

**Open Tender Notification for the procurement of “Motorized Fluorescence Microscope with Total Internal Reflection Fluorescence Module” at the Indian Institute of Science, Bangalore**

**(Last date of submission of tenders: 12-April-2021)**

**GTE APPROVAL NO: IISc-GTE-2021-006**

Date: 26.03.2021

Dear Sir/Madam:

Please send your quotation valid for 90 days for the supply of equipment described below. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc. The tender should be submitted in two separate sealed envelopes – one containing the “Technical bid” and other containing the “Commercial bid”, both of which should be duly signed and must reach the undersigned on or before 17:00 hours 12-April-2021.

**Dr. Mahipal Ganji  
Assistant Professor,  
Department of Biochemistry  
Biological Sciences Building  
Indian Institute of Science  
Bangalore - 560012  
Karnataka, India**

## **Motorized Fluorescence Microscope with Total Internal Reflection Fluorescence Module**

### **Specifications:**

#### **A. Microscope body**

1. Inverted motorized microscope with scanning (X, Y, and Z) and automated axial drift correction (hardware) with intermediate magnification changer of 1x/1.5x or 2x built in the base of the microscope itself.
2. Double-deck motorized filter turret. Should be possible to accommodate two cameras to two output ports.
3. High-speed motorized XY-stage (encoded) controlled by a joy stick with high stability for fast lateral scanning.
4. Z focus in 10 nm steps or lower
5. Continuous automated drift correction in IR range (LED or laser), controllable both with the microscope control unit and remote control. Drift correction feedback frequency should be more 100 Hz.
6. D imaging-capable i.e. X, Y, Z, wavelength ( $\lambda$ ), time lapse, and multi point
7. Objectives: U Plan semi apochromat objective 60X oil with NA of 1.4 or better, Plan Super apochromat objective 100X oil with NA of 1.4 or better, U Apochromat high NA (1.45 to 1.49) objective for TIRF microscopy 100X/150X oil.
8. Motorized condenser with DIC attachment
9. Tilttable eyepiece tube and eyepieces
10. Transmitted illumination source: Halogen lamp or LED for brightfield microscopy with for sequential imaging with fluorescence
11. Epi-fluorescence illumination source: High power LED or Xenon arc lamp with ability to switch between laser illumination and epifluorescence illumination

12. Fluorescence filter cubes with narrow band excitation, bandpass barrier filters, dichroic beam splitters for the following excitation/emission: DAPI/Hoechst, FITC/GFP, TRITC/Rhodamine, Texas Red/RFP, CY5, along with four empty filter cubes
13. Motorized epi-filter turret
14. Adapter for 35-mm dishes, multi-well dishes and slides
15. Integrated vibration isolation table of 900 mm X 1200 mm. Completely isolated from the controlling computer
16. Optionally 3D Cylindrical Lens Kit: Please do include a 3D Cylindrical Lens kit suitable for STORM/DNA-PAINT studies.
17. A Z-Piezo stage with a maximum range of 100 um and minimum step size of 5 nm with 2 to 3 mm/sec or better should also be offered with all suitable adapters like, 35mm Petri Dish, 60mm Petri Dish, 96 Well Plate Holder etc. as standard.
18. All the cabling and controls required to integrate all the parts and operate from the controlling computer.

## **B. Total Internal Reflection Fluorescence (TIRF) Module**

1. Motorized TIRF module with multi-wavelength TIRF capability, with TIRF tuning for all wavelengths
2. The laser illumination should be configured with a different turret than the epifluorescence turret
3. Individual bandpass emission filter cube for 561 nm excitation for Cy3/Cy3B/ATTO560 and a filter cube for quad-band emission filters for 405/488/532/640 nm excitation. Filter should contain complete set with dichroic and emission filters. Reflected wavefront error of dichroic filters should be less than  $1-\lambda$ . Include additional five empty filter cubes.
3. All the cabling, controls required to integrate, align, mounts for integrating illumination devices and detectors and operate from the controlling computer and the microscope system described above

### **C. Warm Plate:**

1. The System should be provided with Warm Plate metal type that could be used from ambient temperature to 60 °C as standard and should be flush fitting onto the mechanical stage.

### **D. Detector**

1. Back-illuminated sCMOS camera

2. 6.5µm pixel size, 2048x2048 active pixels, image area of 13.3x13.3mm, read noise <math><1.0e^-</math>, capability to read in 11/12/16 bit, dark current <math><0.5e^-</math>, full frame rate of 40 fps, QE>95%, optionally Camera should also be able to be connected to a water chiller for noise free operation

3. C-mount adapter

4. All the cabling and controls required to integrate, align and operate from the controlling computer

### **E. System control and application software**

1. Software for fully automated acquisition and device control

2. Ability to control all parts of the integrated system comprising the microscope body, laser combiner (not included in this tender), TIRF module, and sCMOS detector

3. Post-acquisition image processing capability

### **F. Computer Workstation**

1. Minimum specifications – Xeon core processor, 32 GB RAM or better; 4 TB HDD, 0.5 TB SSD; 64-bit OS; high resolution 24-inch display; 4GB NVIDIA GPU card

2. 5kVA UPS for all components of the microscope and controlling computer

3. System should also be capable of integrating the laser/laser combiner onto the software quoted and all necessary components or hardware should also be included in the offer as standard

### **G. Training and Warranty**

1. On-site installation and training

2. 5 years complete system warranty

The above-mentioned technical specifications are highly desirable. However, lower technical specifications may be considered if the above-mentioned specifications are found to be unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into considerations its financial constraints and technical preferences.

**Terms and Conditions:**

1. The quotations should be submitted in two bids system; i.e., Technical bid, and Commercial bid.

a. The technical bid must include all details of technical specifications of the instrument along with commercial terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the evaluation of the technical bid. Please also include warranty terms and any other information on upgradation terms in the technical bid.

b. The commercial bid must include the price of the instrument in Indian/Foreign currency indicating break up of:

I. For goods:

i. Price (CIF, Bangalore). Applicable Custom Duty will be borne by the Institute.

ii. Installation, commissioning and training charges, including any incidental expenses, if any

iii. Agency commission charges, if any

iv. Provide certificates for country origin of manufacturing for each line item

II. Price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (fixed and ready to use) in our facility

c. Both the Technical and Commercial bid should be put in separate sealed envelopes, and put together in another cover stating “Motorized Fluorescence Microscope with Total Internal Reflection Fluorescence Module” and should reach us on or before 17:00 hours 12-April-2021

2. The vendor should have a good track record of having previously supplied Motorized Fluorescence Microscope with Total Internal Reflection Fluorescence microscope in India or abroad (please furnish details)
3. The vendor should have qualified technical service personnel based in Bangalore capable of servicing the equipment
4. The payment will be through a letter of credit
5. The lead time for the delivery of the equipment should not be more than three months from the date of receipt of purchase order or two months from the date of receipt of Letter of Credit details (whichever is earlier)
6. The validity period of the quotation should be 90 days
7. Import code of the items should be indicated
8. If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended
9. The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time period to award of construct without thereby incurring any liability of the affected bidder or bidders