

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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**2A & 2B Raja S.C.Mullick Road Jadavpur, Kolkata 700032**

**Tender Notice No.: PC/BBD/WELLCOME-DBT/14/15, dated: 12.03.2014**

**Sub: State of Art Spectral Laser Scanning Confocal Microscope System**

Sealed tender in two bids system (**Technical Bid & Financial bid**) is invited from bonafide, resourceful and eligible manufacturers/exclusive distributors for supply, installation and commissioning of “**State of Art Spectral Laser Scanning Confocal Microscope System**” with **necessary accessories**.

Part I (Technical Bid) of the tender should contain technical details and commercial terms and conditions and Part II (Price Bid) should indicate group-wise price as mentioned in the Technical Bid where applicable. The Technical Bid and Price bid are to be submitted in two separately sealed envelopes distinctly marked accordingly and both to be put inside another envelope, which should be sealed and super scribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Complete tender bids should reach the office of the **Department of Physical Chemistry, Indian Association for the Cultivation of Science, 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata 700032** or on before the scheduled date & time specified below.

<b>Tender Notice Number</b>	<b>PC/BBD/WELLCOME-DBT/14/15, dated: 12.03.2014</b>
<b>Date and time of Pre-bid meeting</b>	<b>7<sup>th</sup> April, 2014</b>
<b>Last date and time of submitting tender</b>	<b>14<sup>th</sup> April, 2014 (1.00 PM)</b>
<b>Date and time of opening tender</b>	<b>14<sup>th</sup> April, 2014 at 2:00 PM</b>
<b>Place of Opening Tender</b>	<b>at JC Bose Meeting Room</b>
<b>Contact</b>	<b>pcbbd@iacs.res.in</b>

The technical bids will be opened first to evaluate the technical specifications of the equipment thereafter, the Price bids of only technically qualified bidders will be opened. The date of opening the Price Bids will be intimated to the short-listed bidders at their contact addresses. The rest of the bids will be rejected.

**A). TECHNICAL BID:**

**“Technical Specifications: Laser Scanning Confocal Microscope System”**

The Confocal system should be capable of spectral and intensity imaging of fixed specimens and have advanced features for long duration live cell observation as well as high speed dynamics within the live cells/ tissues with minimum cell damage, bleaching and crosstalk. The system should be highly modular and possible to upgrade the existing system for Multi-photon imaging, FLIM, FCS, Super Resolution and other latest imaging techniques.

1	<p><b>Fully Motorized Inverted Fluorescence Research Microscope</b></p> <ol style="list-style-type: none"> <li>1. Motorized Inverted microscope for Bright field, DIC and fluorescence observations</li> <li>2. High resolution Plan Apochromat Confocal Grade objectives 10x/0.4, 20x/0.70, 40x/1.30 OIL &amp; 60x or 63x/1.40 oil with DIC prism set for all objectives.</li> <li>3. Motorized Z-focus drive with minimum z-step resolution of 15 nm or better with dedicated TFT/LCD screen for the status display</li> <li>4. 6 position motorized Fluorescence filter wheel &amp; 6 position motorized nosepiece.</li> <li>5. 12V 100W Halogen lamp illumination for transmitted light.</li> <li>6. Fluorescence illumination by Hg/metal halide lamp with lamp of life minimum 2000Hrs.</li> <li>7. Fluorescence filters for UV, Blue, Green excitation ranges. Apart from these 3 filters, dedicated narrow-band filter for Picogreen/ Alexa-488/ GFP should also be offered in the main system</li> <li>8. Automated and Motorized DIC All the positioning of the prisms, analyzer and polarizer are automated according to the magnification change</li> <li>9. Motorized scanning stage for XY-positioning by software</li> <li>10. Large Incubator (to cover the whole microscopy system) for Live cell incubation environmental control with CO<sub>2</sub>, O<sub>2</sub>, humidity and temperature control should be offered along with the main system. The vendor should also provide necessary gas cylinders, regulators &amp; gas linings etc.</li> </ol>
2	<p><b>Scan head with built-in detectors</b></p> <ol style="list-style-type: none"> <li>1. High sensitivity laser confocal scanning and detection unit with built in spectral detectors for low transmission losses and high efficient fluorescence signal collection.</li> <li>2. 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 with built-in GaAsP detector or equivalent with more than 40% QE. The vendor should offer additional spectral PMT detector (as optional accessories) to be integrated with the confocal scan head.</li> <li>3. 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.</li> <li>4. The system should be capable of recording emission spectra with minimum spectral resolution of 5nm or better.</li> <li>5. Computer controlled continuously variable confocal pinhole with software control.</li> <li>6. It should be possible to couple all the lasers from UV (350nm) to the same scan head at the same time.</li> <li>7. All the 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.</li> <li>8. An additional transmitted light detector should be offered for bright field and DIC imaging.</li> <li>9. <b>Scanner speed:</b> 7fps @ 512 x 512 or better.</li> <li>10. Maximum scan resolution should be at least 6Kx6K for all channels and higher will be preferred.</li> <li>11. The scan field diagonal should be at least 20 mm F.O.V. higher will be preferred.</li> <li>12. Optical scan field rotation: 200° or better</li> <li>13. Scan Zoom range 1:48x or more and should be adjustable in steps of 0.1</li> </ol>
3.	<p><b>Laser Module with controller</b></p>

	<p><b>Lasers :</b> Visible Laser Set with AOTF containing the laser lines Multi Argon with 458 nm, 476 nm, 488 nm &amp; 514 nm lines, DPSS 561nm &amp; HeNe 633nm</p> <p><b>Dichorics and AOTF:</b> The AOTF should allow at-least 8 lines of choice. The Laser line/s chosen should be reflected on the sample in any combination as per experimental demand.</p> <p><b>Blue Diode Laser 405nm</b> - suitable for imaging, photo-activation &amp; bleaching</p> <p>All the lasers should be optically coupled and connected to the scan head through fiber optic cable. All the offered laser lines should be controlled through the AOTF for fast laser attenuation and switching in synchronization with scanner.</p>
4.	<p><b>Control Computer</b></p>
	<p>High Power Workstation with Windows 7 Professional (64 bit) operating system.</p> <ul style="list-style-type: none"> <li>- Intel Xeon W3565 3.2 GHz</li> <li>- 6 GByte RAM</li> <li>- NVIDIA Quadro 600 1GB high performance GPU</li> <li>- 3 TByte SATA hard disc drive</li> <li>- 16x DVD+/- RW Supermulti Drive</li> <li>- eSATA, USB 2.0, IEEE 1394 A/B</li> <li>- Backlit Keyboard and mouse</li> <li>- High brilliance 30" LCD (S-IPS) flat screen, true colour, 2560 x 1600 pixel</li> </ul>
5.	<p><b>System control and imaging software</b></p>
	<p>Software should be capable of controlling Motorized functions of microscope, scan head control, laser control including AOTF and Image acquisition &amp; processing.</p> <ol style="list-style-type: none"> <li>a) Saving of all system parameters with the image for repeatable/reproducible imaging.</li> <li>b) Line, curved line, frame, Z-stack, Time series imaging capabilities.</li> <li>c) Real ROI bleach for FRAP, Photo-activation/conversion experiments.</li> <li>d) FRET imaging as well as Quantitative data analysis capability.</li> <li>e) Standard geometry Measurements like length, areas, angles etc including intensity measurements.</li> <li>f) Dedicated Software for user friendly setup and analysis of FRAP, FLIP and FRET experiments should be quoted.</li> <li>g) Dedicated Software for Colocalisation analysis &amp; Display of cytofluorogram (scatter diagram) in 2D and 3D, Histogram segmentation or masking to analyse intensity &amp; Analysis in absolute or relative values Co-localization with individual parameters.</li> <li>h) Dedicated Software for <b>3D Visualisation</b> tool for reconstruction and processing of 3D data having the following features: <ul style="list-style-type: none"> <li>• Fast motion and processing by GPU-based algorithms</li> <li>• Various projection modes: Transparent, Maximum Intensity, and Depth Coding</li> <li>• Zoom, rotate and move 3D volumes via mouse buttons and mouse wheel</li> <li>• Individual settings for intensity, minimum and maximum grey level, gamma and opacity for each channel</li> <li>• User defined interactive shadow projection to emphasize three dimensional structures</li> <li>• Definition of viewing angle for better spatial perception</li> <li>• Auto motion function to emphasize the spatial effect of the 3D volume</li> <li>• Powerful clipping tool for channel specific user defined segmentations</li> <li>• Stereo images (cyan / magenta, horizontal and vertical shutter, quad- based)</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Sophisticated Movie Editor for the generation of complex 3D animations</li> </ul> <p>i) Licensed version of offline analysis software should be offered along with the main system</p>
6.	<b>Online UPS</b>
	Vendor should arrange for the supply of suitable 5-KVA Online UPS with at least 60 minutes back-up
7.	<b>OPTIONAL ACCESSORIES:</b>
	<p>a) High Sensitive cool CCD Monochrome Digital Camera – to be integrated with the Confocal Software platform for normal microscopy analysis and multi-channel fluorescence image acquisition</p> <p>b) A suitable beam expander for the offered confocal scanner – to enhance the performance for bleaching / ablation experiments</p> <p>c) A second scanner - Resonant / Live scanner for ultra-high speed imaging with full format without any ROI.</p> <p>d) Offline PC workstation having the following minimum specification: Intel® 3rd Generation Core™ i7 Processor (6 MB cache, 4 cores, 3.1GHz) Intel® B75 Chipset, 3.0 TB HDD, 8.0GB (4 + 4) DDR3 RAM 1333MHz, SATA SuperMulti DVD writer, 6 USB 2.0, 1 VGA, 1 microphone/headphone jack, 1 line in, 1 line out, 1 RJ-45 (10/100/1000mbps), 1 full-height PCIe x1, NVIDIA Quadro 600 1GB high performance GPU, High brilliance 30" LCD (S-IPS) flat screen, true colour, 2560 x 1600 pixel.</p> <p>e) Should provide a technically trained person for handling the equipment for 12 months from the date of commissioning.</p> <p>f) Onsite training for minimum 5 days should be provided by the vendor</p>

**Important notes:**

- i) Vendor should quote rates involved, if any, for the Optional Items/services mentioned under 7 above separately.
- ii) Bidder providing misleading or wrong information will be disqualified
- iii) All technical claims of the Bidder should be supported by product catalogue, public website of the manufacture.
- iv) The Indian Agents desiring to quote on behalf of their foreign principals must have valid registration with the Central Purchase Organization (eg. DGS&D) as provided in Rule 143 of general Financial rules, 2005

**B). FINANCIAL BID:**

The financial bid should be super scribed as “**Finance Bid**” on the outer cover of the envelope.

**1. Price Bid:** The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly superscribed as "PRICE BID" on the outer cover of the envelope as already detailed above. The price bids of only technically qualified bidders will be opened and they will be intimated the date and time of opening of price bids at their email id-(s). Rest of the bids will stand rejected.

**2. Price:** Price to be quoted both on FOB and CIF basis for foreign currency or in Indian currency. Name of the particular port from where our authorized forwarder will lift the consignment must be mentioned clearly with FOB price.

**3. Bid Security (EMD):** An Account Payee Demand Draft for Rs. 3,00,000/- (Rupees three Lakh only) drawn in favour of "Indian Association for the Cultivation of Science" payable at Kolkata is to be furnished by the bidders, as Bid Security money or Earnest Money Deposit (EMD) with the tender.

**4.** The Demand Draft for the Bid-Security money should have at least 45 (forty five) days validity period after the opening of the Bids.

**5.** In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders. Bid security money to the successful bidder will be refunded on receipt of the Performance security money.

#### **6. Performance Security:**

An Account Payee Demand Draft for an amount of 10% of the order value drawn in favour of "Indian Association for the Cultivation of Science" payable at Kolkata is to be furnished by the successful bidder as Performance security. Performance security money would be released by IACS after a period of 60 days from the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money will be refunded to successful bidder on receipt of the Performance security money.

#### **(C) General Instructions:**

**1.** Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof.

**2.** "Laser Scanning Confocal Microscope System" should clearly be written on the envelope.

**3.** At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the Institute website only.

Prospective bidders are advised to occasionally visit the website ([www.iacs.res.in/tender](http://www.iacs.res.in/tender)) for any amendment.

**4. Payment Terms:** 100 % through letter of Credit; 90% to be released on shipment and balance 10% against successful installation & commissioning subject to submission of performance guarantee.

**5. Warranty:** Equipment should be offered with standard warranty followed by 48 months Annual Maintenance Contract (AMC). The vendor should quote the charges for 48 months AMC. The vendor should also quote for further 5 years AMC after the expiry of initial period of warranty & AMC. Taxes as applicable will be deducted at the time of payment of AMC amount.

**6. Installation/Demonstration /Application Training at site:** Free of cost by the supplier

**7. User list:** The supplier should provide a list of current users (with contact no, Email address etc) for the quoted item in India.

**8. Service facility:** Supplier should mention their details of service setup and Manpower in Kolkata who are responsible for after sales support. Response time should be within 24 hours.

**9.** The tender submitted shall remain valid at least for three months from the date of opening the tender. Validity beyond three months from the date of opening of the tender shall be by mutual consent

**10.** The tender should accompany a compliance chart. A technical compliance chart should also be provided in the following format:

Serial Number	Tender Specification	Specification of your offered instrument	Extent of compliance

**11.** The rate should be inclusive of all taxes, transportation etc. Nothing extra will be paid in addition to the quoted rate. The taxes, etc. should be shown separately in the Price Bid.

**12.** The model number, make, and a printed literature of the product shall be submitted positively.

**13.** Proposed delivery schedule should be mentioned clearly.

**14.** Manufacturers/exclusive distributors/vendors should have history of supplying this type of instrument to this or other Scientific Organization.

**15.** Authorized Dealership Certificate is must in case of principal manufacturing company is not quoting directly.

**16.** Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.

**17.** Incomplete tenders will be summarily rejected.

**18.** For any clarification regarding technical specifications, etc. please send your queries to "**Dr. Benu Brata Das: [pcbhd@iacs.res.in](mailto:pcbhd@iacs.res.in)**"

**19.** In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of technical bids will be the following working day at the appointed time.

**20.** Please note that IACS will not provide any accommodation or expenses to any of the bidders for attending opening of technical bid/price bid

**21. Acceptance of Tender:** IACS authority does not bind itself to accept the lowest tender and reserves the right to reject any or all the tenders received without assigning any reason thereof.

**REGISTRAR**