EXHIBIT B.07
U.S. Patent No. 7,604,716

References cited herein:

- U.S. Patent No. 7,604,716 ("'716 Patent")
- U.S. Pat. No. 6,413,382 ("Wang")
- Dennis M. Manos & Daniel L. Flamm, Plasma Etching: An Introduction, Academic Press 1989 ("Manos")
- Milton Ohring, The Material Science of Thin Films, Academic Press, 1992 ("Ohring")
- Yu. P. Raizer, Gas Discharge Physics, Springer, 1991 ("Raizer")

Claims 1-11 and 33	**Wang**
1. An apparatus for generating a strongly-ionized plasma, the apparatus comprising:	Wang discloses an apparatus for generating a strongly-ionized plasma. Wang at 7:19-25 ("Preferably, the peak power P_P is at least 10 times the background power P_B, more preferably at least 100 times, and most preferably 1000 times to achieve the greatest effect of the invention. A background power P_B of 1kW will typically be sufficient to support a plasma with the torpedo magnetron and a 200 mm wafer although with little if any actual sputter deposition.") Wang at 7:28-30 (" the application of the high peak power P_P instead quickly causes the already existing plasma to spread and increases the density of the plasma") (emphasis added). Wang at 7:31-39 ("In one mode of operating the reactor, during the background period, little or no target sputtering is expected. The SIP reactor is advantageous for a low-power, low-pressure background period since the small rotating SIP magnetron can maintain a plasma at 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 background period.")
a. an ionization source that generates a weakly-ionized plasma from a feed gas contained in a chamber, the weakly-ionized plasma substantially eliminating the probability of	Wang discloses an ionization source that generates a weakly-ionized plasma from a feed gas contained in a chamber, the weakly-ionized plasma substantially eliminating the probability of developing an electrical breakdown condition in the chamber. Wang at Fig. 7 Wang at 4:5-6 ("A sputter working gas such as argon is supplied from a gas source 32….")

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developing an electrical breakdown condition in the chamber; and	Wang at 4:20-21 ("… a reactive gas, for example nitrogen is supplied to the processing space 22….") 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 (Ex. 1005) ("…thus creating a region 42 of a high-density plasma (HDP)…") Wang at 7:3-49 ("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… 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 7:25-28 ("As a result, once the plasma has been ignited at the beginning of sputtering prior to the illustrated waveform, no more plasma ignition occurs."). Wang at 7:58-61 ("… DC power supply 100 is connected to the target 14 … and supplies an essentially constant negative voltage to the target 14 corresponding to the background power P_B.") Wang at 7:22-23 ("A background power P_B of 1 kW will typically be sufficient to support a plasma…")
b. a power supply that supplies power to the weakly-ionized plasma though an electrical pulse that is applied across the weakly-ionized plasma, the electrical pulse having at least one of a magnitude and a	Wang discloses a power supply that supplies power to the weakly-ionized plasma though an electrical pulse that is applied across the weakly-ionized plasma, the electrical pulse having at least one of a magnitude and a rise-time that is sufficient to transform the weakly-ionized plasma to a strongly-ionized plasma without developing an electrical breakdown condition in the chamber. Wang at Fig. 7 Wang at 7:61-62 ("The pulsed DC power supply 80 produces a train of

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rise-time that is sufficient to transform the weakly-ionized plasma to a strongly-ionized plasma without developing an electrical breakdown condition in the chamber.	negative voltage pulses.") 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 background power P_B of 1 kW will typically be sufficient…") Wang at 7:28-30 ("… the application of the high peak power P_P instead quickly causes the already existing plasma to spread and increases the density of the plasma."). Wang at 7:36-39 ("However, it is possible to combine highly ionized sputtering during the pulses with significant neutral sputtering during the background period.") 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 7:3-49 ("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… The initial plasma ignition needs be performed only once and at much lower power levels so that particulates produced by arcing are much reduced."). *See* evidence cited in claim 1 preamble.
2. The apparatus of claim 1 wherein the pulsed power supply is a component in the ionization source.	Wang discloses the pulsed power supply is a component in the ionization source. *See* evidence cited in claim 1. Wang at Figs. 1 and 7. Wang at 7:57-63 ("A variable DC power supply 100 … supplies an essentially constant negative voltage to the target 14 corresponding to the background power P_B. The pulsed DC power supply 80 produces a train of negative voltage pulses…..").
3. The apparatus of claim 1 wherein the ionization source is chosen from the group comprising an electrode coupled to	Wang discloses the ionization source is chosen from the group comprising an electrode coupled to a DC power supply, an electrode coupled to an AC power supply, a UV source, an X-ray source, an electron beam source, an ion beam source, an inductively coupled plasma source, a capacitively coupled plasma source, and a microwave

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a DC power supply, an electrode coupled to an AC power supply, a UV source, an X-ray source, an electron beam source, an ion beam source, an inductively coupled plasma source, a capacitively coupled plasma source, and a microwave plasma source.	plasma source. *See* evidence cited in claim 1. Wang at Figs. 1 and 7. Wang at 7:58 ("… DC power supply 100 is connected to the target 14.").
4. The apparatus of claim 1 wherein the power supply generates a constant power.	Wang discloses the power supply generates a constant power. *See* evidence cited in claim 1. '716 Patent at Fig. 4 Wang at Figs. 1, 6 and 7
5. The apparatus of claim 1 wherein the power supply generates a constant voltage.	Wang discloses the power supply generates a constant voltage. *See* evidence cited in claim 1. Wang at 7:61-62. ("[P]ulsed DC power supply 80 produces a train of negative voltage pulses.") One of ordinary skill would have understood that Wang's voltage would be constant for at least a portion of the duration of the pulse τ_w so as to produce pulse P_P of constant power.
6. The apparatus of claim 1 wherein the power supply supplies power to the weakly ionized plasma at a time that is between about fifty microsecond and five second after the ionization source generates the weakly-ionized	Wang discloses the power supply supplies power to the weakly ionized plasma at a time that is between about fifty microsecond and five second after the ionization source generates the weakly-ionized plasma. *See* evidence cited in claim 1. Wang at Fig. 6. Wang at 5:43-46 ("The choice of pulse width τ_w is dictated … Typically, it should be at least 50 µs."). Wang at 5:55-56. ("ratio of the pulse width to the repetition period τ_w /

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plasma.	τ_p is preferably less than 10% and more preferably less than 1%...”.). For a 10% ratio, Wang’s repetition period τ_p is 500 μs and the duration of the background power, P_B, (and the weakly-ionized plasma) is 450 μs (i.e., repetition period τ_p minus the peak power pulse width τ_w). For a 1% ratio, Wang’s repetition period τ_p is 5,000 μs and the duration of the background power, P_B, (and the weakly-ionized plasma) is 4,950 μs. For both of Wang’s suggested ratios, the power supply supplies power to the weakly ionized plasma at a time that falls within the claimed range, i.e., the peak power P_P is applied between 50 microseconds and 5 seconds after generation of the weakly-ionized plasma.
7. The apparatus of claim 1 wherein the power supply supplies power to the weakly ionized plasma for a duration that is sufficient to generate a quasi-static electric field across the weakly-ionized plasma.	Wang discloses the power supply supplies power to the weakly ionized plasma for a duration that is sufficient to generate a quasi-static electric field across the weakly-ionized plasma. *See* evidence cited in claim 1. ’716 Patent, 7:9-12 (“By quasi-static electric field we mean an electric field that has a characteristic time of electric field variation that is much greater than the collision time for electrons with neutral gas particles.”). Wang at 4:5-7 (“A sputter working gas such as argon is supplied from a gas source 32 through a mass flow controller 34 to a region in back of the grounded shield 24.”). Wang at 7:61-62 (“pulsed DC power supply 80 produces a train of negative voltage pulses.”) Wang at 5:45-48 (“[The pulse width τ_w] should be at least 50 μs.”)” Fu at 1:46-48 (“Although the base pressure can be held to about 10^{-7} Torr or even lower, the pressure of the working gas is typically maintained at between about 1 and 1000 mTorr.”). [Wang incorporates Fu by reference] *Background:* Raizer at 11, §2.1.4 (“The collision frequency ν_m is proportional to…pressure *p*.”). Raizer at Table 2.1 (“$\nu_m/p = 5.3 \times 10^9$ s^{-1} $Torr^{-1}$”)
8. The apparatus of claim 1 wherein the cathode is generally	Wang discloses the cathode is generally formed in the shape of at least one circular disk.

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