

Tender notification for the procurement of a “Cryo-plunge freezing unit” at the Molecular Biophysics Unit in the Indian Institute of Science, Bangalore.

Dear Sir/Madam,

11-July, 2022

Subject: Request for quotation for a cryo-plunge freezing unit

This is a request for quotations for procurement of a “cryo-plunge freezing unit” for cryo-electron microscopy (EM) sample grid preparation on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms and conditions of the quotation, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc.

The quotation should be submitted in two parts: Part I (Technical bid) and Part II (Commercial bid) and both should be submitted in a sealed envelope. Technical bid should be exactly same as commercial bid except that prices are not shown in technical bid. Technical bid should have item wise compliance report of all specifications. The commercial bid should have pricing for each of the items quoted in the technical bid. Prices quoted should be inclusive of all taxes / duties. The prices quoted should be inclusive of delivery of the items to the site and installation at site. The last day for submitting the bid is 31, July 2022. The offer should be valid for a period of at least 60 days from the last date for submission of quotes.

Technical specifications for the cryo-plunge freezing unit for cryo-EM sample vitrification are given below:

- i. Vitrification system should be automated for vitrification (rapid cooling) of aqueous samples.
- ii. The process of blotting, plunging EM grid into cryogen and vitrification should be automated after setting up the liquid cryogen container and sample application.
- iii. The unit should have a controlled environmental/climatic chamber which allows clear visibility of the chamber interior and has side window for inserting pipette for sample application.
- iv. Operational parameters should be reproducible and enable high throughput of vitrified samples, with a user-friendly graphical user interface and/or foot pedal switch.
- v. The unit should allow application of small sample volumes that can be applied manually. It should be possible to control sample application times, wait times and blot times through the instrument software. The unit should be capable of multiple blotting of sample grid.
- vi. The adjustable parameters should include temperature, humidity, the number of blotting actions, and other time settings such as pre- and post-blotting wait times.
- vii. The unit must be able to control the temperature from 4°C - 60°C.
- viii. The unit should be able to sense relative humidity (RH) and reach upto 99% or more.
- ix. The unit should include automated controls for quick and smooth insertion of sample EM grid into container with liquid ethane for optimal vitrification and minimal contamination.
- x. It should have the option for saving experimental conditions that can be retrieved later for specific samples.
- xi. Standard accessories required to use the system such as compatible tweezers, blotting pads, blotting paper, cryogen container(s), grid boxes, touch screen pen etc. should be provided along with the equipment. It is preferable if additional spares of accessories are also included.

- xii. Basic tools required for routine maintenance of the plunging apparatus such as screw driver etc should also be provided.
- xiii. Bidder should provide free service if there is a routine upgradation or software installation is required. It is also preferable if the bidder provides/includes proper servicing of the instrument on a time-to-time basis.
- xiv. System should be supplied with minimum of 3 years of warranty.
- xv. Additional accessories that will facilitate use of the cryo-plunging system can also be included as optional items in the bid.
- xvi. The participating vendors/firms should be able to provide proven record of installation and usage of the same system at cryo-EM related research labs or facilities globally and within India. Details of application support structure in India (and Bangalore) must be provided.
- xvii. The technical compliance table given below should be duly filled and submitted as an annexure along with the technical bid by participating firms.

Compliance table for the Cryo-plunger:

S.No.	Technical Requirement	Yes/No	Reference or comparable alternates (if applicable)
1.	Vitrification (rapid cooling) of aqueous sample in cryogen		
2.	Automation of blotting, plunging into cryogen and vitrification of EM grid		
3.	Climate controlled chamber with clear visibility of interior and side window for manual sample application		
4.	Reproducibility of operational parameters possible using graphical user interface and/or foot pedal control		
5.	Manual sample application along with single and multiple blotting options		
6.	Operational control and adjustment possible for temperature, relative humidity, blotting time, wait/hold times for pre- and post-blotting time-points, number of blotting times.		
7.	Temperature control and adjustment within range of 4°C - 60°C		
8.	Relative humidity control and adjustment upto 99% and above		
9.	Automated controls for quick and smooth insertion of sample grid into liquid ethane container with minimal contamination		
10.	Feature to save experimental conditions and retrieval when needed		
11.	Standard accessories along with spares necessary to use system provided		
12.	Basic tools for routine maintenance of system provided		
13.	Free of cost service in case of routine upgradation or installation of system software		
14.	Minimum 3 years warranty provided		

15.	Additional accessories that will facilitate use of cryo-plunging system included as optional items		
16.	List of atleast 5 successful installations. (including in India)		
17.	Details of application support structure available within India and specifically Bangalore provided		

The machine along with accessories should be installed and made fully functional by the company or through its authorized agents. The machine acceptance will involve trouble free operation and demonstration of the capability of the system for which necessary consumables to be supplied along with the system. The participating firms must quote all-inclusive delivery prices and the entire shipment must be insured from the manufacturer's warehouse to the installation site at IISc.

The documents may be addressed to the Chairman, Molecular Biophysics Unit (Kind attention: Dr. Vidya Mangala Prasad), Indian Institute of Science, Bangalore 560012. Last date for receiving queries is 18 July, 2022. Last date for submission of bids is 31 July, 2022.

Thank You.

Sincerely,

Dr. Vidya Mangala Prasad

Assistant Professor

Molecular Biophysics Unit

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Karnataka, India.

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