

**Open tender notification for the procurement of “fully motorized inverted microscope with hardware based (structured illumination) optical sectioning module” at the Indian Institute of Science, Bangalore**

**(Last date of submission of tenders: 10-April-2021)  
(TENDER FROM GLOBAL VENDORS)**

Date: 26.02.2021

To whom it may concern

This is a Request For Quote (RFQ) from global manufacturers for the supply of “fully motorized inverted microscope with hardware based (structured illumination) optical sectioning module”, as a part of a tender for the Department of Microbiology and Cell Biology at the Indian Institute of Science.

1. Please send your quotation valid for 90 days for the supply of equipment described below.
2. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc.
3. 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 10-April-2021
4. The compliance table should include all the items and in the same order. The first column should describe your compliance in a “Yes” or “No” response. If “No” the second column should state the extent of deviation. The “third” column should state the reasons for the deviation if any. The fourth column can be used to compare your solution with that of your competitors or provide details as requested in the technical requirements table below.

**SPECIFICATIONS FOR FULLY MOTORIZED INVERTED MICROSCOPE WITH HARDWARE BASED (STRUCTURED ILLUMINATION) OPTICAL SECTIONING MODULE.**

ITEM	SPECIFICATION
<b>Microscope stand</b>	Fully motorized inverted Microscope stand with apochromatically corrected fluorescence beam path, integrated Light Intensity Manager and Contrast Manager for bright field applications and dedicated body mounted TFT/LCD display for convenient operation and control of motorized components of the microscope. Inbuilt Motorized Z-focus drive with a minimum step resolution of 10 nm or better, fine and coarse focus knob on left and right side for convenient operation.
<b>Motorized XY scanning Stage</b>	Motorized XY scanning stage with travel range of 130X 100 mm or larger, stage surface 325 mm x 144 mm, max speed 50 mm/s, resolution: 0.1 $\mu$ m - reproducibility: +/- 1 $\mu$ m, absolute accuracy: +/- 5 $\mu$ m Joystick to control the stage movement with 2 or more speed range. universal specimen holder for slides, different sizes of Petri dishes and multi-well plates,
<b>Eye Piece &amp; camera ports</b>	Paired wide-field focusable 10X eye-pieces with FOV 23 or better and adjustable diopter setting of minimum +/-5. System should have both left and right port with 3 way motorized switching (100% vis : 0% LR / 0% vis : 100% L

	/ 0% vis : 100% R)
<b>Transmitted Illumination</b>	100W (Halogen light source) with fully motorized control of transmitted illumination. Fully motorized transmitted light axis with motorized shutter for Multi-dimensional Imaging. Suitable green and blue filters should be supplied.
<b>Motorized Condenser</b>	Motorized, Universal condenser with a N.A of 0.55 or better (with integrated polarizer) for Ph, DIC, BF. Preferably with 6 position turret disks. Motorized condenser should work for all objectives.
<b>Motorized Objective Nosepiece</b>	Six or more position motorized objective nosepiece integrated to IR LED based long term focus drift compensation module. The nosepiece should have 6 dedicated DIC slider position for objective specific DIC prism sliders.
<b>Objectives</b>	High N.A, high light transmission efficient Plan- Semi Apochromat or Plan Apochromat Objectives for BF, PH , Fluorescence and DIC application  20X - Plan Apochromat DIC Objective N.A. 0.80 or better 40X- Semi Apochromat Objective N.A. 1.3 Oil DIC or better 63X- Plan- Apochromatic NA 1.4 Oil, DIC or better  <b>Complete motorized DIC accessories should be quoted for 20x, 40X and 63X.</b>
<b>Fluorescence Attachments</b>	Motorized Fluorescence illumination and operation
<b>Reflected light Illumination</b>	Fluorescence attachment with 120W Cooled Metal Halide Illuminator including built in power supply, lamp module, infrared filter and CAN bus cable. Fluorescence light source with integrated motorized shutter control. Two lamps to be provided.
<b>Reflector Turret for Fluorescence Filters</b>	Motorized 6 position reflector turrets. All the filters should be shift free.
<b>Filters</b>	High quality Band Pass (BP) Fluorescence filters for imaging of DAPI, GFP, RFP & Cy5 should be quoted
<b>On stage Incubation</b>	Stage top incubation including Temperature, Humidity control should be provided. The quoted incubation should be upgradable to CO2 and O2 module in the future. The control functionally should be available on microscope touch control panel.
<b>Camera (Monochrome)</b>	High resolution Cooled CMOS digital microscopy Monochrome camera for Fluorescence imaging, 5 Mega Pixel or better, Chip size : equivalent to 2/3" (11 mm diagonal) Spectral range: With protection glass app. 350 nm to 1000 nm camera should be able to achieve 60 fps or more in full frame and up to 115 fps or better @ 1920 x 1028 in binning mode. Bit-depth of 14 bit. Quantum Efficiency of more than 70% or better.
<b>Optical Sectioning Module</b>	Structured Illumination through grids with Automatic Grid Change Technology for optical sectioning preferably with higher light transmission efficiency. A special grid illumination device to be incorporated in the FL illumination optics of the microscope with easy switchover facility between normal FL illumination and grid illumination (for optical sectioning).  Motorized and automatic grid focusing and super imposition of the same into

	<p>the image plane for different fluorescence channels through accurate and calibrated scanning mechanism should be possible. Automatic multidimensional acquisition of optical sections. Seamlessly integrated hardware and software from the same manufacturer for better compatibility.</p> <p>Optical sectioning module should be factory inbuilt with the microscope and should be provided by same manufacturer. Objective specific selection of different Grid frequencies to match the numerical aperture of the objective and wavelength of fluorescence for multichannel imaging should be automatic.</p>
<b>Software</b>	
<b>System Control</b>	Automatic and interactive Microscope control
<b>Image Acquisition</b>	Should be able to (but not limited to) image capture, movie acquisition, fast acquisition, Automatic Multi channel Image acquisition, ROI imaging, Z stack acquisition, time lapse, Tiles & multi position imaging, module to perform inhomogeneous experiments, should have future Provision for wide-field acquisition, optical sectioning and deconvolution with optical sectioning. Retaining of acquisition parameters for re-use should be possible.
<b>Image Processing</b>	Basic adjustment of brightness, contrast and gamma; adjustment of colour in BF images; correction of bleaching effect in Z stack images; pixel shift correction; Image smoothening, Image Sharpening.
<b>Image Analysis &amp; Documentation</b>	Interactive and basic measurement such as Length, Angle, diameter, Area, Perimeter Gray value measurement along a line / Intensity measurement Statistical analysis and evaluation of Data. Creation of User defined reports Module for visualizing 3D image stacks should be quoted, helpful for display of multi-dimensional image stacks as 3D volume models, Time series (4D) rendering.
<b>COMPUTER , UPS</b>	A suitable High-End Computer System should be provided along with the system along with 2 KVA UPS
<b>Warranty and AMC</b>	2 years of complete warranty and AMC to be offered separately for additional 2 years

**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 "Specifications for fully motorized inverted microscope with

hardware based (structured illumination) optical sectioning module" and should reach us on or before 17:00 hours 10-April-2021

- 2) The vendor should have a good track record of having previously supplied at least 10 same optical section hardware-based technology in India in last two years (please furnish details)
- 3) The vendor should have team of dedicated engineers for application and service support based out of Bangalore
- 4) The lead time for the delivery of the equipment should not be more than three months from the date of receipt of purchase order
- 5) The validity period of the quotation should be 90 days
- 6) Import code of the items should be indicated
- 7) 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.
- 8) 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
- 9) Please submit the proposal to the following address: The Chair, Department of Microbiology and Cell Biology, Indian Institute of Science, C. V. Raman Avenue, Bangalore 560012.