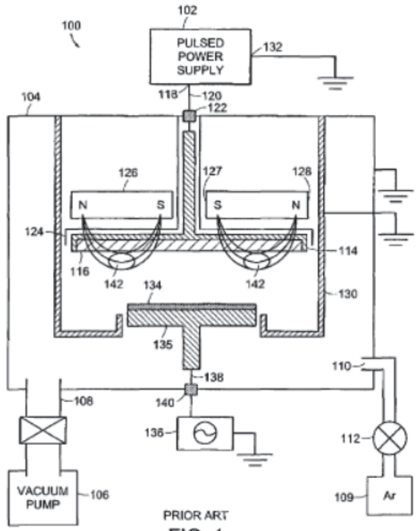
EXHIBIT A.07
U.S. Patent No. 7,147,759

References cited herein:

- U.S. Patent No. 7,147,759 ("'759 Patent")
- U.S. Pat. No. 6,413,382 ("Wang")
- 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")
- U.S. Pat. No. 5,968,327 ("Kobayashi")

Claim 18	Wang in view of Kudryavtsev and Kobayashi
[1pre.] A magnetically enhanced sputtering source comprising:	The combination of Wang with Kudryavtsev discloses a magnetically enhanced sputtering source. Wang at Title ("Pulsed sputtering with a small rotating magnetron.").
[1a.] an anode;	The combination of Wang with Kudryavtsev discloses an anode. '759 Patent at Fig. 1  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.")

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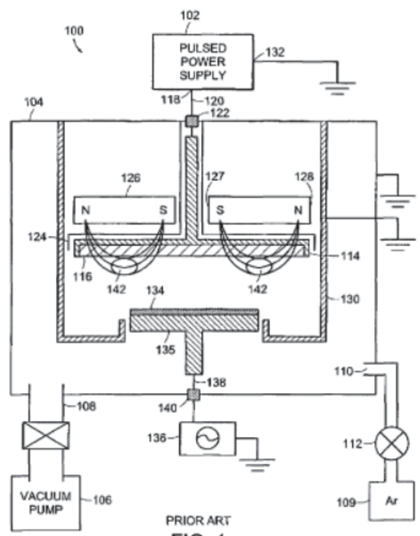
	Wang at Fig. 1 Wang at 3:66-4:1 ("A grounded shield 24 protects the chamber walls from sputter deposition and also acts as a grounded anode for the cathode of the negatively biased target 14.")
[1b.] a cathode assembly that is positioned adjacent to the anode, the cathode assembly including a sputtering target;	The combination of Wang 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  PRIOR ART 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.") Wang at Fig. 1 Wang at 3:66-4:1 ("A grounded shield 24 protects the chamber walls from sputter deposition and also acts as a grounded anode for the cathode of the negatively biased target 14.")
[1c.] an ionization source that generates a weakly-ionized plasma proximate	The combination of Wang with Kudryavtsev discloses an ionization source that generates a weakly-ionized plasma

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to the anode and the cathode assembly;	proximate to the anode and the cathode assembly. Wang at Fig. 1. Wang at 7:17-31 ("The background power level P_B is chosen to exceed the minimum power necessary to support a plasma... [T]he application of the high peak power P_P quickly causes the already existing plasma to spread and increases the density of the plasma.") Wang at 7:19-25 ("Preferably, the peak power P_P is at least 10 times the background power P_B … and most preferably 1000 times to achieve the greatest effect of the invention. A background power P_B of 1 kW [causes] little if any actual sputter deposition.") Wang at 4:23-31 ("A small rotatable magnetron 40 is thus creating a region 42 of a high-density plasma (HDP)…") Wang at 7:47-49 ("The initial plasma ignition needs to be performed only once and at much lower power levels so that particulates produced by arcing are much reduced.").
[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; and	The combination of Wang 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. '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.") '759 Patent at 4:4-10 [*describing the prior art Fig. 1*] ("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….") Wang at Fig. 1. Wang at 4:23-27 ("A small rotatable magnetron 40 is disposed in the back of the target 14 to create a magnetic field near the face of the target 14 which traps electrons from the plasma to increase

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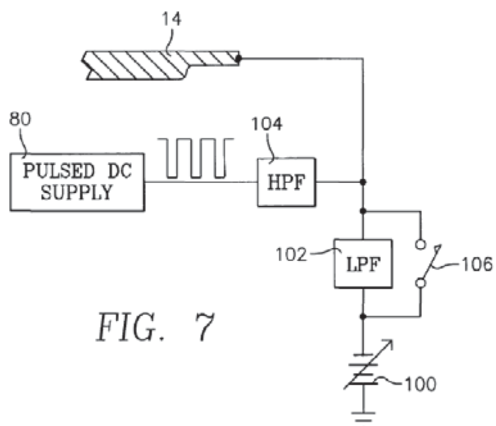
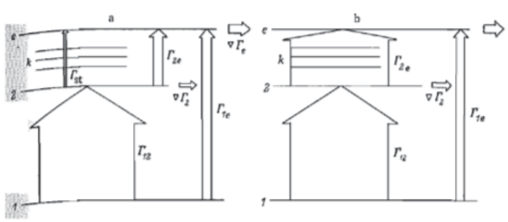
	the electron density.”)
[1e.] a power supply generating a voltage pulse that produces an electric field between the cathode assembly and the anode, the power supply being configured to generate the voltage pulse with an amplitude and a rise time that increases an excitation rate of ground state atoms that are present in the weakly-ionized plasma to create a multi-step ionization process that generates a strongly-ionized plasma, which comprises ions that sputter target material, from the weakly-ionized plasma, the multi-step ionization process comprising exciting the ground state atoms to generate excited atoms, and then ionizing the excited atoms within the weakly-ionized plasma without forming an arc discharge.	The combination of Wang with Kudryavtsev discloses a power supply generating a voltage pulse that produces an electric field between the cathode assembly and the anode, the power supply being configured to generate the voltage pulse with an amplitude and a rise time that increases an excitation rate of ground state atoms that are present in the weakly-ionized plasma to create a multi-step ionization process that generates a strongly-ionized plasma, which comprises ions that sputter target material, from the weakly-ionized plasma, the multi-step ionization process comprising exciting the ground state atoms to generate excited atoms, and then ionizing the excited atoms within the weakly-ionized plasma without forming an arc discharge. ‘759 Patent at Fig. 5 Wang at Figs. 6, 7.  FIG. 7 Wang at 7:61-62 (“The pulsed DC power supply 80 produces a train of negative voltage pulses.”). Wang at 5:23-27 (“[The pulse’s] exact shape depends on the design of the pulsed DC power supply 80, and significant rise times and fall times are expected.”). Wang at 4:29-31 (“increases the sputtering rate...”). Wang at 7:19-25 (“Preferably, the peak power level P_P is at least 10 times the background power level P_B, … most preferably 1000 times to achieve the greatest effects of the invention. A

Claim 18	Wang in view of Kudryavtsev and Kobayashi
	background power P_B of 1 kW will typically be sufficient…”) Wang at 7:31-39 (“The SIP reactor is advantageous for a low-power, low-pressure background period since the small rotating SIP magnetron can maintain a plasma at a lower power and lower pressure than can a larger stationary magnetron. However, it is possible to combine highly ionized sputtering during the pulses With significant neutral sputtering during the back ground period.”). Wang at 7:3-6 (“Plasma ignition, particularly in plasma sputter reactors, has a tendency to generate particles during the initial arcing, which may dislodge large particles from the target or chamber.”) Wang at 7:47-49 (“The initial plasma ignition needs be performed only once and at much lower power levels so that particulates produced by arcing are much reduced.”). Wang at 7:13-28 (“Accordingly, it is advantageous to use a target power waveform illustrated in FIG. 6… As a result, once the plasma has been ignited at the beginning of sputtering prior to the illustrated waveform…”). Kudryavtsev at 34, right col, ¶ 4 (“Since the effects studied in this work are characteristic of ionization whenever a field is suddenly applied to a weakly ionized gas, they must be allowed for when studying emission mechanisms in pulsed gas lasers, gas breakdown, laser sparks, etc.”) Kudryavtsev at Fig. 1  FIG. 1. Diagram showing the relative sizes of the electron fluxes in terms of the atomic energy levels for the slow (a) and fast (b) stages. The width of the arrows indicates the magnitude of the electron flux. The horizontal arrows give the diffusion fluxes of electrons and excited atoms reaching the walls of the discharge tube. Kudryavtsev at Fig. 6

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