



INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

GT ROAD, KALYANPUR, KANPUR – 208016

UTTAR PRADESH, INDIA

TENDER REFERENCE NO.: IITK/BSBE/AP/2021-2022/NC-17

BID SUBMISSION END DATE- 18.01.2022

TENDER DOCUMENTS

For

“Purchase of Research Grade Inverted Microscope & with Fluorescence & High-Resolution Digital Camera”

Tender document

Department of Biological Sciences & Bioengineering
Indian Institute of Technology Kanpur
Kanpur (UP) 208016 India

Enquiry date: **December 21st, 2021**

Enquiry No: **IITK/BSBE/AP/2021-22/NC-17**

Sealed quotations are invited for **Research Grade Inverted Microscope & with Fluorescence & High-Resolution Digital Camera**. The detailed specification is described below.

Specifications of the Research Grade Inverted Microscope & with Fluorescence & High-Resolution Digital Camera:

Microscope Body: Simple waterproof structure, Microscope body with Infinity corrected optical system should have a double deck structure to add intermediate attachments (Mot. fl. Turret, right side port, magnification changer, laser input etc.), The same body should be upgradable to motorization and DIC in future, System should have minimum 2 ports, The system should have a light path selection of 0:100/50:50/100:0 (Left side port: BI port). Front operation for condenser focussing for perfect Koehler illumination and locking. Microscope should essentially be upgradable to motorization of nosepiece in future apart from motorized fluorescence turret, motorized condenser. The frame design should be as such to custom built a configuration in the optical path by even removing the fl. Turret unit.

Nosepiece: Sextuple coded revolving nosepiece to accommodate six objectives at a time. The nosepiece should have a slot to attach analyzer/DIC prism for respective contrast techniques. The nosepiece should have sensor through which the software can read and recall the position, magnification and calibration values for each. The respective accessories will be bought in future.

Focusing system: Should have coaxial coarse and fine focusing knob on both sides with option of upgradation for Motorized Z focus.

Illumination: 12V 100W Pre centered Halogen with power supply. Should come with provision of light intensity control. Respective filters for Green interference, heat absorbing filter and blue filter should be provided

Eyepieces: Widefield binocular eyepiece tube inclined at 30 degree or less for improved observation efficiency, provided with paired widefield eyepieces 10X with Field of view of 22mm.

Stage: Rectangular mechanical right hand stage with fixed handle. Enough travelling range 114mm and 75mm (XY) applied for slide glass, 35mm dish as well as multi-well plate. circle stage inserts included. Sample holder for slide glass, 35mm dish. Stage stopper function is implemented for timelapse or operation on stage.

Condenser: Long working distance universal condenser NA 0.55, W.D. 27mm, positions available for optical devices such as Phase and DIC. Phase rings for 10X and 20X objectives should be quoted.

Objectives: Plan Achromat Phase objective 10x/0.25 WD 10.6mm Long working distance Plan Semi Apochromat phase contrast objective 20X N.A. 0.45 W.D. 6.6-7.8 (c.c 0-2). Universal Plan Apochromat 40X Objective with N.A 1.40 and W.D 0.13mm.

Epi fluorescence: Coded Epi fluorescence turret with built in shutter should accommodate minimum 8-10 filter cubes. The epi fluorescence turret should have sensor through which the software can read and recall the position, and calibration values for each fluorescence filter cube. The respective accessories will be bought in future.

Fl. Light Source: Intense, broad-spectrum LED illumination for imaging most common fluorescent stains. Spectral coverage is from the UV (DAPI excitation) to the Red region (Cy5 excitation). Operation is by a remote control pod with instant on/off and intensity control from 0-100%. The lifetime of the light source should be minimum 25,000 hours. The intensity and on/off should be controlled by the same imaging software quoted.

Fl Filter Cubes: Narrow band Filter **Blue excitation**, with exciter filter BP470-495, dichroic beam splitter DM505 and barrier filter BA510-550. Narrow Band Filter **Green excitation** with exciter filter BP540-550, dichroic beam splitter DM570 and barrier filter BA575-625. One empty filter cube for specialized filter combination should be provided.

C Mount Adapter: A Centrale C Mount adapter with reducing coupler of 0.5X.

Digital Camera: Scientific Digital monochrome camera with Image Sensor should be backside illuminated monochrome CMOS with Sensor Size 1/1.8 inch (7.41 mm × 4.98 mm), the camera should have 6.4 MP Resolution and binning of 2X2, pixel size of 2.4 × 2.4 μm, Exposure Time from 13 μs to 25s, fast frame rates of up to 60 frames per second (fps) and up to 45FPS at full resolution of 6.4MP. The camera should be passively cooled and should have time saving features of active noise reduction, fast live image in low light conditions, visual assistant for manual focus, Hot pixel calibration, Sharpness filter etc.

Analysis Software: Fully compatible for Bright field, Phase Contrast as well as immunofluorescence imaging and analysis with features for overlay multiple images, document groups for side-by-side image comparison. Touch count/Object Count Facility to count objects, make several classes and name them and export to excel files or workbooks. Fl. Channel Merging and extraction, Time-lapse imaging at specified interval, Manual Multiple image alignment based on live image, Manual Z axis imaging, Geometry /combine /filter processing, Multiple Image Stitching, Phase Analysis, Region and line measurements, Documentation and collaboration. User experience customization, Movie playback, Tile view, Snap/ movie acquisition, Manual EFI imaging, views of 3D images, Interactive measurements. Camera should be capable to imaging in both Monochrome and colour mode and generating report overlay. Another Tissue culture FL Microscope stand with quadruple revolving nosepiece with LED transmitted light true Koehler illumination for bright field and phase contrast microscopy. Optical system must be infinity corrected for maximum S/N ratio and best optical performance from UV to near-infrared.

Observation Tube: Fixed Trinocular observation tube with Interpupillary distance adjustment (F.N.22). It should have two eyepoints high and low for different height users.

Mechanical Stage: Mechanical Stage with flexible right hand low drive control along with universal holder. Stage movement should have X=110mm, Y=74mm with extension plate if required.

Light Source: LED Illuminator for BF with lifetime of more than 20,000 Hours.

Condenser: Long Working Distance Condenser precented for BF/Ph, N.A. 0.3 and W.D. 72 mm or better,

and free working distance of more than 185mm for cell factories, Phase slider for phase contrast application application with single position for 4X-40X and one position for 2X Objective for future upgradation.

Objectives: Bright Field Plan Achromat Integrated Phase Contrast lens 10x (N.A. .25, WD 8.8mm), Integrated Phase Phase 20X (N.A. 0.4, WD 3.2mm), Long working distance Plan Semi-Apochromat 40X/0.6, W.D. 3 – 4.2mm

Eyepieces: Wide-field paired eyepieces 10X (F. N. 22) or better. Dust cover, ND filter daylight filter.

FLUORESCENCE ILLUMINATOR:

Reflected light fluorescence illuminator equipped with field stop, minimum 3-position fluorescence slider with Blue excitation filter set, Green excitation filter set and UV filter set. FL Filters for FITC/GFP/Alexa 488 and TRITC/Cy3/Rhodamine etc. fluorescence Dyes..

Fluorescence Light Source: *Pre-centred mercury/metal halide illuminator. 120W/130W with built-in attenuator, with a life time of approx.. 2,000 Hrs. The light source should be connected to the microscope with a fiber fiber to avoid direct heat transfer from the lamp.*

PC: One Branded Intel i5 processor, 8 GB RAM, DVD RW, 1TB HDD, Genuine Windows 10 OS (64-bit), 24 " TFT Monitor, Keyboard & mouse.

Microforge: Micro forge is an instrument which enables production of micropipette while seeing the tip under built-in microscope. The micro forge fabricates various kinds of pipette by micro-work of cutting, fire-polishing, bending and forming a spike in needs of experiment as per user preference. All fine controls are performed by reliable knobs installed on the microscope. The readout of heater level which is essential for the work is indicated indicated on display. The heater is turned on and off with foot switch. The LED lamp as the light source allows brightness adjustment from low to high. Convertible glass capillaries: 1mm, 1.2mm, 1.5mm. Accessories to be included: Foot Switch, AC Power Cord. Dedicated Pipette Holder, Allen Wrench, Spare Heater, Silicone Rubber Gasket. Eyepieces 15X, objective 5X, 35X.

The microscope, camera and software should be from the same manufacturer for better integration and no issues with software updates.

Point wise technical compliance statement should be attached.

The microscope should be upgradable for stepwise motorization, DIC and polarization etc in future.

The supplier should have direct technical and application support from the Principal Company in India.

Bidders must provide the respective web links (of the manufacturer's website) for the quoted microscope

Quotations must be addressed to :

Dr. Appu Kumar Singh

Lab18

Department of Biological Sciences & Bioengineering

Indian Institute of Technology Kanpur

Kanpur 208 016, India

Email: singhappu@iitk.ac.in, nkhullar@iitk.ac.in

Terms and Conditions:

1. All equipment must be compatible with Indian electrical standards and codes. Engineering documentation on the physical sizes and weights of all major and minor components must be submitted.
2. IIT Kanpur is fully exempted from payment of GST on Imported Goods against our DSIR certificate.
3. IIT Kanpur is partially exempted from payment of Customs Duty (We will provide Custom Duty Exemption Certificate, CD applicable is 5.5%).
4. TENDER Specific Manufacturer Authorization Form from OEM Required.
5. The Institute reserves the right of accepting or rejecting any/all quotations without assigning any reason thereof.
6. All prices should be **F.O.R.**
7. Installation by OEM is preferred.

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date: _____

To,

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: -

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:
_____ as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
(Signature of the Bidder, with Official Seal)

Declaration for Local Content

(To be given on Company Letter Head - For tender value below Rs.10 Crores)

(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 Crores)

Date: _____

To,
The Director,
Indian Institute of Technology Kanpur,
GT Road, Kalyanpur, Kanpur -208016

Sub: Declaration of Local content

Tender Reference No: _____

Name of Tender / Work: -

1. Country of Origin of Goods being offered: _____
2. We hereby declare that items offered has _____% local content.

“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

*“*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.”*

**Yours Faithfully,
(Signature of the Bidder, with Official Seal)**