

Indian Institute of Technology - Kanpur
Advanced Centre for Material Science

Enquiry Number: ACMS/AU/ 2012-13/ Live Cell Imaging

Sub.: Live cell/tissue imaging facility which includes high-end multi-photon and confocal imaging system with high sensitive detectors

Closing date: 21/03/2013

Sealed quotes (technical bid and price separately sealed) are invited for establishing a live cell/tissue imaging facility which includes high-end multi-photon and confocal imaging system with high sensitive detectors as per the technical. Individual components of the facility and the essential/desired technical features of the facility are 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 installation and training cost.
- Validity at least for 90 days.
- Warranty period for the instrument (at least three years from installation and additional 2 years onsite free AMC).
- FOB (indicating port of shipment) and CIF (New Delhi) values separately if requires import.
- 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.
- Include proprietary item certificate if applicable.
- Technical literature to support your product.
- Users' list with contact address.

The quote (in duplicate) should reach the undersigned on or before March 21, 2013. The envelope should be marked as "*Quote for the supply of advanced multiphoton & confocal imaging system with high sensitive detectors for live cell imaging*".

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Component of the Live cell/tissue imaging facility and the essential/desired features

Article required: #1: High-end Inverted fluorescence microscope system with DIC attachment (Quantity 1)

Specification should be:

- Motorized focus drive (min. step width 10 nm), with touch screen and remote operation options
- TFT touchscreen control panel,
- 1x tube lens to fit with fixed 1-position
- Tube lens mount or 3-position optovar turret motor
- Keys for switching Transmitted Light/Reflected Light illumination
- Should be compatible with laser scanning head, and multiphoton attachments.

#2: Definite Focus Unit with IR LED based Focus Drift Compensation

Specification should be:

- Objective nosepiece motor
- Sensor Module Definite Focus
- 6-position objective nosepiece
- Definite Focus DIC motor
- Beam combiner module for Definite Focus for confocal systems for multiphoton excitation

#3: Programmable Motorized X-Y Scanning Stage must include accessories for ultrafast Z-Stack Imaging and analyses

#4: Other features/components/accessories for the microscope:

- **Transmitted Light Illumination**
Halogen lamp 12V 100W (5 numbers)

- **Epi-fluorescence Attachment**
6 positions reflector turret motor

- ❖ **Filter sets:**

1. **DAPI**
2. **Rhodamin/TRITC**
3. **FITC/GFP**
4. **YFP**
5. **CFP**

- ❖ **Metal Halide FL Illumination System with PC Control**

- ❖ **High Resolution Plan Apochromatic (UV-VIS-IR) Objectives for Confocal & Multiphoton**

1. Plan-Apochromat 10X (WD=2.1mm)
2. Plan-Apochromat 20X (WD=0.55mm)
3. Plan-Apochromat 40X (Oil, WD=0.13mm), DIC, UV, VIS, IR
4. Plan-Apochromat 63X (Oil, WD=0.19mm), DIC

5. Plan-Apochromat 25x, DIC for oil, water or glycerine immersion (D=0-0.17mm) (WD=0.57mm at D=0.17mm)
6. C-Apochromat 40x (D=0.14-0.19mm) (WD=0.28mm at D=0.17mm), UV, VIS, IR

- ❖ Condensers 0.55 H, Ph1, Ph2, Ph3, DIC, 6 positions, motor
- ❖ Eyepiece 10x/23
- ❖ Suitable DIC attachments including analyzers and polarizers

- **Should include programmable & Computer Controlled Incubation System (stage incubator, temperature control, heating inserts for multiple dishes and chambered slides, CO₂ module, and humidity control) compatible for from Confocal microscopy**

#5: High Resolution Digital Microscopy Camera with video adapter (Quantity 1)

Specification should be:

- Mid Range Monochrome with driver and IR barrier filter
- Number of Pixels: 1388 (H) x 1040 (V) = 1.4 Mega pixel
- Pixel size: 6.45 m x 6.45 μm
- Chip size: 8.7 mm x 6.9 mm
- Spectral range: With protection glass app. 350 to 1000 nm
- With IR barrier filter app. 350 nm to 700 nm
- Dynamic Range: Typical >2200 : 1
- Integration Time: 1 ms to 60 s
- Cooling: One stage Peltier cooling

Desirable fast acquisition capability

#6: Spectral Confocal Scan Head with 32 Channel GaAsP Detection System + 2 Cooled PMT Detectors Including Ar 458/488/514 nm, DPSS 561 nm & HeNe 633nm lasers.

This system must be capable of simultaneous acquisition & separation of 10 fluorophores and software modules for controlling all motorized components of microscope, Scan head, Laser module, AOTF & Digital camera.

#7: Needed necessary accessories for Fluorescence Correlation and Fluorescence Cross Correlation Spectroscopy

#8: Tunable TiSp femtosecond laser with automated dispersion compensation for Multiphoton

Specification should be:

- Peak Power Specifications : >56 kW at 690 nm
>150 kW at 710 nm
>150 kW at 920 nm

>34 kW at 1040 nm

- Tuning Range : 690–1040 nm
- PulseWidth : <100 fs
- Noise :<0.15%
- Output Power Stability :<±1%
- Spatial mode: TEM₀₀, M₂ <1.1
- Astigmatism: <10%
- Polarization : Horizontal >500:1
- Pointing Stability: <50 μrad/100 nm

#9: Laser coupling unit

#10: 2 channel non-descanned detector in reflected light for multiphoton imaging for shortest possible light path for the emitted light

#11: 2 channel non-descanned detector with binary GaAsP module for increased sensitivity more quantum efficiency.

#12: Application Software including computer, monitor(s) for operating the confocal multiphoton live imaging system including the one for FRAP, FRET

#13: Transmitted light detector for bright field and DIC

#14: System table with active air damped table for both the microscope facility and the workstations

#15: UPS for the entire system, with battery backup for minimum 30 minutes

#16: One additional PC image analyses and storage.

17: Should also quote for CO₂ incubator (170 liters) with humidity control and decontamination program - air jacketed.

18: One Biosafety cabinet (Class II) for culture handling.
