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QUOTATION

We are pleased to offer you the following goods.
 Detail information about price, terms and conditions are described hereunder.

Customer : Chipbond	Date : Jul 16, 2015
Product : Plasma Processing System (Rydeen 8200)	Quote No. :
	A person in charge : Jacob Kim

No	DESCRIPTION	Q'TY	UNIT PRICE	AMOUNT PRICE
1	Plasma Processing System (Rydeen-8200) * Including 2 Process Modules * For 150mm, 200mm & 300mm Wafer	1 system		
2	Option : Dry pump * 1 Dry pump for Process Modules (10,000 L/min) * 1 Dry pump for TM & Load Lock (10,000 L/min)	2 sets		
3	Option : Chiller * Dual channel for 2 Process Modules	1 set		
Total Price (Options are not included) :			

1. Terms & Conditions

- | | | |
|----------------------------|---|--|
| 1) Delivery date | : | Within 3 months ARO |
| 2) Payment condition | : | 30% By T/T upon receipt of purchase order
60% By T/T before shipment
10% By T/T after completion of performance verification |
| 3) Warranty | : | One(1) year after completion of performance verification |
| 4) Quotation validity term | : | 30 days from the quoted date |
| 2. Payment currency | : | US dollars |
| 3. Packing | : | Export standard packing (Vacuum sealed crate) |
| 4. Origin/Shipment from | : | |

Jason Bae

 Jason Bae / President
 Kostek Systems, Inc.

Plasma Processing System, Rydeen 8200		
Date : Jul. 16, 2015		Quote No. :
Customer : Chipbond		
No	ITEM / DESCRIPTION	Q'ty
	<p>General Features</p> <p>This system is designed to eliminate scums of PR, PI and BCB in bumping process</p> <ul style="list-style-type: none"> - High performance ICP source with specially designed helical coil - High density plasma and good ion directionality - High accuracy ATM & vacuum robot transfer - Field proven RF generator & matching unit - Field proven Windows based operating software - Easy to convert wafer size among 150mm, 200mm and 300mm wafers - Good process performance <p>Process Performance</p> <ul style="list-style-type: none"> - Etching rate : $\geq 10,000\text{\AA}/\text{min}$ @ (our standard recipe of PR removal) - Within wafer uniformity : $\leq 5\%$ - Uniformity of wafer to wafer : $\leq 3\%$ * Calculating method : $(\text{max} - \text{min}) / (2 \times \text{Average}) \times 100\%$ * Note: This uniformity should be calculated using average etching rate of each wafer - Particles : $\leq 20\text{ea}$ (@$>0.20\mu\text{m}$) - Throughput : ≥ 100 wafers/h (@process time : 30sec) <p>System Configuration</p> <ol style="list-style-type: none"> 1. EFEM 2. Load-lock module 3. Transfer module 4. Process module 5. ICP RF power generator & matching unit 6. Bias RF Power generator & matching unit 7. Power box and controls 8. Operating software 	
1	<p>EFEM</p> <p>This module transfers wafers from the FOUP to the LL</p> <ul style="list-style-type: none"> ▶ Compatible for 150mm, 200mm and 300mm wafers ▶ High accuracy ATM robot transfer with wafer mapping function for 6" & 8" wafer ▶ SEMI standard load-port modules with wafer mapping function for 12" wafer ▶ Configuration <ul style="list-style-type: none"> ATM robot with mapping function : 1 set FFU : 1 set Load-port module : 2 sets Signal tower : 2 sets GUI display unit : 1 set UPS : 1 set 	1 set
2	<p>Load-lock module</p> <p>This module is for loading and unloading of wafers between FOUP and TM</p> <ul style="list-style-type: none"> ▶ Double stack chamber : upper and lower ▶ Configuration <ul style="list-style-type: none"> - 2 slots per LL - Vacuum and venting unit 	1 set
3	<p>Transfer module</p> <p>This module transfers wafers between LL and PM.</p> <ul style="list-style-type: none"> ▶ High accuracy vacuum robot ▶ Configuration <ul style="list-style-type: none"> Transfer chamber : 1 set Vacuum robot : 1 set Vacuum and gas unit : 1 set 	1 set

4	<p>Process module (1 stage/PM)</p> <ul style="list-style-type: none"> ▶ Inductively Coupled Plasma (ICP) source <ul style="list-style-type: none"> - 'Balanced ICP' plasma source - Good uniformity of plasma and gas flow - Quartz tube for discharge and clean process <p>This module adopts Balanced ICP which achieves good process uniformity.</p> <ul style="list-style-type: none"> ▶ Lower electrode unit <ul style="list-style-type: none"> - Ceramic coated Al anodized chuck for wafer backside cooling - Ceramic ring for better process uniformity ▶ Configuration <ul style="list-style-type: none"> ICP plasma source : 1 set Lower electrode : 1 set Anodized process chamber : 1 set Pressure gauge : 1 set Pressure control unit : 1 set Gas box, 5 gases mounted : 1 set 	2 sets
5	<p>ICP RF power unit</p> <ul style="list-style-type: none"> ▪ ICP RF generator <ul style="list-style-type: none"> - Frequency : 13.56MHz - Maximum output : 2kW - Output impedance : $50 \pm 2 \Omega$ - Cooling : PCW ▪ Automatic RF matcher <ul style="list-style-type: none"> - Maximum input : 2KW(50 Ω) - Cooling: Forced air 	2 sets
6	<p>Bias RF power unit</p> <ul style="list-style-type: none"> ▪ Bias RF generator <ul style="list-style-type: none"> - Frequency : 2.0MHz - Maximum output : 1KW - Cooling : Forced air ▪ Automatic RF matcher <ul style="list-style-type: none"> - Maximum input : 1KW(50 Ω) - Cooling : Forced air 	2 sets
7	<p>Controls and power box</p> <ul style="list-style-type: none"> * Industrial computers for CTC,TMC and PMC * 17" touch LCD monitor * Power distribution unit 	1 set
8	<p>Operating software</p> <ul style="list-style-type: none"> * SEMI standard, user friendly, easy to operate * Configurable parameters * CTC/TMC/PMC programs * SECS-II/GEM communication and HSMS support (optional) * Windows based software 	1 set
9	<p>Wafer Conversion Kit (150mm wafer, 200mm wafer & 300mm wafer)</p> <p>Allows 150mm and 200mm wafers to be processed on 300mm load port & process chamber This option simplifies the wafer size conversion by simply exchanging the kit</p> <ul style="list-style-type: none"> ▪ End effector of vacuum robot ▪ Ceramic edge ring ▪ Cassette adapter on 300mm load port in case of using 150mm and 200mm wafers 	2 sets
10	<p>Option ;</p> <p>1) Chiller(for cold chuck)</p> <ul style="list-style-type: none"> ▪ Type : Dual channel for 2 process chambers ▪ Temperature control <ul style="list-style-type: none"> * Control method : PID control * Control range : 0~40 ℃ * Stability : $\pm 1.0 \text{ }^\circ\text{C}$ 	1 set
	<p>2) Dry Pump</p> <p>2 Dry pumps : 10,000L/min</p> <ul style="list-style-type: none"> ▪ 1 dry pump for 2 process chambers : 10,000L/min ▪ 1 dry pump for load-lock module & transfer module : 10,000L/min 	2 sets