Shankar Kumar Selvaraja
Assistant Professor

T +91 80 22933342
E shankarks@iisc.ac.in
http://www. http://www.cense.iisc.ac.in/shankar-kui selvaraja

September 13th , 2022

To Whom It May Concern

Global tender for a Scrubber system (Quantity: 2)

This is an RFQ (Request for Quote) for procurement of a Scrubber system as part of a global tender for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore.

CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by 50 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nanoelectronics Users Program (INUP) which has allowed 4200 participants from more than 700 universities and institutes all over India to use the facilities at CeNSE. Consequently, any tool in CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure into their quotes. Details of existing facilities and INUP program can be gleaned from:
http://nnfc.cense.iisc.ac.in/
http://www.mncf.cense.iisc.ac.in/
https://www.inup.cense.iisc.ac.in/

Also, CeNSE hosts equipment on behalf of vendors, as a national standard or 'model' system. If the vendor is interested, CeNSE can consider working out a similar arrangement for the ICP-RIE system.

Procedure

1. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Only vendors who meet the technical requirement will be considered for the commercial negotiation.
2. **The deadline for submission of proposals is the 4th October 2022, 5:30 pm Indian Standard Time.** Proposals should arrive at the Main office, GF-15, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India, by the above deadline.
3. The decision of purchase committee will be final.
4. The technical proposal should contain a compliance table with 5 columns. The first column must list the technical requirements, in the order that they are given in the technical configuration below. The second column should describe your compliance in a "Yes" or "No" response. If "No" the third column should provide the extent of the deviation (please provide quantitative responses). The fourth column should state the reasons for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below.
5. 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.
6. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors

Shankar Kumar Selvaraja
Assistant Professor

T +91 80 22933342
E shankarks@iisc.ac.in
http://www. http://www.cense.iisc.ac.in/shankar-kumar-selvaraja

7. If multiple systems can fulfill the requirements, vendors can submit multiple bids.
8. In the commercial bid, please provide itemized cost of the system and *required* accessories, such as software, power supply, etc.
9. 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.
10. Please indicate the warranty provided with the tool. Warranty of 3 years of more is preferred.
11. The quotations should be CIP-Bangalore Airport
12. Provide itemized cost for *required* spares for 2 years of operation.
13. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM.
14. If maintenance requires OEM, as an additional option, provide cost of an annual maintenance contract (AMC) for 3 years, post warranty. The AMC must cover 1 scheduled and 1 emergency visit per year. It must also indicate who will service the AMC, an Indian agent or the OEM. The AMC cost must also include an itemized list of spares that are essential for the scheduled visits.
15. The RFQ must include references of 3 previous installations, preferable in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.
16. Any questions can be directed to Dr. Savitha P, GF-20, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India. (savithap@iisc.ac.in)

Technical Requirements

1.	Primary application	• System should be based on a dry Chemisorption media and capable of handling multiple semiconductor process gases (hazardous, toxic and flammable) • The media should bind the gases in an irreversible reaction and no further scrubbing action should be necessary
2.	Secondary application	• Interface with the facility control software • Should offer PLC based system control
3.	Tool capability	• Absorb and form stable solid byproducts with various toxic, hazardous and flammable gases as per list provided in the Gas flow column • Should not require any other processes: like heating, moisturization
4.	Tools to be connected to the scrubber	• 5 dry etch tools (System 1) and 1 dry etch tool (System 2)
5.	Expected Gas flows from each tool	• Oxygen : 0.1 SLPM • Boron Trichloride : 0.1 SLPM • Chlorine : 0.1 SLPM • Sulfur hexafluoride : 0.1 SLPM

Shankar Kumar Selvaraja
Assistant Professor

T +91 80 22933342
E shankarks@iisc.ac.in
http://www. http://www.cense.iisc.ac.in/shankar-kumar-selvaraja

		• Carbon Tetrafluoride : 0.1 SLPM • Trifluoromethane : 0.1 SLPM • Octafluorocyclobutane : 0.1 SLPM
6.	Tool requirements	• Should be able to neutralize Cl2 and F2 based by products coming from ICPRIE / DRIE systems • Warning systems should be available indicating the end of lifetime for the absorbing media • Over pressure release values and warning systems should be available • All gas flows will be limited as per Row 5.
7.	Footprint& weight	• The system 1 should be compatible with placing in the clean corridor area outside the main cleanroom. • The system 2 should be compatible with placing in a class 1000 cleanroom. • Please specify the total footprint in cm x cm, and weight. Real estate is valuable, a compact system preferred.
8.	Periodic Maintenance	• The system should require only minimal maintenance. • Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years e.g. O-rings, should be mentioned in separately the itemized quote. • Can the preventive maintenance be done by a trained on-site engineer or requires a specialist from the OEM? If the latter, please provide cost of a 3 year AMC with required kit/consumables. • The system should be supported by a trained local representative and should have a 48hour window of response • Absorbing media should locally available and refilling should be possible in India
9.	Installation and Training	• Installation and training at customer site, by the experts from principals should be part of the package. • During the installation all the specifications of the tool should be verified for acceptance by the customer. • If periodic maintenance can be done by the on-site engineer, please include the cost of training the engineer.
10	Power& utilities	• The instrument should work with Indian standards • Mention the power requirement. • Mention any utility requirement (water, air, exhaust, etc.)
11	Safety	• Mention any special safety requirement of the tool

Shankar Kumar Selvaraja
Assistant Professor

T +91 80 22933342
E shankarks@iisc.ac.in
http://www. http://www.cense.iisc.ac.in/shankar-kumar-selvaraja

		• The tool must come with a complement of interlocks to prevent common user errors. • Sensors should be provided to detect ppb levels of gas leaks and utility failures • Any malfunction should have an audible alarm system. • Flashing lights during emergencies should also be an option
12	Recommendation	• The system must submit references from atleast 3 previous installations where the system has been connected to absorb gases specified in Row 5. • The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.

Thanking you,

Shankar Kumar Selvaraja, Ph.D.
Centre for Nano Science and Engineering
Indian Institute of Science, Bangalore, India 560012.
Office : +91-80-2293-3342
E-mail: shankarks@iisc.ac.in