

EXHIBIT A.03
U.S. Patent No. 7,147,759

References cited herein:

- U.S. Patent No. 7,147,759 (“759 Patent”)
- 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”)
- 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”)
- 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”)
- Yu. P. Raizer, Gas Discharge Physics, Springer, 1991 (“Raizer”)

Claims 4, 21, 44, 47, and 49	Mozgrin in view of Kudryavtsev and Mozgrin Thesis
<p>[1pre.] A magnetically enhanced sputtering source comprising:</p>	<p>The combination of Mozgrin with Kudryavtsev discloses a magnetically enhanced sputtering source.</p> <p>Mozgrin 403, right col, ¶4 (“Regime 2 was characterized by intense cathode sputtering...”)</p> <p>Mozgrin at Fig. 1</p>

EXHIBIT A.03
U.S. Patent No. 7,147,759

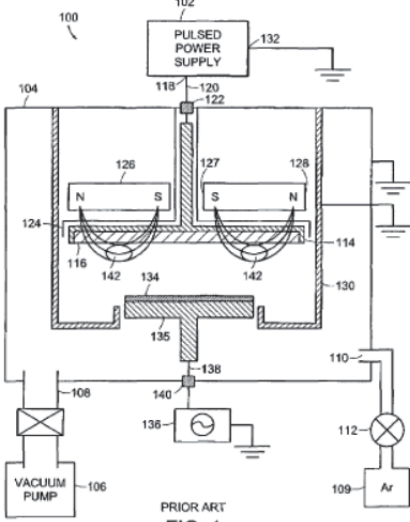
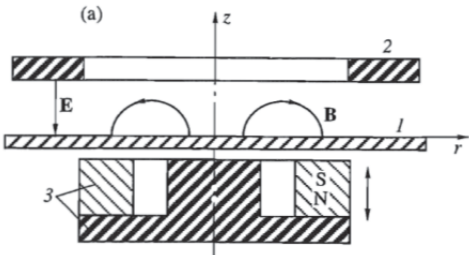
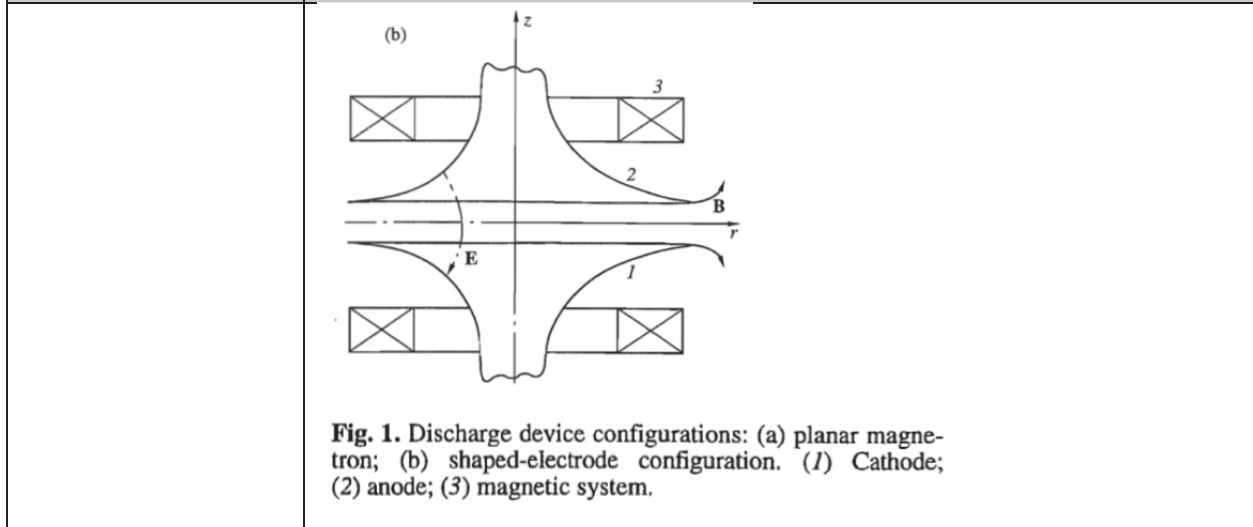
<p>Claims 4, 21, 44, 47, and 49</p>	<p align="center">Mozgrin in view of Kudryavtsev and Mozgrin Thesis</p>
	<p>Fig. 1. Discharge device configurations: (a) planar magnetron; (b) shaped-electrode configuration. (1) Cathode; (2) anode; (3) magnetic system.</p>
<p>[1a.] an anode;</p>	<p>The combination of Mozgrin with Kudryavtsev discloses an anode. ‘759 Patent at Fig. 1</p>  <p align="center">PRIOR ART FIG. 1</p> <p>‘759 Patent at Fig. 1 (“FIG. 1 illustrates a cross-sectional view of a known magnetron sputtering apparatus having a pulsed power source.”) ‘759 Patent at 3:40-41 (“an anode 130 is positioned in the vacuum chamber 104 proximate to the cathode assembly.”) Mozgrin at Fig. 1</p>  <p align="center">(a)</p>

EXHIBIT A.03
U.S. Patent No. 7,147,759

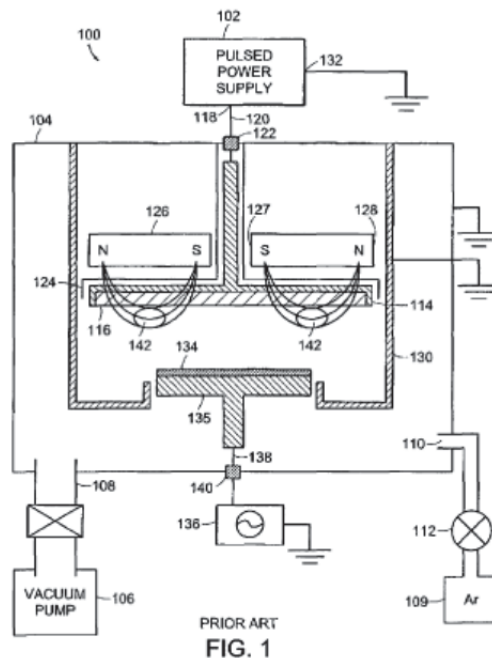
<p>Claims 4, 21, 44, 47, and 49</p>	<p>Mozgrin in view of Kudryavtsev and Mozgrin Thesis</p>
--------------------------------------------	-----------------------------------------------------------------



[1b.] a cathode assembly that is positioned adjacent to the anode, the cathode assembly including a sputtering target;

The combination of Mozgrin with Kudryavtsev discloses a cathode assembly that is positioned adjacent to the anode, the cathode assembly including a sputtering target.

‘759 Patent at Fig. 1



‘759 Patent at 3:10-12 (“FIG. 1 illustrates a cross-sectional view of a known magnetron sputtering apparatus having a pulsed power source.”)

‘759 Patent at 3:23-24 (“magnetron sputtering apparatus 100 also includes a cathode assembly 114 having a target material 116.”)

EXHIBIT A.03
U.S. Patent No. 7,147,759

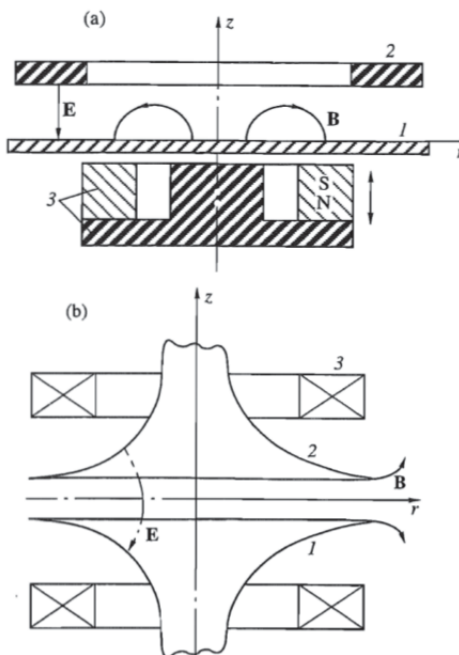
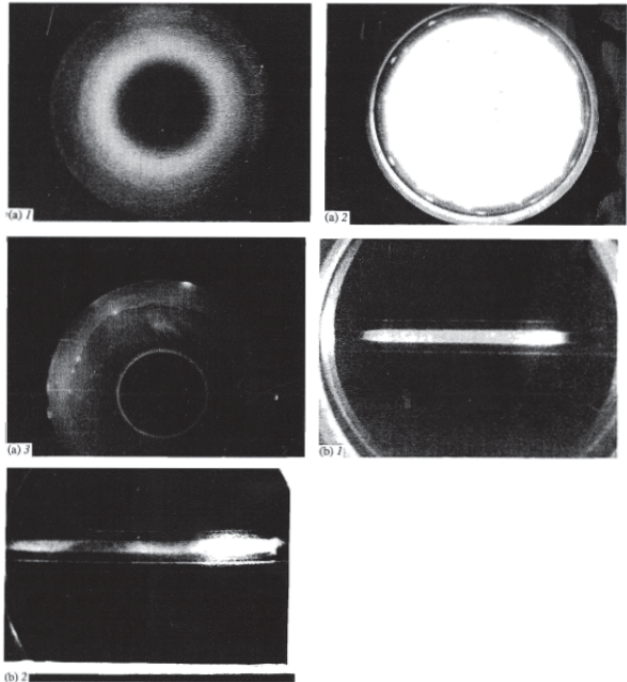
<p style="text-align: center;">Claims 4, 21, 44, 47, and 49</p>	<p style="text-align: center;">Mozgrin in view of Kudryavtsev and Mozgrin Thesis</p>
	<p>Mozgrin at 403, right col, ¶ 4 (“Regime 2 was characterized by intense cathode sputtering...”).</p> <p>Mozgrin at 403, right col, ¶ 4 (“...The pulsed deposition rate of the cathode material...”).</p> <p>Mozgrin at Fig. 1</p>  <p>Fig. 1. Discharge device configurations: (a) planar magnetron; (b) shaped-electrode configuration. (1) Cathode; (2) anode; (3) magnetic system.</p>
<p>[1c.] an ionization source that generates a weakly-ionized plasma proximate to the anode and the cathode assembly;</p>	<p>The combination of Mozgrin with Kudryavtsev discloses an ionization source that generates a weakly-ionized plasma proximate to the anode and the cathode assembly.</p> <p>‘759 Patent at 6:30-32 (“The weakly-ionized plasma is also referred to as a pre-ionized plasma.”)</p> <p>‘759 Patent at claim 32 (“wherein the peak plasma density of the weakly-ionized plasma is less than about 10^{12} cm⁻³”).</p> <p>Mozgrin at 401, right col, ¶2 (“For pre-ionization, we used a stationary magnetron discharge; the discharge current ranged up to 300 mA.... We found out that only the regimes with magnetic field strength not lower than 400 G provided the initial plasma density in the $10^9 - 10^{11}$ cm⁻³ range.”). (emphasis added).</p> <p>Mozgrin at 401, left col, ¶ 1 (“The [plasma] discharge had an annular</p>

EXHIBIT A.03
U.S. Patent No. 7,147,759

<p align="center">Claims 4, 21, 44, 47, and 49</p>	<p align="center">Mozgrin in view of Kudryavtsev and Mozgrin Thesis</p>
	<p>shape and was adjacent to the cathode.”). (emphasis added)</p> <p>Mozgrin at 402, right col, ¶2 (“Figure 3 shows typical voltage and current oscillograms.... Part I in the voltage oscillogram represents the voltage of the stationary discharge (pre-ionization stage).”).</p> <p>Mozgrin at Fig. 6</p>  <p>Fig. 6. High-current quasi-stationary discharge regimes. (a) planar magnetron: (1) high-current magnetron regime ($p = 10^{-1}$ torr, Ar, $I_d = 70$ A, $U_d = 900$ V); (2) high-current diffuse regime ($p = 10^{-1}$ torr, Ar, $I_d = 700$ A, $U_d = 80$ V); (3) arc regime ($p = 10^{-1}$ torr, Ar, $I_d = 1000$ A, $U_d = 45$ V). (b) Shaped-electrode system: (1) high-current diffuse regime ($p = 10^{-1}$ torr, Ar, $I_d = 1000$ A, $U_d = 45$ V); (2) contracted arc regime ($p = 10^{-1}$ torr, Ar, $I_d = 1500$ A, $U_d = 50$ V).</p>
<p>[1d.] a magnet that is positioned to generate a magnetic field proximate to the weakly-ionized plasma, the magnetic field substantially trapping electrons in the weakly-ionized plasma proximate to the sputtering target;</p>	<p>The combination of Mozgrin with Kudryavtsev discloses a magnet that is positioned to generate a magnetic field proximate to the weakly-ionized plasma, the magnetic field substantially trapping electrons in the weakly-ionized plasma proximate to the sputtering target.</p> <p>‘759 Patent at 3:10-12 (“FIG. 1 shows a cross-sectional view of a known magnetron sputtering apparatus 100...” that has a magnet 126.”)</p> <p>‘759 Patent at 4:4-10 [<i>describing the prior art Fig. 1</i>] (“The electrons, which cause ionization, are generally confined by the magnetic fields produced by the magnet 126. The magnetic confinement is strongest in a confinement region 142....”)</p> <p>Mozgrin at 401, left col, ¶ 1 (“The electrodes were immersed in a</p>

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.