



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008 (ODISHA)**

CORRIGENDUM

No.NITR/TS/13-14/ 36

Date:07.02.14

The last date for submission of Tender Notice No.NITR/TS/BM/33 dated 07.01.2014 published on 09.01.2014 is hereby extended up to **17.02.2014**. All Other terms and conditions shall remain unaltered. For Details visit our website www.nitrkl.ac.in/Jobs & Tenders/Tenders for Equipment.

Contact person:H.O.D,Biotechnology & Medical Engineering.

Phone no: 0661-2462281/2283

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Sd/-

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**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008 (ODISHA)**

NOTICE INVITING TENDER

Tender Notification No:NITR/TS/BM/33 Dt: 07.01.2014

The National Institute of Technology, Rourkela invites sealed bids from eligible bidders for **Laser Scanning Confocal Microscope system for time-resolved 3D imaging.**

Last date for submission of Tender: 30.01.2014 at 3.00 P.M.

Opening date: 30.01.2014 at 3.30 P.M.

For details please visit our Institute website: www.nitrkl.ac.in/Tenders
for Equipment.

Contact Person: H.O.D. Biotechnology & Medical Engineering,
PhoneNo:0661-246/2281 /2283.

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Specifications for Laser Scanning Confocal Microscope System

A Laser Scanning Confocal Microscope system for time-resolved 3D imaging is required. The Confocal system should be capable of spectral and intensity imaging of fixed and live specimens with minimal bleaching and fluorescence crosstalk. The system should be equipped to image porous materials like polymeric scaffold and hydrogel.

System specification:

[A] Microscope:

1. Motorized Inverted fluorescence microscope for Bright field, phase contrast, DIC and fluorescence observations
2. High resolution Plan Achromat Confocal Grade objectives 10x, 20x, 40x, 40x (long distance) , 60x oil immersion and 60x water with DIC prisms for all objectives.
3. Motorized filter wheel & motorized nosepiece holder should have provision for six fluorescence filter and six nose nosepiece or better for fluorescence imaging
4. Minimum z-step resolution should be of 15 nm or better. The stage movement should be completely motorized
5. 12V 100W Halogen lamp illumination for transmitted light. One spare lamps should be offered along with the system
6. Metal halide lamp with lamp life of at least 2000Hrs. Two spare lamps should be offered along with the system.
7. Standard epi fluorescent filters for UV, Blue, Green excitation should be there.
8. Should have automated and motorized DIC. All the positioning of the prisms, analyzer and polarizer are to be automated according to the objective magnification change
9. Should be equipped with fully motorized X-Y scanning stage capable of holding all types of sample holder (for slides, different sizes of petri dishes, microplates for Live Cell Imaging etc.).

[B] LASER system, Scan Head and Detectors

1. System should have visible laser set of laser lines 405, 458,488, 514, 635, 555±5nm. All the offered laser lines should be controlled through the AOTF for fast

laser attenuation and switching in synchronization with scanner.

2. High sensitivity laser confocal scanning and detection unit with built in spectral detectors for low transmission losses and high efficient fluorescence signal collection.
3. Scan head should have at least 3 independent filter-free inbuilt spectral PMT detectors with independent voltage and offset control. Out of the 3 detectors, at least one should be high sensitive in built GaAsP detector or equivalent.
4. The spectral dispersion of the emission light should be based on either reflection grating with enhanced/improved spectral signal collection device or with prism based spectral dispersion with high efficiency.
5. The system should be capable of recording emission spectra with minimum spectral resolution of 5nm or better.
6. Computer controlled continuously variable confocal pinhole with software control.
7. The main Dichroic should allow any combination of available laser lines at highest efficiency and speed.
8. Provision should be there to couple different lasers from visible to IR (1000nm) to the same scan head at the same time.
9. All the fluorescence detectors of the scan head should be filter free with freely selectable emission band width detection capability to suit to the emission spectra of the dyes.
10. Highly efficient mechanism for excitation and emission splitting and simultaneous reflection of 4 visible lasers with possibility of any combination of laser down to sample with a small reflection spectral window and wide transmission spectral window should be available.
11. An additional transmitted light detector should be offered for transmitted light bright field and DIC imaging.
12. System should have a Standard Scanner: **at least 6 fps @ 512 x 512** or better;
13. Maximum scan resolution should be at least 6K x 6K for all channels and higher will be preferred.
14. Field of view should be at least 18 mm F.O.V. higher will be preferred.

[C] System control and imaging software

1. Software should be capable of controlling Motorized functions of microscope, digital camera, scan head control, laser control including AOTF and Image acquisition & processing.
2. It should allow saving of all system parameters with the image for repeatable/reproducible imaging.
3. Line, curved line, frame, Z-stack, Time series imaging capabilities.
4. Real ROI bleach for FRAP, Photo-activation/conversion experiments.
5. FRET imaging as well as Quantitative data analysis capability.
6. Standard geometry Measurements like length, areas, angles etc including intensity measurements.
7. Deconvolution and image stitching software should be provided
8. Dedicated confocal 3D visualization software module. It should allow to record the 3D animation with various adjustment like pseudo coloring, intensity, rotation, clipping, 3D enhancement etc. Advanced 3D software should be quoted separately.
9. Spectral un-mixing and emission fingerprinting with separation of overlapping emission spectra of fluorophores.
10. System should have total automated excitation finger printing capability for elimination of any excitation cross talk of fluorochromes.
11. System should also have excitation fingerprinting capability.
12. A licensed version of offline software should be offered. The license version should be for minimum 5 users.

[D] Computer, Software and Furniture:

1. High end computer with 500GB or better Hard Drive, 4GB or better RAM, high end graphics card, CD and DVD writer, two 18 inch monitor for control and image display panel should be provided
2. Suitable anti-vibration table for the microscopy system and table for the computer workstation should be provided with the system.

[E] Other essential requirements

1. Equipment should come with three years comprehensive warranty
2. Should be upgradeable to multiphoton system
3. After installation, on-site training for one week (atleast) should be arranged covering the handing of the system and its application
4. Suitable online UPS for the complete system with at least 30 minutes back-up should be included in the offer
5. Appropriate air-conditioning and de-humidification measures should be included in the offer.
6. Firm must have an Indian based service support structure
7. There must be 20 installations or more in India among which 5 should be at eastern India.
8. All the technical claims should be supported by original facts and figures provided by the manufacturer.
9. One year on site technical support with trained manpower should be provided. (cost should be borne by the company