



CENTRAL INSTRUMENTATION FACILITY,  
UNIVERSITY OF DELHI, SOUTH CAMPUS  
Benito Juarez Road, New Delhi 110021

Tender Ref. No.: UDSC/CIF/LCIS/2025-26

Dated: May 03, 2025

**ONLINE TENDER DOCUMENT**  
**Live cell imaging system (on confocal platform)**

**1. TERMS AND CONDITIONS OF THE TENDER**

**(a) Two-Bid System Tender**

Online Tenders shall be submitted in **2-PARTS: PART-I TECHNICAL BID**, duly signed by the bidder and **PART-II COMMERCIAL BID**,

**PART-I OF THE TENDER (TECHNICAL BID) must contain the following:**

- Tender Document, each page duly signed by the bidder as token of acceptance.
- All necessary information as are considered essential for full and correct evaluation of offers.
- Company profile and detailed list of installation of the offered/quoted system in Indian Institutions.
- Write up and documents supporting the eligibility criteria
- Technical compliance sheet

**PART-II OF THE TENDER (COMMERCIAL BID) must contain the following:**

- The duly completed Commercial Bid in form of BOQ, (Part II), to be uploaded.
- Bidder must submit to undermentioned address the Earnest Money Deposit (EMD) of ₹ 5,34,000/- (Rupees five lakhs thirty four thousand only) in the form of an Account payee Demand Draft in favour of “Chief Executive Officer, IOE, DU, payable at Delhi” valid for at least three months from the date of opening of tender failing which the quotation will be rejected.

Professor-in-charge  
CIF, Biotech Building 3<sup>rd</sup> Floor  
University of Delhi South Campus  
Benito Juarez Road  
New Delhi 110021

- (b) All documentation is required to be in English. Correction / overwriting, if unavoidable, should be signed separately. Tender papers must be signed on all the pages by the tenderer.
- (c) Ambiguity must be avoided in filling tenders. All entries in the tender form must be type written neatly. The quotation must be entered both in figures and in words. All pages of the bid should be numbered with a running serial number and signed with office stamp by the tenderer.
- (d) University of Delhi reserves the right to reject any or all the tenders, wholly or partly without assigning any reason thereof and shall not be bound to accept the lowest tender.
- (e) The University of Delhi will not be responsible for non-receipt of tender quotations within the specified date and time due to any reasons including postal delay or holidays.
- (f) Tender once submitted shall not be returned to the tenderer in future.
- (g) The Schedule to tender, Instruction to tenderers and General Terms and Conditions of the Contract should also be returned along with the offer.
- (h) Each page of the tender form, the Instructions to the tenderers must be stamped and signed by the person authorized by the tenderer. Full address of the tenderer must be mentioned on the tender forms, failing which the tender may not be considered.
- (i) In case a successful tenderer (on whom purchase order would be placed) fails to comply the order within specified time schedule and terms and condition, the University of Delhi will forfeit the earnest money.
- (j) The earnest money for the successful tenderer shall be returned after successful initiation of the job.
- (k) Unsuccessful tenderer will be refunded earnest money without interest, on application to University of Delhi within 3 months from the tender awarding date.

## **2. ELIGIBILITY CRITERIA**

- (a) A participating vendor should have proven record of marketing and maintenance of Live cell imaging system (on confocal platform).

## **3. PAYMENT TERMS**

- (a) Payment will be made to the agency after satisfactory installation of the system, on-site demonstration of all the offered technical specifications and necessary training.
- (b) NO ADVANCE PAYMENTS WILL BE MADE UNDER ANY CIRCUMSTANCES.

- (c) The rates quoted shall be inclusive of all such taxes such as Goods & Service Tax, VAT, etc., i.e. ***the rates quoted shall be all inclusive***. All the duties/ taxes with respect to the work should be borne and paid by the Tenderer himself. The Office shall not be responsible for any payment/ penalty on this account at any stage. The company shall indemnify the University from all.

#### **4. SELECTION PROCESS**

- (a) A committee specially constituted for the purpose would evaluate the eligibility of tenderers as supported by documentation.
- (b) The Technical evaluation of the bids will be conducted by the Committee at a date, time and venue to be intimated subsequently. The bidders must make a presentation on their bids highlighting their experience and strategy to fulfill scope of the work as given in Annexure I. Evaluation will be based on the presentation and submitted documents. The recommendations of the Technical Committee will be final, which may recommend opening of the price bid based on technical bid evaluation.
- (c) The price bid of only the qualified tenderers will be opened after technical evaluation.

#### **5. VALIDITY OF OFFER**

Tenders submitted by tenderers shall remain valid for a minimum period of 3 (three) months from the date of opening of tenders. The tenderers shall not be entitled during the said period of three months, without consent in writing from University of Delhi, to revoke or cancel their tenders or to change the tenders given or any term thereof. In case of tenderers revoking or cancelling their tenders or varying any terms in regard thereof without consent of University of Delhi in writing, the earnest money deposited by them with their offers, will be forfeited.

#### **6. IMPORTANT DOCUMENTS TO BE SUBMITTED**

In addition to the filled in tender form, tenderers are to provide the following enclosures:

- (a) Documents in support of Company Profile.
- (b) Documents for establishing eligibility.

#### **7. INCOME TAX CLEARANCE CERTIFICATE**

Copy of the latest IT Clearance Certificate in the proforma prescribed by the Govt. Of India should accompany the tender. The IT Clearance Certificate should be in the name of the firm quoting for the work.

#### **8. SALES TAX CLEARANCE CERTIFICATE**

Tenderer must submit copies of Sales Tax registration and clearance certificates.

#### **9. RESOLUTION OF DISPUTES**

University of Delhi, and the vendor shall make every effort to resolve amicably, by direct informal negotiations, any disagreement or dispute arising between them under or in connection with the services provided. If after thirty days from the commencement of such informal negotiations, University of Delhi, and the Vendor have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolution by formal arbitration. Chief Executive Officer, IOE, DU, Delhi, shall appoint a sole Arbitrator of the dispute who will not be related to the contract and whose decision shall be final and binding.

#### **10. JURISDICTION**

All questions, disputes and / or differences arising under and out of, or in connection with the contract if concluded, shall be referred to the relevant Courts of Delhi.

## Annexure – I

### Technical specifications for Live cell imaging system (on confocal platform)

Quotations are invited through CPP portal (e-procurement) under 2-bid system for the “**Live cell imaging system (on confocal platform)**” with FOR INR price for the University of Delhi, South Campus. The live cell imaging system should be based on a fully motorized inverted microscope including bright-field, differential interference contrast (DIC), wide field fluorescence imaging, and confocal imaging. It should be compatible enough to be equally used for **single cells to large tissues of animal and plant model organisms**. The live cell imaging instrument should be able to perform various needs of contemporary biological applications such as colocalization, 3D-imaging, FRET, FRAP, photo-activation/bleaching, and photo-conversion experiments.

The quote should include all taxes and duties for supplying and onsite installation of the equipment as per the following technical specifications and terms and conditions:

#### A. Motorized inverted fluorescence research microscope:

- i. Fully motorized inverted fluorescence research microscope for bright field/DIC/Fluorescence, preferably with dedicated touch screen display for controlling motorized components of the microscope.
- ii. Fully programmable motorized X-Y (preferably joy-stick based) scanning stage, universal sample holders for slides, 35/60 mm petri dish, and other live cell imaging sample holders like 6 well plates and 96 well plates. The system should offer suitable software support for tile, mosaic/tile, and multipoint imaging with spatial memory function. Mark and Find option should also be available with the system.
- iii. The microscope should be fitted with LED light source for transmitted illumination with about 20,000 hours of lifetime and a high-power **LED** for illumination in fluorescence mode.
- iv. The system should include a binocular observation tube with a pair of 10X eyepieces of FN 22 or more.
- v. Motorized 6-position DIC nosepiece, universal motorized condenser NA 0.5 or better with modules for DIC, 6-position fluorescence turret for accommodating fluorescent filters for direct visualization and camera-based imaging.
- vi. The system should offer a motorized port for camera attachment and motorized beam path selection between eye observation, camera, and confocal imaging.

- vii. The system should have high-precision Z-focus drive with at least a **5 nm step size** or better. The dedicated Piezo/Galvo z-drive or precise fast built in z-drive should be used to achieve this.
- viii. The system should offer **more than a 10 mm** focus drive range to accommodate larger samples.
- ix. High resolution confocal grade Plan Apochromat objectives corrected for both UV & visible lines. The microscope should include **5X/NA 0.15** or better, **10X/NA0.40** or better, **20X/NA 0.75** or better, **40X/NA 1.30** or better (oil immersion), and high-resolution **60/63X NA 1.40** or better (oil immersion) objectives. The system should include fully automated DIC accessories for 10x, 20x, 40x, and 60/63x objectives. Motorized DIC condenser-prisms, motorized multi-position DIC slider/turret for objective prisms, motorized polarizer, and motorized analyser should also be included.
- x. Suitable Fluorescence band/long-pass filters compatible for **DAPI/CFP, GFP /AF488/FITC, YFP/AF514, TRITC/Rhodamine/Cy3**, should be offered.
- xi. An active anti-vibration table with compressed air damping, bread board table top for the complete microscope system should be included with the offer. Also, a computer table and table for laser rack, if required, should be offered.

#### **B. Confocal beam path and resolution:**

- i. The quoted system should include laser point scanning and confocal detection unit with built-in spectral GaAsP/HyD detectors. The scanner unit should preferably have dedicated laser ports for UV and Vis lasers. The NIR detection range should be available (**up to 850 nm**) for better penetration depth in the case of deep tissue imaging using Far-Red/NIR dyes.
- ii. The maximum scan resolution offered by the system should be **8192×8192** (= 64 Mega Pixels) pixels or better per channel, and the minimum scan resolution should be down to **16x16** pixels.
- iii. Online acquisition lateral (XY) resolution of **120-140 nm** and axial (Z) resolution of **200-300 nm** for simultaneous two-colour high-resolution imaging.

#### **C. Laser module:**

- i. The following long-life solid-state lasers should be offered with the system. The minimum lifetime should be at least 10,000 hours per laser.

- a) **405/408 nm** (through dedicated laser port for better overlap with the visible port lasers in the image plane) with at least 30 mW or better
- b) **488 nm** with at least 20 mW or better
- c) **514 nm** with at least 20 mW or better
- d) **561 nm** with at least 20 mW or better
- e) **635/638/640 nm** with at least 30 mW or better

#### **D. Scanning modules:**

- i. The system should include high-resolution Galvo scanners with different scan resolutions up to at least **8192x8192** or better for precise and high-resolution imaging.
- ii. The system should offer a scanning speed of **10 fps @ 512x512** scan format, and at least **200 fps @512x16** scan formats for high-speed image acquisition for live-cell imaging.
- iii. The AI-based dynamic image quality improvement facility should be available with the high-speed imaging modality.
- iv. Scanning field: The system should offer **20 to 22 mm field of view** (FOV) or better.
- v. Scanning zoom: Should be from or in-between 1X or 40X or better.
- vi. Pinhole: The system should include a fully automated software-controlled pinhole.

#### **E. Detectors:**

- i. The system should be capable of detection and separation of **at least 4 fluorophores simultaneously**, facilitated by highly sensitive **GaAsP/Silicon/HyD detectors** with **quantum efficiency (QE/PDE)  $50 \pm 5\%$  or more**.
- ii. All detectors should have independent voltage and gain control and True photon counting facility for true quantification capability. Also, the detectors should have an active cooling system for a lower noise level.
- iii. Each detector should be capable of working in intensity mode and lambda mode for spectral imaging and online spectral separation (also applicable for autofluorescence detection/separation) XYZλT.
- iv. The system should have NIR detection capability up to 850 nm or better. This can be achieved by built-in NIR sensitive detectors or by dedicated NIR detectors.

- v. The transmitted-PMT (T-PMT) detector for laser-based morphology/DIC imaging should be offered.
- vi. All the detectors must be **filter-free** spectral type and should be able to be used for spectral lambda scanning mode with spectral **tuning resolution 1 nm or better**.

**F. Online high resolution:**

- i. The system should include a fully automated real-time and online high-resolution imaging attachment with a highly sensitive **multi-pixel photon counter (QE/PDE >55%)** or **dedicated high-resolution detector** for complete vis spectrum.
- ii. All the detectors included with the system should be able to work in high-resolution mode to offer better resolution and confocal mode for normal laser-based imaging.
- iii. The system should be able to achieve lateral (XY) resolution of **120-140 nm** and axial (Z) resolution of **200-300 nm** or better.
- iv. All laser lines for confocal imaging should be used for imaging in high-resolution mode.
- v. The offered system should be able to perform live cell high-resolution Imaging with a frame rate of **10 fps** or better at **512x512** format without compromising on the lateral and axial resolution must be possible for **two or more colors** simultaneously.

**G. Imaging software package:**

- i. Demo version of the software will not be accepted. The full version of the licensed software package with free online updating/upgrading for a minimum of 5 years or more should be included with the offer.
- ii. The offered software should be capable of controlling the motorized components of the microscope, confocal scan head, and laser control, including AOTF and Image acquisition & processing for confocal and high-resolution imaging. It should be capable of saving all system parameters with the image for repeatable or reproducible imaging.
- iii. The offered software should have line, curved line, frame, Z-stack, and time series imaging capabilities. It should be capable of performing standard geometry measurements like length, area, angles etc., including intensity measurements.
- iv. The software should offer automated cell counting and AI-based automated cell/nucleus recognition, co-localization, and histogram analysis with individual parameters, spectral unmixing with fingerprinting/real-time unmixing for separation of overlapping excitation/emission spectra of fluorophores.



- v. The software package should include advanced 3D software to display 3D image data stacks with measuring tools, 3D Visualization and multichannel volume rendering 3D stacks, reconstruction, measurements across z stack, movie co-localization with histogram analysis, intensity profiles for quantification.
- vi. A dedicated Sample Navigator tool for Macro Imaging and Free ROI selection should be part of the software. A tile scanning and stitching module should be included for large sample imaging.

#### **H. Live Cell Imaging:**

- i. The quoted system should include a stage-top live cell incubator with temperature, humidity, and active CO<sub>2</sub> controls, preferably software-controlled.
- ii. The vendor should also supply the CO<sub>2</sub> cylinder and regulator for the system.

#### **I. Control computer, monitor and UPS:**

- i. Latest 64-bit control factory tested computer with Intel Xeon Processor, DDR RAM 64 GB or better, HDD: 4 TB SATA upgradable to STB or better, DVD, Super-Multi SATA + RW, Graphics: AT Fire GL VS200 40B DH DVI, Gigabit Ethernet, Windows 10 64 bit, USB 2.0/3.0, Fire wire, 37/38-inch curved 4K monitor or better.
- ii. A compatible branded UPS must be included with the offer.

#### **J. Warranty and AMC:**

- i. Five years of warranty (**3 years + 2 years**) should be offered along with the system. The vendor should supply the entire system with all necessary accessories and complete system integration of hardware components. The vendor should be responsible for the complete system installation, functioning, maintenance, and training by trained engineers.

### **General Instructions**

- Premium branded instruments should be provided to ensure the high quality and reliability of experimental outcomes.
- A list of at least 10 academic user installations of the quoted and similar equipment within the country should be enclosed. Users contact details should be provided with the list.
- The bidder must quote all items together. Partial quotes will not be accepted. For each item, the make, model and technical specifications, and quantity must be mentioned clearly.

- Bidder should provide a technical brochure and clearly mention the manufacturer's website and brochure URL to verify the technical details/specifications of the quoted system/ models. Instantly making/designing and providing and/or uploading of a Technical Brochure to the bidder's/ manufacturer's website by copying the above-specified technical details will automatically disqualify the bidder(s) without any further correspondence.
- The vendor MUST provide a compliance statement vis-à-vis specifications in a "tabular form" clearly stating the compliance and giving justification, if any, supported by technical literature with clear reference to page number, paragraph, or lines. This statement must be signed, with the company seal, by the tendered for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in the disqualification of the Tender. Please note that the self-prepared compliance statement will be verified with the manufacturer's technical brochure and the website.
- The vendor must certify that relevant spare parts will be available for at least 10 years in the future. The vendor must provide a certificate saying that prompt after-sales service such as regular maintenance, troubleshooting, and fixing will be carried out by company-trained engineers
- **Installation and training:** Vendor must take care of on-site installation, demonstration, and training by a well-trained engineer. Required training for the smooth operation of the instrument should be provided free of charge during and after installation.
- The supplier should have a service centre in Delhi/NCR for quick service within 48 to 72 hours
- The CIF-UDSC purchase committee reserves the right to request the participating vendor for demonstration of all the quoted technical specifications/ capabilities of the offered model, preferably at CIF South Campus, New Delhi-110021, or within the Delhi state. The CIF-UDSC purchase committee reserves the right to disqualify a participating vendor if they fail to demonstrate the quoted technical specification and/or capability of the offered equipment/ model within 10 days of request.

### **Important information**

- The quotation should be addressed to the "Chief Executive Officer, Institute of Eminence, University of Delhi, Delhi-110 007". The quote should be submitted with all terms and conditions and necessary documents latest by the end of the tender date.

- Quotations have to be submitted in a two-bid system. The first part, the technical bid, should consist of all technical details and supporting documents with terms and conditions. The compliance sheet must be filled out by the vendor.
- The second part, the financial bid, should contain item-wise pricing of items mentioned in the technical bid. Both the quotation documents/ bids are to be submitted through GeM/ CPP portal of the Government of India only (e-procurement). Hard copies of the bid will not be accepted.
- The successful bidder must provide a performance bank guarantee (PBG) as per Rule 171 of the GFR 2017, totaling 3% of the value of the main machine quoted, with a validity of 60 days upon completion of the warranty period. The PBG should be in favour of “Chief Executive Officer, Institute of Eminence, University of Delhi, Delhi-110007”. PBG must be provided at the time of installation to avoid delay in payment release.
- The quote should be valid for at least 90 days from the last date of submission of the bid