

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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

NIT No. : IACS/DKS/BC/2017-18/85

Date: 09/01/2018

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for **SPECTRAL MULTIPHOTON CONFOCAL LASER SCANNING SPECTROSCOPY-SYSTEM WITH SUPER-RESOLUTION CAPABILITY” (SMCLSS-SR)**

Sealed tender in two bids system (**Technical Bid & Financial bid**) is invited from bonafide, resourceful and eligible manufacturers/exclusive distributors for supply and installation of **SMCLSS-SR** with necessary accessories.

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	NIT No. IACS/DKS/BC/2017-18/85 Date: 09-01-18
Last date and time of submitting tender	31.01.2018, (11.45 AM)
Pre-bid meeting(date, time & place) to discuss technical specification	17.01.2018 @2.30 pm in room #66 IACS main building
Date and time of opening tender (Technical Bids)	31.01.2018, at 3 PM
Place of opening tender	@2.30 pm in room #66 IACS main building
Date and time of opening of Price Bid	The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.
Contact	Email: bcdks@iacs.res.in Tel.+91 33 2473 4971 [Ext 1106] Mobile: 8902477366

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

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

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad. Please provide documentary proofs of such successful installation and supportive documents that the instruments are running successfully.

For evaluation of L1 (least price) amongst the technically qualified bid only, the price of optional item will be considered in the event the committee decides to procure it. If the committee decides not to procure the optional items then the cost of those optional items will not be included in evaluation of L1.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as 'TECHNICAL BID' on the outer cover of the envelop as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for SMCLSS-SR".**

Desired Technical Specification for . SMCLSS-SR:

A	Specification For Fully Motorized Inverted Fluorescence Research Microscope:
	A1 Motorized Inverted microscope for Bright field, DIC, phase contrast and fluorescence observations. A2. High resolution semi-apo/plan-fluor objectives with DIC prism set for all DIC objectives.10x NA 0.3 (phase/fluorescence); 20X (phase/fluorescence); 40X NA 0.6 (DIC/Phase/fluorescence); Apochromatic 60X 1.4 NA, (DIC/fluorescence); Apochromatic 100x NA 1.4,(DIC/fluorescence), Long Working distance is preferable for 60x. A3 Motorized Focus with minimum step size of 10 nm or better, A4 Intermediate magnification changer 1.5X or more A5 6-8 position motorized Fluorescence filter wheel with shutter & 6 position motorized nosepiece with DIC /Polarizer lot. The Magnification change should be automatically recognized by the software A6 Motorized Continuous Automatic Drift Correction in IR (LED or LASER >750 nm) based Z-drift compensator by sensing the position of the cover-slip for fine focusing during long duration live-imaging controlled by touch screen panel. It would be a plus if such z-drift compensator also works for plastic bottom dishes, including 96-well plates. A7 12V 100W Halogen lamp illumination for transmitted light with built in filters A8 130 watt or more, intensity tunable fluorescence illumination by Hg/metal halide lamp with lamp of life minimum 2000Hrs with heat filter, with various intensity setting for example 100 %, 50 %, 25 %, 12 %, 6 %, 3 % 0 %. A9 Fluorescence filter set for DAPI, CFP, EGFP,YFP and mRFP, should be provided. Apart from these filter sets; <i>one additional dichroic</i> for mRFP (543 nm excitation) and <i>one empty mirror mount</i> should also be provided separately. Motorized control of epi-fluorescence filter turret. Motorized shutter in the fluorescence illumination light path (either on the turret or preferably built-in in the

	light source). A10 7 position Motorized long working distance condenser for Phase and DIC. All the positioning of the prisms, analyzer and polarizer should be automated according to the objective. Phase Contrast rings PH1, PH2 and PH3 should be provided A11 Motorized XY-scanning stage with tile-scan capability and Multi well imaging capability with linear encoder for good accuracy, high XY stability and repeatability. Control by Joystic and touch pad (LCD-based display of XYZ position would be preferred). Fine and coarse control of speed. Holders for slides, 35/60 mm Petri dish, and 96-well dishes with multipoint, tile and mosaic imaging software (capable of fast 6D imaging). XY-motorized stage should accommodate stage top CO2 incubator. Suitable for mounting Z-Piezo. A12 Metallic stage heating and cooling system should be provided for 10 °C to 80°C heating in addition to the temperature controlled CO2 incubator (A16). A14 Possibility of mounting a polarizer of appropriate size (preferably one inch) in the fluorescence lamp path of the microscope A15 Tiltable binocular eyepiece A16 Field stop/aperture diaphragm must be provided A17 Setup for long term live cell imaging including Incubation system with Temperature, CO2 , humidity control. High performance heating, humidity and CO2 control stage top incubator with built- in digital gas mixer for 100% CO2 gas cylinder use must be provided. It should come with multiple attachments such as 96-well Plate, 35mm, 50mm, 60mm petridish, Chamber slide, Chambered cover-glass. Touch panel controller. Setting Mode : Touch Panel, _Humidity : Internal Humidifier more than 90%, CO2 Control - CO2 regulation : Digital, CO2 setting range : 5.0~20% , CO2 Accuracy : ±0.1% (at 5%), Gas flow rate : 160ml/min, Stage heater Regulation and Hi-speed ON/OFF. (Please attach the pamphlet including a complete description of the system.)
B	CONFOCAL (Point scanning confocal microscope with spectrally resolved detection feature and super resolution capabilities)
	B1 Confocal system with the ability to acquire spectrally-resolved detection in each channel. Should have built-in Spectral detection unit (Spectral PMT or HyD/GaAsP Spectral detectors.) User must have freedom to select the exact wavelength range, they wish to capture in every detection channel at minimum 5 nano-meter precision. Spectral band-pass selection using continuously variable slit/knife edge based mechanism in all the detectors down to 5nm would be preferred B2 Each detector must have independent gain and offset. Simultaneous as well as sequential detection of minimum 4 fluorophores is a must. All detectors should be capable of working in Intensity and Spectral mode Imaging. Should be capable of simultaneous detection and separation of minimum 2 fluorophores or more based on high sensitive GaAsP/HyD or equivalent detectors with QE 40% or more. <i>Simultaneous acquisition in spectral mode would be preferred</i> (The TSC could decide to make the Simultaneous acquisition of spectrum a mandatory criteria)

	B3 Spectral acquisition should be performed using either of the following methods: i.) Reflection Diffraction Grating (with 32 array GaAsP/HyD) ii.) Prism (with 32 array GaAsP/HyD) iii.) Holographic Transmission Diffraction Grating (with 32 array GaAsP/HyD). Other methods will also be considered, the technical committee will decide the suitability of other method B4 Transmitted detector unit to conduct DIC with point laser scanning imaging. B5 The galvo-mirror should have highest reflectivity from 400-1000nm (>90%) for better sensitivity from UV–near-IR Imaging. B6 Fast scanning with at least 7-10 fps at 512X512, Higher speed acquisition capabilities would be given preference. Zoom range 40X or more with minimum increments of 0.5X, Scan rotation 180-360 degree, and various scanning mode including region of interest (ROI) scanning mode. An additional high speed scanner (28 FPS at 512X512 resolution) should be quoted optionally possibility of simultaneous dual scanning with two scanners would be preferred. B7 Scanner unit should have laser ports for Vis, UV and IR lasers. B8 The scan field diagonal should be 20 mm or better. B9 At least 4 laser lines (405nm, 488nm, 550-570 nm and 630-640 nm, high power laser compatible with FRAP) having a lifetime of minimum 15000 hours (additional guarantee for minimum 15000 hr laser life must be provided, in case of breakdown, the laser must be replaced without any material cost) for single photon should be provided. All visible & UV lasers should be connected to the scan head through fiber optic cable and should be controlled through AOTF for fast laser switching and attenuation with the laser scanner for Real ROI scan for FRAP, FRET Photo activation/conversion experiments. Laser must switch fast synchronized manner for conducting photo-activation, photo-conversion and FRAP and FRET experiments at the particular ROI through AOTF.
C	ACCESSORIES
	C1 Microscope cover C2 microscope scale for calibrating the pixel size C3 Lens cleaning paper books (10 packs) C4 Objective Oil (5 bottles) C5 one 1X C-mount + one 1.2X C-mount C6 Two additional one inch round polarizes C7 Two spare bulb each for fluorescence (130 watt, Hg/metal halide) and DIC (12V 100W Halogen) C7 Glass bottom 96 well plate (100 pieces)
D	System control and imaging software (must be provided with life time license agreement)
	D1 Common software to control all the feature of the microscope, camera confocal unit and 2

	photon system D2 License to design macros/write codes to perform inhomogeneous time/color/tile/3D/multipoint experiments according to the wish of the user. Multidimensional Image Acquisition and analysis software D3 Line, curved line, frame, Z-stack, Time series imaging capabilities. D4 Real ROI bleach for FRAP, Photo-activation/conversion experiments. D5 FRET and FRAP imaging as well as Quantitative data analysis capability. D6 Standard geometry Measurements like length, areas, angles etc including intensity measurements. D7 Advanced 3D image reconstruction with rendering from a Z-stack image series. Orthogonal plane viewing /slicing of the 3D time-lapse data set D8 Co-localization and histogram analysis with individual parameters. D9 Spectral un-mixing with fingerprinting for separation of overlapping excitation/emission spectra of fluorophores. D10 Additional Offline software with complete features as the main software with high end dedicated PC and monitor should be made available for offline data processing and analysis.
E	Camera specification
	Cooled monochrome CCD camera optimised for high sensitivity, 1.4 million net effective pixel resolution controlled by the same confocal software, capable of multichannel imaging, z stack, time lapse wide field imaging with fluorescence/DIC/phase contrast alone or in combination. High frame rate, Peltier cooling -10 degree@ 25 degree ambient or more. An additional sCMOS camera for high speed BF/DIC/Phase-contrast imaging should also be provided
F	Computer and Monitor
	Latest 64 bit control computer with Intel Xeon Processor, DDR RAM 64 GB or better, HDD: 2 TB SATA upgradable to 4 TB or better, DVD, SuperMulti SATA +R/RW, Graphics : AT Fire GL V5200 256MB DH DVI, Gigabit Ethernet, Win 7 Ultimate 64 bit , USB 2.0, Fire wire. Large 32" LCD/ TFT monitor. The CPU should be accessible with at least 10 other PCS connected with LAN
G	Service and Support
	G1 2 years warranty including for all the lasers and 5 years Annual Maintenance Contract (AMC) post warranty.

	G2 One trained operator for a period of 12 month G3 Note The above mentioned technical specifications are highly desirable. However, lower technical specifications may be considered if the above mentioned specifications are found to be unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into considerations its financial constraints and technical preferences.
H	FCS/FCCS and Anisotropy module
	H1 Based on Minimum 2 channel GaAsP/HyD or APD's for FCS/FCCS with high sensitivity and minimum after pulsing. The FCS unit should perform auto and cross correlation measurements in live cells and solution for a wide range of dyes and proteins. The unit should have the facility for elimination/suppression of other excitation laser lines. All laser lines for confocal imaging should be capable of working in FCS/FCCS mode. Dedicated Plan Apo 40x/1.2 water or 63X/1.20 Water with correction collar should be offered with the system. FCS measurement software for auto and cross correlation capabilities should be quoted. Dedicated FCS/FCCS Module for curve fitting, diffusion, Count Rates, CPM and Structural Parameters available. H2 System should be included with POL Anisotropy accessories to perform quantitative fluorescence anisotropy experiments and should be duly supported
I	Super resolution (SR) Imaging: (to be offered optionally)
	I1 Fully automated and motorized SR attachment with suitable high sensitive Detectors for complete Vis Spectrum. The system should be able to work in SR mode online during confocal imaging Should be able to achieve Lateral resolution of minimum 140 nm and Axial resolution of 450nm I2 Any dye used for confocal system can be used for imaging without changing sample preparation techniques/protocol. I3 Should be able to perform live cell SR Imaging. All laser lines for Confocal Imaging should be used for imaging in SR mode.
J	Multiphoton attachment with coupling optics and NDD Imaging (to be offered optionally)
	J1 Totally integrated and software controlled FemtoSecond laser system for Multiphoton imaging with the below mentioned specs: Tuning range: 690 to 1040nm. (for DAPI, Green, Red fluorophores) Pulse width : < 100 femto seconds. Average power: > 2.0 W or better @ 800nm. Repetitive rate: 80 MHz

	All direct coupling optics of the laser to the scan head and the laser attenuation device AOM.
J2	2 channel Detector for reflection NDD imaging with suitable filters for Violet, green , red fluorophores imaging for Deep Tissue Imaging using MP Laser should be quoted.
J3	Note: • Bidders should clearly specify the after sales/service/application support capabilities. • Warranty for the complete system should be mentined. • Provide all information as regards pre-installation requirements (i.e. room, environment) for system installation. • Online UPS for the complete system including lasers should be included in the supply. • Detailed list of users of the system in India with contact details to be provided. • Training for personnel on the system should be provided.

A compliance table (see below) must be prepared and submitted along with the technical bid

Sr. No	Tender specification	Your offered instrument specification	Extent of compliance

Tender will not be accepted if the technical compliance chart is NOT provided following the above format. Please indicate the compliance of each technical point from A to J mentioned in the Technical Specification.

Important notes:

- Vendor should quote rates involved, if any, for the Optional Items/services mentioned separately.
- Bidder providing misleading or wrong information will be disqualified
- All technical claims of the Bidder should be supported by product catalogue, public website of the manufacture.
- Qualified vendor will be required to undertake the room refurbishment for proper installation of the system. IACS will provide the space will electrical connection. The vender will be required to install the necessary tables and other furniture as required by the instruments. They are expected to inspect the space and take the room preparation work before delivery of item.

2. PRICE/ FINANCIAL 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 super scribed as 'PRICE BID' on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

PRICE: Price to be quoted on CIF Kolkata and also FOB basis.

3. BID SECURITY:

- a. An Account payee Demand Draft/Pay Order of Nationalized Indian Bank for Rs. 4,00,000 (Rupees four lacks only) drawn in favour of “Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)” is to be furnished by the bidders alongwith Technical Bid except those who are registered with the Central Purchase Organizations, National Small Industries Corporation or the concerned Ministry or Department, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG).
- b. The Demand Draft for the Bid-Security should have at least about 90 (ninety) days validity period of opening of the bids.
- c. In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any nationalized bank of India of 10% of the order value in the name of “Indian Association for the Cultivation of Science” is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money.

5. TERMS OF PAYMENT :

Payment will be made through irrevocable Letter of Credit in two installments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the instrument.

6. GENERAL INSTRUCTIONS :

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.
2. The tender should accompany a compliance chart.
3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
4. 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. Prospective bidders are advised to occasionally to visit the website (www.iacs.res.in/tender) for any amendment.
5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.
7. The model number, make and a printed literature of the product should be submitted positively.
8. Proposed delivery schedule should be mentioned clearly.
9. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.

12. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
13. In case of any dispute, the decision of IACS authority shall be final and bidding on the bidders.
14. For any clarification regarding technical specifications, information etc., please send your queries to Dr. Deepak Kr. Sinha (bcdks@iacs.res.in).
15. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

7. Warranty: Warranty: Equipment should be offered with standard warranty followed by Annual Maintenance Contract (AMC) /Comprehensive Maintenance Contract for a total (AMC/CMC) duration of 5 year. The vendor should quote the charges for AMC and CMC separately. The vendor should also quote for further 5 years AMC/CMC after the expiry of initial period of warranty & AMC. Taxes as applicable will be deducted at the time of payment of AMC/CMC amount.

Acting Registrar