4 , 504, 1986 (Ex. 1113).
- Grove, T.C, Arcing problems encountered during sputter deposition of aluminum, White Papers, ed: Advanced Energy, 2000 (Ex. 1114).
- Sellers, J., Asymmetric bipolar pulsed DC: the enabling technology for reactive PVD, Surface & Coatings Technology, vol. 98, issue 1-3, January, 1998 (Ex. 1115).
- Rossnagel, S. M., & Hopwood, J., Magnetron sputter deposition with high levels of metal ionization, Applied Physics Letters, 63(24), 3285-3287, 1993 (Ex. 1116).

13. I believe that the disclosure of each of these publications, read in the light of a person of ordinary skill in the field, provides sufficient information for someone in the field to make and use the plasma generation systems and perform the processes that are described in the above publications.

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