

**EXHIBIT A.01**  
**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”)

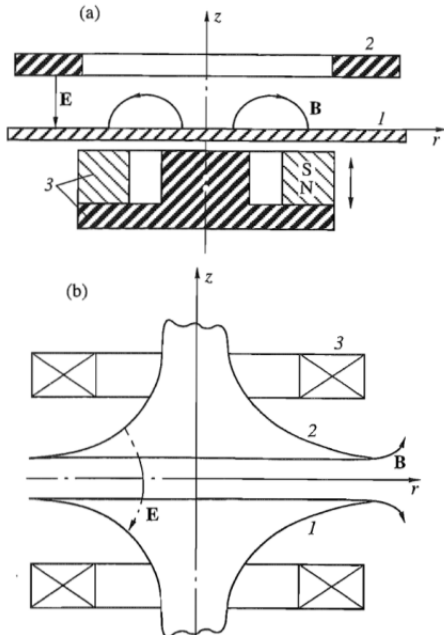
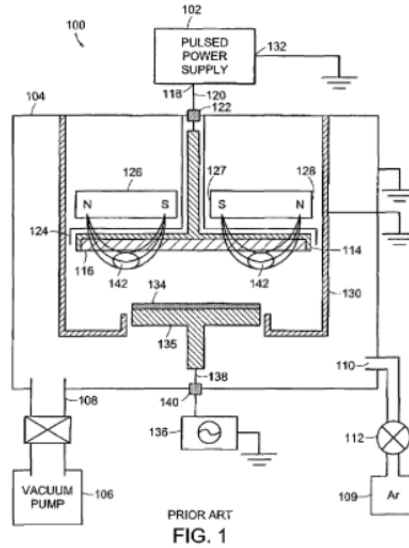
| Claims 1-3, 5-10, 13-16, 18-20, 22-34, 37, 40-43 and 45-46, 48, 50   | Mozgrin in view of Kudryavtsev   |
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| <p>[1pre.] A magnetically enhanced sputtering source comprising:</p> | <p>The combination of Mozgrin with Kudryavtsev discloses a magnetically 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>  <p><b>Fig. 1.</b> 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.</p>   |

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Claims 1-3, 5-10, 13-16,  
18-20, 22-34, 37, 40-43  
and 45-46, 48, 50

Mozgrin in view of Kudryavtsev

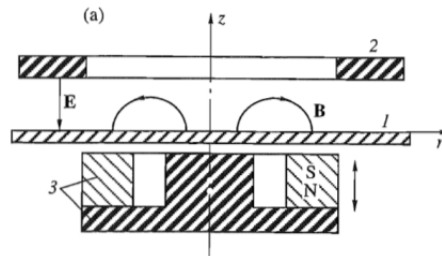
'759 Patent at Fig. 1



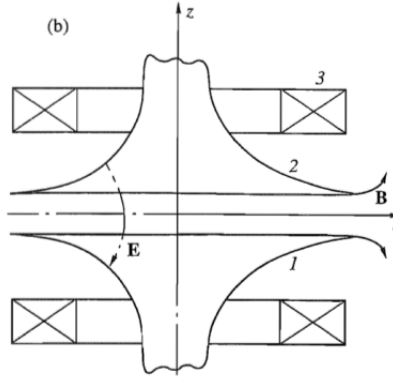
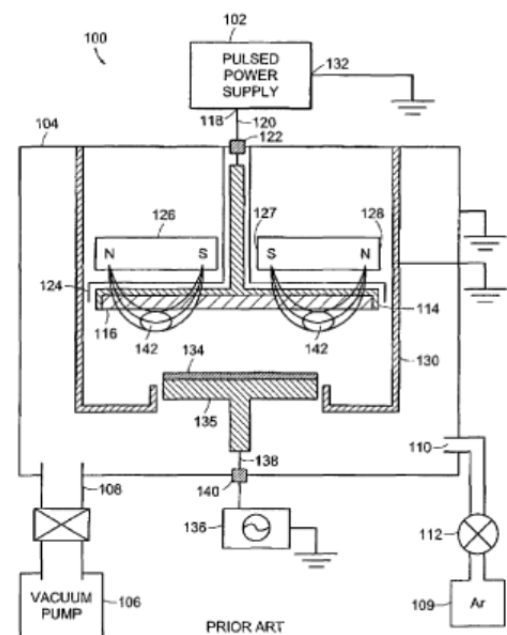
'759 Patent at Fig. 1 ("FIG. 1 illustrates a cross-sectional view of a known magnetron sputtering apparatus having a pulsed power source.")

'759 Patent at 3:40-41 ("an anode 130 is positioned in the vacuum chamber 104 proximate to the cathode assembly.")

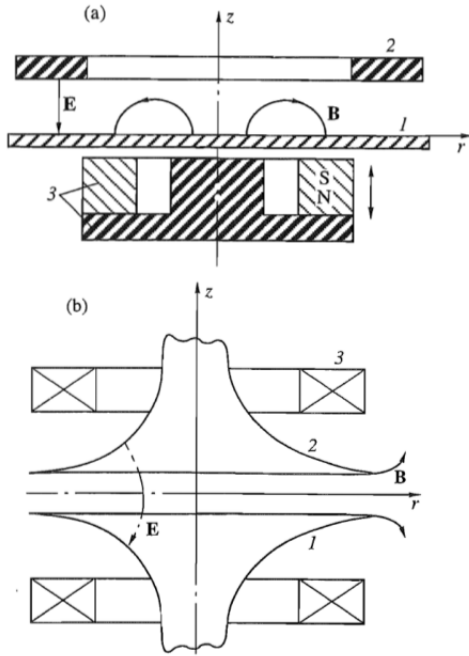
Mozgrin at Fig. 1



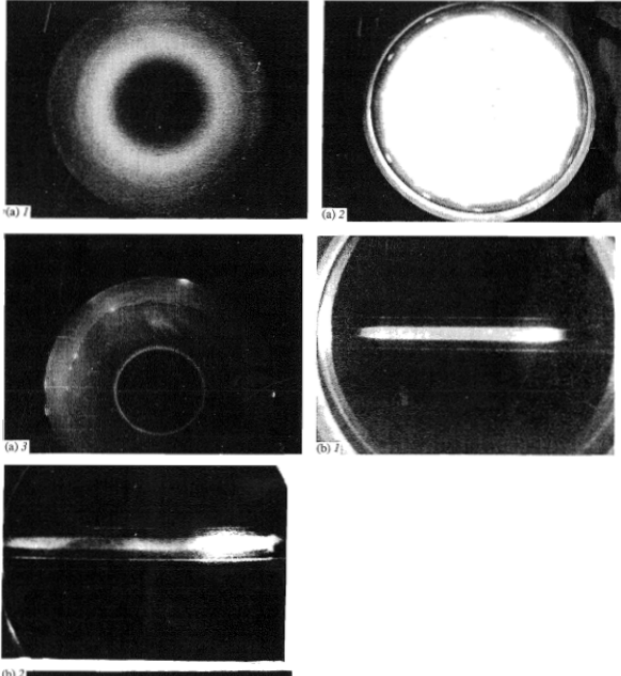
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| <p><b>Claims 1-3, 5-10, 13-16, 18-20, 22-34, 37, 40-43 and 45-46, 48, 50</b></p>  | <p align="center"><b>Mozgrin in view of Kudryavtsev</b></p>  |
|   |  <p><b>Fig. 1.</b> Discharge device configurations: (a) planar magnetron; (b) shaped-electrode configuration. (1) Cathode; (2) anode; (3) magnetic system.</p>  |
| <p>[1b.] a cathode assembly that is positioned adjacent to the anode, the cathode assembly including a sputtering target;</p> | <p>The combination of Mozgrin with Kudryavtsev discloses a cathode assembly that is positioned adjacent to the anode, the cathode assembly including a sputtering target.</p> <p>‘759 Patent at Fig. 1</p>  <p align="center">PRIOR ART<br/> <b>FIG. 1</b></p> <p>‘759 Patent at 3:10-12 (“FIG. 1 illustrates a cross-sectional view of a known magnetron sputtering apparatus having a pulsed power source.”)</p> |

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| <p><b>Claims 1-3, 5-10, 13-16, 18-20, 22-34, 37, 40-43 and 45-46, 48, 50</b></p>  | <p align="center"><b>Mozgrin in view of Kudryavtsev</b></p>   |
|---|---|
|   | <p>‘759 Patent at 3:23-24 (“magnetron sputtering apparatus 100 also includes a cathode assembly 114 having a target material 116.”)</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><b>Fig. 1.</b> 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 <math>10^{12}</math> cm<sup>-3</sup>”).</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</p> |

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| <p><b>Claims 1-3, 5-10, 13-16, 18-20, 22-34, 37, 40-43 and 45-46, 48, 50</b></p>   | <p align="center"><b>Mozgrin in view of Kudryavtsev</b></p>  |
|--|--|
|  | <p>field strength not lower than 400 G provided the initial plasma density in the <math>10^9 - 10^{11} \text{ cm}^{-3}</math> range.”). (emphasis added).</p> <p>Mozgrin at 401, left col, ¶ 1 (“The [plasma] discharge had an annular 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><b>Fig. 6.</b> High-current quasi-stationary discharge regimes. (a) planar magnetron: (1) high-current magnetron regime (<math>p = 5 \times 10^{-3}</math> torr, Ar, <math>I_d = 70 \text{ A}</math>, <math>U_d = 900 \text{ V}</math>); (2) high-current diffuse regime (<math>p = 10^{-1}</math> torr, Ar, <math>I_d = 700 \text{ A}</math>, <math>U_d = 80 \text{ V}</math>); (3) arc regime (<math>p = 10^{-1}</math> torr, Ar, <math>I_d = 1000 \text{ A}</math>, <math>U_d = 45 \text{ V}</math>). (b) Shaped-electrode system: (1) high-current diffuse regime (<math>p = 10^{-1}</math> torr, Ar, <math>I_d = 1000 \text{ A}</math>, <math>U_d = 90 \text{ V}</math>); (2) contracted arc regime (<math>p = 10^{-1}</math> torr, Ar, <math>I_d = 1500 \text{ A}</math>, <math>U_d = 50 \text{ V}</math>).</p> |
| <p>[1d.] a magnet that is positioned to generate a magnetic field proximate to the weakly-ionized plasma, the magnetic field substantially</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</p>  |

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