

Indian Institute of Technology Kanpur
Department of Biological Sciences & Bioengineering

Enquiry Number: BSBE/IITK/AK/2017-2018/NC-04

Dated: 22-02-2018

Sub.: Inquiry for the supply of: “**Confocal Fluorescence Microscope**”

Opening date: February 23, 2018 at 10:00 AM

Closing date: March 13, 2018 at 5:00 PM

Sealed quotes (technical bid and price bid separately sealed) are invited for the above-mentioned laboratory products as per the specifications given in the next page.

Your quote should mention/include the following:

- Maximum discount if any should be offered and mentioned.
- Quoted price should include the cost for installation, warranty, AMC and required accessories
- Validity of the quote at least for 90 days.
- FOB (indicating port of shipment) and CIF (New Delhi) values should be quoted separately if import is required. For quotes in INR, the price quote should be for delivery at Kanpur.
- The quote should cover insurance for transport up to Kanpur.
- Indian agency commission if applicable (should be certified by the principal if no agency commission is applicable) in case of import.
- Authorization certificate from the principal if you are a local agent.
- Terms and conditions for the payment, including the banker’s name of the principal and the account number, if any, for electronic transfer.
- Payments terms: 100% after successful installation and commissioning.
- Technical literature to support your product (in technical bid).
- Users’ list with contact address in technical bid.
- Concessional rate of GST (@5%) will be applicable with reference to Notification No. 45/2017- Central Tax (Rate) dated 14/11/2017 for Indian manufactures. We will provide relevant certificate for this purpose. On import items for research purpose presently the GST applicable is 0% (zero).
- Mere compliance is not sufficient, the technical details must be supported by detailed technical datasheets of the offered product(s)
- The Institute reserves the right of accepting and rejecting any quotations without assigning any reason.

Note: Only principal manufacturers or authorized representatives are requested to send the quote along with proper certificates. The envelope should be marked as “Quote for Confocal Fluorescence Microscope” and posted to:

Prof. Ashok Kumar

Department of Biological Sciences & Bioengineering

Indian Institute of Technology Kanpur,

Kanpur 208016 (UP), INDIA

SPECIFICATIONS

A. FULLY MOTORIZED & COMPUTER CONTROLLED INVERTED CONFOCAL FLUORESCENCE MICROSCOPE

- Point Scanning Spectral Confocal microscope with continuously variable confocal pinhole capable of imaging up to 8 color staining. Suitable lasers and AOTF control to image dyes and “Fluorescence Proteins” within the spectral range of GFP, Alexa 555, DRAQ5 etc. the scanner should be able to image in the modes XY, XZ, Xt, XYZ, XYt, XYλ, XYZt. The detection system should be either high transmission prism based with PMT detector for λ scanning or it should be high efficient grating based coupled with at-least one 32 array detectors. Minimum scan resolution of 2k x 2k. with atleast a line frequency of 800Hz.
- Bright field, Fluorescence and DIC observations.
- Motorized Z-focus. High precision built-in Z-focus drive with step resolution of 10 nm or better illumination or equivalent power for BF & DIC and fluorescence
- Scanning stage for multi-point multiwell imaging
- Holders for slides, 35mm, 60mm culture dishes and Multiwell plates shall be provided
- Motorized 6-8 position nosepiece with slots for DIC prisms
- Motorized 6-8 condenser polarizer and analyzer with DIC attachments
- The system should be equipped with motorized autofocus mechanism for conducting long duration time-lapse live cell imaging without focus drift
- Monochrome cooled camera that should be controlled by confocal software

B. CONFOCAL LASER SCAN HEAD WITH BUILT-IN DETECTORS

- High speed galvo scanner
- Scanner should be capable of acquiring minimum 5fps @ 512 x 512-pixel resolution
- The system should have dual scan capability of real ROI or equivalent with fast scan for bleaching/photoactivation & normal scan for Imaging
- Motorized/variable pin-hole
- Scanner unit should have laser ports for Vis, UV and IR lasers
- The scanner should be capable of dynamic live cell time lapse imaging with temporal resolution of 5 milliseconds

C. DETECTORS:

- Point scanning laser confocal detection unit with built-in high sensitive GaAsP/HyD or equivalent spectral detectors with quantum efficiency more than 45% including high transmission optics
- Confocal detection should include simultaneous detection and separation of 4 fluorophores or more based on above high sensitive detectors.

D. LASERS & LASER COMBINER:

- At least R: 10 mW 635 nm, G: 10 mW 532 nm, B: 10 mW 488 nm with Accousto Optical Tunable filter
- Additional UV-405 (25mW) Laser source

- An AOTF controlled laser combiner
- All laser should be connected to the scan head through fiber optic cable and controlled through AOTF for fast laser switching and attenuation in pixel precise synchronization with the laser scanner for ROI scan for FRET, FRAP, Photoactivation/conversion experiments and image analysis.
- The system should be able to perform multicolor imaging in long duration live cell imaging. A computerized AOTF device should control all the laser lines for fast laser switching and attenuation
- All the lasers should be connected to the scan head controlled by AOTF. All the visible and UV laser lines should be computer controlled for fast laser switching and attenuation in synchronization with the scanner

E. CONTROL COMPUTER: ACQUISITION AND ANALYSIS SOFTWARE

- The image acquisition and analysis software should have all standard confocal features such as ROI imaging bleaching FRET/FRAP/Photoactivation modules for acquisition and analysis. XYZ time lapse, spectral profiling in all the channels and multi-channel sequential and simultaneous image acquisition. Intensity profile over Z time, online spectral fingerprinting/ unmixing/deconvolution, High Dynamic range imaging, 2 D image deconvolution of confocal data sets, Measurements, batch processing, A dedicated 3D&4D rendering software, real time stitching etc.
- Saving of all system parameters with the image for repeatable/reproducible imaging
- Line, curved line, frame, Z-stack, Time series imaging capabilities
- Standard geometry Measurements like length, areas, angles etc. including intensity measurements. Co-localization and histogram analysis with individual parameters
- Additional offline software with all the analysis modules as above
- Latest printer, 2TB external HDD for data backup
- An appropriate UPS (5KVA or above) to give a backup of the entire system for at least 30minutes. Additional 1KVA UPS to support the offline system for 30min
- Two factory recommended workstations and monitors
- High Power workstation with Windows 7 Professional (64 bit), 8GB RAM, 2TB SATA HDD, 1GB high performance GPU

F. INSTALLATION, COMMISSIONING AND APPLICATION TRAINING

- The part number of each part should be indicated along with the page number in the catalog. The bidders should clearly specify the after sales/service/application support capabilities
- Provide all information as regards preinstallation requirements (i.e. room, environment) for system installation.
- Provide a detailed list of users of the system in India/abroad with contact details
- Free of cost at the site for minimum 10 working days for a group of students and staff from operating the instrument, data collection and detail data analysis at our laboratory
- Future support as and when required must be provided at our institute

- Demonstration of the claimed parameters like resolution etc. should be done on a standard sample
- All the necessary items required to install the above system, other than power and water supply, should be included in the offer. Supply of all the relevant manuals and documents in printed format

G. OPTIONAL ACCESSORIES

- Live cell imaging setup
- A complete automated on stage environmental control chamber (incubator) for long-term live cell time-lapse imaging with temperature, CO₂, O₂ and Humidity control, with safety features should be provided. The incubation parameters should be under control of the confocal software

H. WARRANTY

- At least 3-year service warranty for microscope parts and labor
- Optional: Please also quote the financial involvement for five years on site Annual Maintenance Contract (AMC) after normal Warranty separately
- Additional requirements:
- The supplier should mention the after sales/service/application support capabilities
- All specifications to be supported by documentary proof from principal
- The principal has to demonstrate and prove experimentally the technical specifications asked