EXHIBIT B.11
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")
- U.S. Pat. No. 6,190,512 ("Lantsman")

Claims 12-13	Wang in view of Lantsman
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 developing an electrical breakdown condition in the chamber; and	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….") 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

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	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 (“…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 rise-time that is sufficient to transform the weakly-ionized plasma to a strongly-ionized plasma without developing an electrical breakdown	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 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…”)

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condition in the chamber.	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.
12. The apparatus of claim 1 further comprising a gas line that is coupled to the chamber, the gas line supplying feed gas to the strongly-ionized plasma that transports the strongly-ionized plasma by a rapid volume exchange.	The combination of Wang with Lantsman discloses a gas line that is coupled to the chamber, the gas line supplying feed gas to the strongly-ionized plasma that transports the strongly-ionized plasma by a rapid volume exchange. It would have been obvious to one of ordinary skill to continue to add the feed gas in Wang during production of the strongly-ionized plasma (i.e., during application of the peak power pulses P_P). Such addition of the feed gas would transport the strongly-ionized plasma by a rapid volume exchange as recited in claim 12. Lantsman at 3:9-13 ("[A]t the beginning of processing, this switch is closed and gas is introduced into the chamber. When the plasma process is completed, the gas flow is stopped…."). Lantsman at 4:36-38 ("To end processing, primary supply 10 is disabled, reducing the plasma current and deposition on the wafer. Then, gas flow is terminated…."). Lantsman at Fig. 6:

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	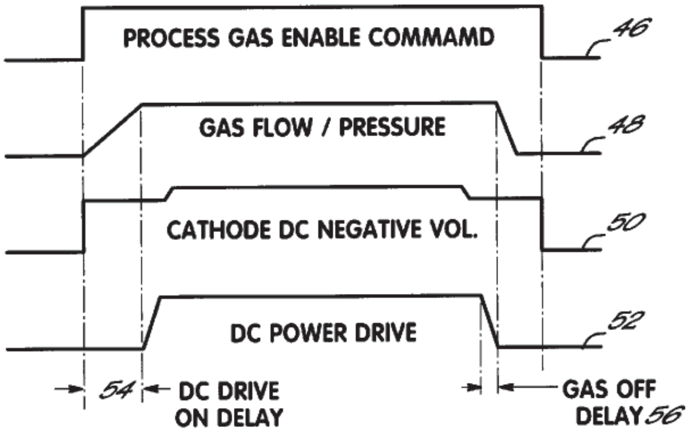 FIG. 6 Lantsman at 5:39-42 ("Sometime thereafter, gas flow is initiated and the gas flow and pressure (trace 48) begin to ramp upwards toward normal processing levels."). Lantsman at 5:42-45 ("After a delay time (54), a normal pressure and flow rate are achieved, and primary supply 10 is enabled, causing a ramp increase in the power produced by the primary supply (trace 52)."). Lantsman at 2:48-51 ("This secondary power supply 'pre-ignites' the plasma so that when the primary power supply is applied, the system smoothly transitions to final plasma development and deposition."). It would have been obvious to one of ordinary skill to continue to apply the feed gas during Wang's background and peak power, P_B and P_P, as taught by Lantsman. Such a continuous introduction of feed gas balances gas withdrawn by Wang's vacuum system 38 so as to maintain a desired pressure. Wang at 4:11-12 ("A vacuum system 38 pumps the chamber through a pumping port 40."). Such a continuous flow of gas would transport Wang's strongly-ionized plasma by a rapid volume exchange. One of ordinary skill would have been motivated to combine Wang and Lantsman. Both Wang and Lantsman are directed to sputtering using plasma. Wang at title ("Pulsed sputtering with small rotating magnetron"); see also Lantsman at 1:6-8 ("This invention relates to reduction of device damage in plasma processes, including DC (magnetron or non-magnetron) sputtering, and RF sputtering."). Both

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	references also relate to sputtering systems that use two power supplies, one for pre-ionization and one for deposition. See Lantsman at 4:45-47 ("[T]he secondary [power] supply 32 is used to pre-ignite the plasma, whereas the primary [power] supply 10 is used to generate deposition."); See Wang at Fig. 7. (showing the variable supply 100 and the pulsed DC supply 80"). Both Wang and Lantsman are concerned with generating plasma while avoiding arcing. See Lantsman ("Furthermore, arcing which can be produced by overvoltages can cause local overheating of the target, leading to evaporation or flaking of target material into the processing chamber and causing substrate particle contamination and device damage…. Thus, it is advantageous to avoid voltage spikes during processing whenever possible.") Wang and Lantsman relate to the same application. Further, one of ordinary skill would have been motivated to use Lantsman's continuous gas flow in Wang so as to maintain a desired pressure in the chamber. Finally, use of Lantsman's continuous gas flow in Wang would have been a combination of old elements in which each element behaved as expected.
13. The apparatus of claim 12 wherein the gas volume exchange permits additional power to be absorbed by the strongly-ionized plasma.	The combination of Wang with Lantsman discloses the gas volume exchange permits additional power to be absorbed by the strongly-ionized plasma. *See* evidence cited in claim 12. It would have been obvious to one of ordinary skill to continue to add the feed gas in Wang during production of the strongly-ionized plasma. Such addition of the feed gas would have both transported the strongly-ionized plasma by rapid volume exchange and allowed additional power from Wang's repeating voltage pulses to be absorbed by the strongly-ionized plasma.