

Request for quote and specifications of Semi- Automatic Wire Bonder

- The GEECI (Gallium Nitride Ecosystem Enabling Centre and Incubator) at SID-Indian Institute of Science is seeking bids from qualified industries for **Semi- Automatic Wire Bonder**.
- Companies need to submit two bids, a technical bid and a commercial bid, in two separate sealed envelopes. The bids should be submitted no later than 21 days from the date of posting of this tender, as listed on the website date/time stamp and by 5 pm on the 21st day or next weekday in case the 21st day falls on a weekend or a national holiday.
- Both technical and commercial bids should be addressed to “The Chief Executive, SID, IISc, Bangalore 560012.”
- The envelopes should be addressed to “Prof. Srinivasan Raghavan, CeNSE, IISc, Bangalore, 560012” and submitted to the office at CeNSE, IISc in Room No. GF 15 between 9 am and 5 pm.
- All questions regarding this tender should be addressed to Prof. Srinivasan Raghavan at the email address sraghavan@iisc.ac.in
- Post such submission all vendors should send an email to sraghavan@iisc.ac.in with the subject line: “GEECI_Bidder’s name_Tool Name” to intimate him of the submission within one day.
- Deviations from the technical specifications requested are allowed. Such deviations must be highlighted and justified. Their acceptance or rejection will be left to the discretion of the technical committee.
- The equipment sought will be placed at the Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc). IISc is India’s No. 1 institution on higher learning and the Centre for Nano Science and Engineering is home to one of the best academic fabs in the world.
- The technical response, corresponding to the tool being offered, should be in the form of a compliance table with at least 5 columns. Serial number in column 1. Each of the numbered technical items below should be addressed in a separate row of the table in column 2. Compliance to this requirement, in Yes/No, deviation from it and justification should be provided in the neighbouring columns 3-5. Post the opening of a hard copy of the technical bid the committee will request for a soft copy of the files for further processing. Companies should NOT mail soft copies of the files unless specifically requested for.
- Detailed technical specifications of the tool being offered should be included.
- Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.
- If multiple systems can fulfil the requirements, vendors can submit multiple bids.
- Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors.
- The commercial bid should be broken up to the maximum extent possible into separate items with a cost against each to enable better comparison of price for various configurations across the bidders. As an option, please provide itemized cost for any suggested accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.

Technical Specifications for Semi- Automatic Wire Bonder		
SI No	Machine Capability	Ultrasonic as well as thermosonic
G	Application: This system is required to bond, wires and ribbons on HMC, TO, RF packages & Flat substrate (PCB & Ceramic) etc. Type circuits which includes semiconductor chips & package.	
1	Wire bonder should capable to bond:	Ball bonding
		Wedge bonding
		Ribbon bonding
		Bumb-bonding
2	Wire Au & Al	17 μ to 75 μ
3	Ribbon wire Au	25 μ x 250 μ
4	Bond Tool depth access	11 to 16 mm
5	Wire feeding Angle	90 Deg
6	X-Y Table Movement	Manipulator
7	Z axis movement (Head Movement)	Motorized & also Z axis movement should be controlled manually
8	X & Y Axis	Manual
9	Ultrasonic System	Frequency in range of 60 KHz to 65 KHz
10	Ultrasonic Power	0 to 10 Watts or better
11	Bond Time	0 to 20000 milliseconds or better
12	Bond Force	10 to 150 grams or better
13	Bond Actuation	Using sensor at bond surface contact Touch down sensor
14	Temperature control	25°C to 250°C
15	Work Stage	Adjustable height heater stage 175 deg C or more
		100mm (Min) diameter
		Clamping & vacuum system.
16	Supply Voltage @ 50 Hz	180 – 250 VAC
17	Clamping system	Motorized & Automatic operation during wire bonding

18	Touch down sensor which will automatically sense the height	Chip or substrate
19	Gold Wire Spool- Holder	2 inch standard with motorized spool
20	Manual Wire spool adapter for Ribbon	2 inch Spool
21	Stereo Microscope with Camera	Microscope (up to 100x magnification) or batter with Digital Video Camera and 15" Screen or better
22	Illumination	Dual Optical fiber or better
23	Bond pad	Bonder should be capable of bonding Minimum of 50 μm -pad size and 50 μm pitches
24	Bonding Wires -1 Mil	One spool each of length 100meters of Gold & Aluminium bonding wire
25	Bonding Ribbon -1 X 5mil	One spool of length of 10 meters of Gold ribbon of size
26	Bond Tools (Wedge bond tool, Capillary ball bond tool and ribbon bond tool)	Wedge bond tool for 1mil Gold and Aluminium wire (5 each)
		Capillary ball bond tool for 1 mil Gold wire (5 number)
		5 mil ribbon bond tool (3 No)
27	Bonding target system	laser or batter
28	Bonder Installation tool:	The kit should include essential items like tweezers, cutting shears, unplugging probe, microneedle tips, scissors, Allen wrenches, Screws and Ball end drivers
29	System should have motorized wire feed & user friendly changeover from ball to wedge configuration with just change of tool or head replace	
30	System should have facility to store and recall bonding parameters. USB Backup. 100 Program Storage Capability	

Common Terms and Conditions: A separate table to be included for each of the items below in the technical bid.	
18	Semi Standards: Technical bid should provide details of SEMI standards the tool confirms to.
19	Clean Room Compatibility: The system should be compatible with better than class 1000 cleanroom environment.
20	Tool Qualification and Acceptance: Commissioning shall involve demonstration of Semi-Automatic Wire Bonder to the required specifications and characterized by the client within time frames as mutually agreed upon. Details of the stage wise certification protocols to be pursued for tool acceptance should be included in the technical bid. The PO will include a mutually agreed upon set of tool qualification criteria. Please list a set of acceptance tests for on-site (vendor) inspection and after installation at IISc.
21	Tool Training: The bid should include as an option the cost of training personnel on site before shipment and post installation at IISc.
22	Tool footprint and utilities: A floor plan should be part of the technical bid. A list of utility requirements should be part of the technical bid. The system should be compatible with 240±10V, 50 Hz single phase or 415±20V, 50 Hz 3 phase supplies. The MINIMUM sets of utility requirements needed are provided in Table 1. If there are additional utility requirements please include them in the technical bid. Please list connector types for all utilities.
23	Cost of Ownership and supply of spares: The quote should include a listing of spares that need to be replaced periodically to ensure that the system is in operation in a stable fashion – the stability parameters being defined by the vendor and agreed to by the client – the cost of such items, the ability to guarantee their availability at this cost for a period of 5 years from the time of procurement. The aim of this exercise is to compare cost of ownerships between reactors.
24	Maintenance: The cost of an annual maintenance contract and cost of emergency technical support that may involve an engineer being on site should be quoted for in the commercial bid and addressed in the technical bid. The availability of trained engineers in India for servicing the system will be preferred and should be described in the technical bid.
25	Maintenance: On all systems a set of basic tools required -non-standard screw or spanner head that is required for routine tool maintenance should be mentioned- for performing routine maintenance should be included.
26	Operation & Maintenance: System operation, process and troubleshooting manuals and detailed drawings are a must (hard copy & soft copy both). Their inclusion must be indicated in the technical bid.
27	Online support: System should have the capability for online diagnostics from a remote location in case of tool problems or tele-con with free of cost.
28	Post sales & service and Indian Presence: Bidders should provide details of after sales service and support available in India. If not India, the nearest geographical location should be specified. Please provide details of the number of trained personnel in India who can service the machine, the number of tools sold in India and the corresponding number in the southern region or in Bangalore.



Society for Innovation & Development



29	Shipping: On all systems the cost of shipping up to IISc should be included. IISc will help with customs clearance at Bangalore Airport (DAP MODE).
30	Payment Terms and Conditions: On all systems the payment terms should be specified in the technical and commercial proposal and is subject to negotiation. Please include your payment option. IISc would prefer to retain at least 20% of payment till instruments have been commissioned and successfully demonstrated.
31	References: Bidders should provide details of other locations in India with similar tool installations.
32	References: Bidders should provide details of at least 3 other locations globally where similar tool installations have been deployed for device fabrication in a clean room preferably for production purposes.
33	Company financials: Bidder shall have to submit audited accounts of financial year 2017-18, 2018-19 and 2019-20. Audited statement must be signed and stamped by qualified chartered accounted. Income Tax return for assessment year – 2017-18, 2018-19 and 2019-20.
34	The following documentation should be provided. ISO9001 quality certification. CE marking confirmation.

Details to be provided in addition to other utility requirements the tool may require. If not applicable mark as NA: Not applicable.

Tool dimensions				Electric		Chilled water		Gases							Exhaust	Thermic load							
L (mm)	B (mm)	H (mm)	Sq. Metre	kW	kVA	kW	l/h	slpm	slpm	slpm	slpm	slpm	slpm	slpm	slpm	m ³ /h	kW						
Tool Foot Print, (LXBXH)				Power consumption average		Cooling capacity maximum		UHP Nitrogen		UHP Hydrogen		He		Oxygen		Regular Nitrogen		Argon		Forming Gas		Thermic load to clean room	
			Area		Peak power		Process Cooling Water																