



INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
PUNE

CLARIFICATION ON TENDER NUMBER - IISER-PUR-0743-18

ITEM DESCRIPTION- PROCUREMENT OF MICROSCOPE AND CONFOCAL SCAN HEAD.

Refer our Press Tender Notice No.IISER/S&P/9/18 dated 27.10.2018 for procurement of Microscope and Confocal Scan Head. Tender Reference Number - IISER-PUR-0743-18.

Pre-Bid meeting was held on November 02nd , 2018 at 2.30 p.m and minutes of meeting is as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the Project and thereafter requested Assistant Registrar (S&P) to brief the vendors on the salient features of the commercial terms and the indenting Officer to read out the clarification sought by the Prospective Bidders and replied thereto as detailed in Annexure -II

The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Pune and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before submitting their bids as stipulated in the Bidding Documents.

The other terms & conditions of the notice issued on our IISER website [www.iiserpune.ac .in](http://www.iiserpune.ac.in) will remain unchanged. No more correspondence in this regard will be entertained

The meeting ended with vote of thanks to the Chair

2.11.2018

Sd/-
Assistant Registrar (S&P)





IISER PUNE

PRE-BID CONFERENCE FOR PROCUREMENT OF MICROSCOPE AND CONFOCAL SCAN HEAD

TECHNICAL & COMMERCIAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISER-PUR-0743-18

DATE : 2.11.18

Sl. No.	Query/Clarification sought	Clarification/Amendment
1	Spectral Confocal Imaging Unit with built-in high sensitive detectors:	
	Resonant scanner with a true speed of at least 40fps @512x512 (without line skipping/ interpolation) with tunable spectral detectors. Or scanners with better speed and format. This is mandatory feature and should work simultaneously with minimum two channels without compromising the confocality.	<p>Amended to: Resonant scanner with tunable spectral detectors. True speed @512x512 (without line skipping/ interpolation) and with 1x zoom is needed. Other scanners with similar capability and information should be provided.</p> <p>The following information should be added by the vendor for the quoted scanner: Dimensions in the form of area scanning capability with 63x/60x objective with field of view at 1x should be mentioned along with speed. The top</p>

		<p>speed when using resonant/fast scanner for 512x512 pixel images should be specified.</p> <p>The high-speed scanning should work simultaneously with minimum two channels without compromising the confocality.</p>
	Computer and imaging software	
2	<p>NVIDIA Quadro P2000 5GB Graphics Card</p> <p>Combined storage of SSDs should be about 256-512GB.</p>	<p>Amended to:</p> <p>Confocal Manufacturer's tested PC with High Power Intel Xeon Processor (8-12 Cores).32 GB RAM ,- NVIDIA Quadro P2000 5GB High Performance GPU.</p> <p>Multiple SSD drives in Raid0 configuration. Combined storage of SSDs should be 512GB or more.</p> <p>3TB SATA hard disk drive.</p> <p>LED Monitor, wireless keyboard and mouse and other accessories.</p> <p>The desktop should have free slots for extra camera card and SSD.</p>
3	<p>3D visualisation and 3D movie recording module should be included</p>	<p>Software should be capable of controlling Motorized components of microscope, digital camera, confocal scan head, laser control including AOTF and Image acquisition & processing for confocal and camera imaging. It should include 3D visualization tools.</p>
	Microscope specifications	
4	<p>Motorised XY stage for XY scanning fitted with Piezo stage with travel range of 100 microns or better with universal samples holders to fix different glass slides (with 24-120 mm length) with moveable brackets with a variable clamping range.</p>	<p>Amended to:</p> <p>Motorized XY stage for XY scanning fitted with XZ Piezo stage with stage with travel range of 100 microns or better, with universal samples holders to fix different glass slides (with 24-120 mm length) and moveable brackets with a variable clamping range</p>
5	<p>Either LED or 120W metal halide illumination for fluorescence visualization</p>	<p>No change:</p> <p>PC controlled High-power LED fluorescence emission light source with fast LED switching and pulsing covering 360 to 750 nm. Typical lifetime should be 20000 hrs with fast USB (at least 600us) and TTL (at least 20 us) triggered shutters. The lamp house should have a motorized shutter and an attenuator.</p>

	Spectral Confocal Imaging Unit with built-in high sensitive detectors	
6	Channel Prism/Diffraction-grating based spectral separation and selection of emission bands through sliders (TRUE-spectral detectors), for simultaneous detection of 3 fluorophores. One of the detectors should be high sensitive GaAsP for weak fluorescence imaging. It should have spectral resolution of 5 nm or better.	Amended to: 2 Channel Prism/Diffraction-grating based spectral separation and selection of emission bands through sliders (TRUE-spectral detectors), for simultaneous detection of 2 or more fluorophores. One of the detectors should be high sensitive GaAsP for weak fluorescence imaging. It should have spectral resolution of 5 nm or better
7	High speed confocal scanner with frame rate of 12-15 fps @512X512 and should improve to 150 -200 fps or better at 512X32 pixel resolution or with ROI Imaging.	Amended to: Resonant scanner with tunable spectral detectors. True speed @512x512 (without line skipping/ interpolation) and with 1x zoom is needed. Other scanners with similar capability and information should be provided. The following information should be added by the vendor for the quoted scanner: Dimensions in the form of area scanning capability with 63x/60x objective with field of view at 1x should be mentioned along with speed. The top speed when using resonant/fast scanner for 512x512 pixel images should be specified. The high-speed scanning should work simultaneously with minimum two channels without compromising the confocality.
	Laser module	
8	Laser Unit including following laser lines with laser power :405/408nm (30 mW or better). Multi line Argon laser 458/488/514nm (25 mW or better) , Solid state DPSS 561nm (20mW or better) and 633nm laser (5mW or better). AOTF for fast laser switching and synchronization for real ROI scan for photo activation / conversion experiments.	Amended to: Laser Unit including following laser lines with laser power :405/408nm, 635nm/640nm (20 Mw or better). Solid state Lasers 488nm and 561/552 nm,. It should have a power of minimum 20mW or above for all the laser lines. AOTF for fast laser switching and synchronization for real ROI scan for photo activation / conversion experiments.
9	We request to Change that LCD Should be either Buit- in or separate.	Amended to: Motorized Inverted Fluorescence Microscope for

		BF/DIC/FL with dedicated LCD display screen and prepared with suitably located camera port. It is preferable that LCD should be built-in.
10	Motorised Z- focus drive with z step resolution 15 nm or less and have motorized objective prism turret, motorized Polarizer and filter cube analyzer for DIC imaging. It should be built-in.	The original specification remains unchanged.
11	We request that 100x/1.4 oil only not with Correction Collar as we do not have. However, we have 100X Silicon Oil Objective with Correction Collar.	Amended to: High resolution Plan Apochromat objectives corrected for both UV & visible lines and adaptable with all the detectors for imaging. 20x/.75, 40x/0.85 WD 0.24mm, 60/63x/1.4 oil and 100x/1.4 oil along with collar correction (if it is available) and DIC accessories.
12	The microscope should be equipped with hardware LED/ laser 790 nm or higher based control of focus drift during long live imaging. LED / Laser should not interfere with any excitation wavelength from 405nm to 640nm.	The original specification remains unchanged.
13	Motorized Condenser with NA 0.55 or better	Amended to: Motorized Condenser with NA 0.55 or better
	Spectral Confocal Imaging Unit with built-in high sensitive detectors:	
14	2 Channel Prism/Diffraction-grating based spectral separation and selection of emission bands through sliders (TRUE-spectral detectors), for simultaneous detection of 2 fluorophores. Both the detectors should be high sensitive GaAsP for weak fluorescence imaging. It should have spectral resolution of 5 nm or better	The original specification remains unchanged.
15	Software module or facility to image extended dynamic range while acquiring like HDR/BrightR/or equivalent with GaAsP/ HyD/APD or equivalent detectors.	Amended to: Software module or facility to image extended dynamic range while acquiring like HDR/BrightR/or equivalent with GaAsP/ HyD/APD or equivalent detectors.
16	Resonant scanner with a true speed of at least 30fps @512x512 at 1X Zoom (without line skipping/ interpolation) with tunable spectral detectors. Or scanners with higher speed.	Amended to: Resonant scanner with tunable spectral detectors. True speed @512x512 (without line skipping/ interpolation) and with 1x zoom is needed. Other scanners with similar capability should be provided. The following information should be added by the vendor for the quoted scanner: Dimensions in the form of area scanning capability with 63x/60x objective with field of

		<p>view at 1x should be mentioned along with speed. The top speed when using resonant/fast scanner for 512x512 pixel images should be specified.</p> <p>The high-speed scanning should work simultaneously with minimum two channels without compromising the confocality.</p>
17	Scan Resolution of minimum up to 4Kx4K or better with FOV scanner.	<p>Amended to:</p> <p>Scan Resolution of minimum up to 4Kx4K or better with FOV scanner.</p>
	Laser Module	
18	Laser Unit including following laser lines with laser power :405/408nm (50 mW or better) Solid state Lasers 488nm and 561/552 nm,. It should have a power of minimum 20mW or above for all the laser lines. AOTF for fast laser switching and synchronization for real ROI scan for photo activation / conversion experiments.	<p>Amended to:</p> <p>Laser Unit including following laser lines with laser power :405/408nm, 635nm/640nm (20 Mw or better).</p> <p>Solid state Lasers 488nm and 561/552 nm,. It should have a power of minimum 20mW or above for all the laser lines.</p> <p>AOTF for fast laser switching and synchronization for real ROI scan for photo activation / conversion experiments.</p>
	Other requirements	
19	Please remove the Points that are not relevant for Confocal Microscope	<p>Amended to:</p> <p>The vendor should provide a copy of site-preparation checklist; IISER will provide empty space with electricity and AC connections. It will be vendor's responsibility to install the equipment as well as the accessories to run the instrument.</p>

MARKING SYSTEM

	Microscope specifications	Marks
1	<p>Motorized Inverted Fluorescence Microscope for BF/DIC/FL with dedicated LCD display screen and prepared with suitably located camera port. It is preferable that LCD should be built-in.</p> <p>Two Infinity-Ports for 2 external coupling devices or two light/laser module to the rear and/or left hand side.</p>	8
2	<p>Motorised XY stage for XY scanning fitted with XZ Piezo stage with a travel range of 100 micron or better. It should have universal sample holders to fix different glass slides (with 24-120 mm length) with moveable brackets with a variable clamping range.</p> <p>Motorised Z- focus drive with z step resolution 25 nm or less and have motorized objective prism turret, motorized Polarizer and filter cube analyzer for DIC imaging. It should be built-in.</p> <p>Motorized 6 position FL filter turret, motorized 6 fold objective revolver.</p>	10
3	<p>PC controlled High-power LED fluorescence emission light source with fast LED switching and pulsing covering 360 to 750 nm. Typical lifetime should be 20000 hrs with fast USB (at least 600us) and TTL (at least 20 us) triggered shutters. The lamp house should have a motorized shutter and an attenuator.</p>	3
4	<p>High resolution Plan Achromat objectives corrected for both UV & visible lines and adaptable with all the detectors for imaging. 20x/.75, 40x/0.85 WD 0.24mm, 60/63x/1.4 oil and 100x/1.4 oil along with collar correction (if it is available) and DIC accessories.</p> <p>Motorized Condensor with NA 0.55 or better</p> <p>Fluorescence filters FITC, Rhodamine and 405 nm/uv range</p> <p>Nosepiece: Microscope should have waterproof motorized revolving nosepiece to hold ≥ 6 objectives at a time with anti-collision mechanism</p>	9
5	<p>The microscope should be equipped with hardware LED/ laser based control of focus drift during long live imaging. LED / Laser should not interfere with any excitation wavelength from 405nm to 640nm.</p> <p>Laser safety equipment</p>	5

	Spectral confocal imaging unit with laser module:	Marks
1	<p>Laser point scanning and confocal detection. Microscope compatibility Upright and Inverted. Compatible with Leica DMI-8 microscope. The system would be used for three dimensional image of colloidal particles in flow and living matter such as bacteria. The system should have a high speed</p>	30

	<p>scanner and provide good resolution to track individual particles/bacteria at high concentrations. High speed scanning is crucial for our applications.</p> <p>Resonant scanner with tunable spectral detectors. True speed @512x512 (without line skipping/ interpolation) and with 1x zoom is needed. Other scanners with similar information and capability should be provided.</p> <p>The following information should be added by the vendor for the quoted scanner: Dimensions in the form of area scanning capability with 63x/60x objective with field of view at 1x should be mentioned along with speed. The top speed when using resonant/fast scanner for 512x512 pixel images should be specified.</p> <p>The high-speed scanning should work simultaneously with minimum two channels without compromising the confocality. Scan Resolution of minimum up to 4Kx4K or more with FOV scanner.</p> <p>Laser Unit including following laser lines with laser power :405/408nm, 635nm/640nm (20 Mw or better).</p> <p>Solid state Lasers 488nm and 561/552 nm,. It should have a power of minimum 20mW or above for all the laser lines.</p> <p>AOTF for fast laser switching and synchronization for real ROI scan for photo activation / conversion experiments.</p>	
2	<p>2 Channel Prism/Diffraction-grating based spectral separation and selection of emission bands through sliders (TRUE-spectral detectors), for simultaneous detection of 2 or more fluorophores. One of the detectors should be high sensitive GaAsP for weak fluorescence imaging. It should have spectral resolution of 5 nm or better</p> <p>All detectors should be directly capable, not through optical fiber, and capable for working in Intensity and Spectral mode Imaging. Upgradability to more detectors and super resolution.</p> <p>Software module or facility to image extended dynamic range while acquiring like HDR/BrightR/ or equivalent with GaAsP/ HyD/APD or equivalent detectors.</p> <p>Additional BF detector (PMT).</p>	10
5	<p>Automatic and user friendly optimisation of pinhole diameter, manually adjustable for maintaining exact colocalisation of multi-color samples.</p> <p>Multidimensional image acquisition in x,y, z directions and time, wavelength and any combination thereof.</p> <p>Low photo-bleaching characteristics that permit long duration experiments of photosensitive samples, with minimal phototoxic effects.</p>	6

8	Supports extensions for STED and SMD Camera synchronisation Included Camera and microscope i/f C-mount Interlocks Key switch and interlock plug	4

	Computer and imaging software	Marks
1	Confocal Manufacturer's tested PC with High Power Intel Xeon Processor (8-12 Cores).32 GB RAM , - NVIDIA Quadro P2000 5GB High Performance GPU. Multiple SSD drives in Raid0 configuration. Combined storage of SSDs should be 512GB or more. 3TB SATA hard disk drive. LED Monitor, wireless keyboard and mouse and other accessories. The desktop should have free slots for extra camera card and SSD.	5
2	Software should be capable of controlling Motorized components of microscope, digital camera, confocal scan head, laser control including AOTF and Image acquisition & processing for confocal and camera imaging. It should include 3D visualization tools. License to offline software for image analysis, volume rendering, reconstruction, colocalization analysis, intensity analysis, deconvolution and etc	3

	Other requirements	
1	The vendor should provide a copy of site-preparation checklist; IISER will provide empty space with electricity and AC connections. It will be vendor's responsibility to install the equipment as well as the accessories to run the instrument. The vendor must highlight the desired specifications in their technical brochure sheets, give their website reference for all specifications and mention compliance with proposed specifications.	2

2	<p>Supplier must have an active support in Pune. In the bid, supplier should clearly mention how instrument service and repair time will be minimized. A qualified factory-trained engineer shall conduct on-site installation, commissioning and training.</p> <p>The vendor should provide on-site training on the system start-up, usage, maintenance, quality control, trouble shooting, etc.</p>	5
Total		100

Optional items		
1	<p>Scientific sCMOS monochrome Camera: Deep-cooled at least 2 MP camera with 70% or higher quantum efficiency, ~100 frames per second acquisition speed at full resolution, and extreme low dark current of 0.14e-/p/sec. Cooling: Air cooled (0°C), Bit depth: 12/16 bit, Fps: ~100 fps, Hardware binning: 2 x 2, 3 x 3, 4 x 4, 8 x 8. Interface: Camera Link.</p>	
2	<p>One piezo controlled objective slot in the turret.</p>	