

**BOSE INSTITUTE**  
**Centenary Building,**  
**P-1/12, CIT Scheme – VII M, Kankurgachi,**  
**Kolkata – 700 054 (INDIA)**

**Minutes of the Pre-bid Conference** held on 26.02.2020 at 4.00 p.m. in the Seminar room of the Department of Biochemistry at centenary building of the Institute regarding Tender Notice No. BI-K/E-TEND/30/2019-20 with tender id : 2020\_BIK\_545733\_1 for procurement of Confocal Microscope

*Members present:*

- Prof. Sujoy K DasGupta
- Prof. Shubho Chaudhuri
- Prof. Srimonti Sarkar
- Dr. Anirban Bhunia
- Dr. Kaushik Biswas
- Dr. Atin K Mandal

*Bidders present ::*

- Carl Zeiss
- Leica Microsystems
- Towa Optics (I) Pvt. Ltd. (Nikon)

**Resolution on the Prebid discussion held with the prospective bidders**

<b><u>Existing specification</u></b>	<b><u>As amended</u></b>
	Please add as additional point under 'Confocal System Components', before existing serial no 9: <b>The system should have the ability to attain real time online super-resolution in the range of 120-140 nm in XY and 350-400 nm in Z (without reducing pinhole).</b>
Motorized Z-focus drive with minimum z-step size of 10 nm or better with dedicated TFT/LCD touch-screen for the control of motorized functions of microscope. Should have hardware-based focus drift control.	Motorized Z-focus drive with minimum z-step size of 10 nm or better with dedicated TFT/LCD touch-screen for the control of motorized functions of microscope. Should have IR LED/Laser based (780 nm onwards) hardware-based focus drift control.
LED / Halogen illumination for transmitted light & 120W metal halide illumination, or LED illumination with 2000 hr or higher lifetime, for fluorescence should be offered. In case of LED illumination in fluorescence mode, minimum 4 LED's should be part of the configuration for DAPI, GFP, RFP, Cy3 and Cy5 imaging	LED / Halogen illumination for transmitted light & LED illumination with 10,000 hr or higher lifetime for fluorescence should be offered. LED illumination in fluorescence mode should cover excitation from 400 nm to 700 nm for DAPI, CFP, GFP, YFP, RFP, Cy3 and Cy5 imaging
Pixel shift-free narrow band-pass fluorescent filters for DAPI, GFP, RFP, Cy3 and Cy5.	Pixel shift-free narrow band-pass fluorescent filters for DAPI, CFP, GFP, YFP, RFP/Cy3 and Cy5.
High resolution Confocal Grade Plan-Apo $\lambda$ blue corrected objectives 10x/0.4NA, 20X/0.7 NA (or better), 40x/1.0 NA (or better) oil,	High resolution Confocal Grade Plan-Apo $\lambda$ blue corrected objectives 10x/0.4NA, 20X/0.7 NA (or better), 40x/ <b>0.85 NA</b> (or better) <b>dry</b> ,

<p>60/63x/1.4 NA (or better) oil, 100X/1.4 NA (or better) oil. Shift free DIC accessories for all objectives.</p>	<p>60/63x/1.4 NA (or better) oil, 100X/1.4 NA (or better) oil. Shift free DIC accessories for all objectives.</p> <p>40x/1.3 NA (or better) oil should be quoted as optional.</p>
<p>The confocal detection unit should have built-in Spectral PMT or HyD/GaAsPspectral detectors. All detectors should be capable of working in Intensity and Spectral modes of imaging. Should be capable of simultaneous detection and separation of at least 5 fluorophores or more, out of which minimum 3 or more fluorophores based on highly sensitive GaAsP / HyD detectors with QE 45% or more. All the detectors should be built-in (inside the scan head)spectral type. The spectral dispersion of the emission light should be based on either on reflection grating or prism.</p>	<p>The confocal detection unit should have built-in Spectral PMT or HyD/GaAsPspectral detectors. All detectors should be capable of working in Intensity and Spectral modes of imaging. Should be capable of simultaneous detection and separation of at least 4 fluorophores or more, out of which minimum 2 or more fluorophores based on highly sensitive GaAsP / HyD detectors with QE 45% or more. All the detectors should be built-in (inside the scan head)spectral type. The spectral dispersion of the emission light should be based on either on reflection grating or prism.</p>
<p>Photo bleaching/ photo activation capability should be included within the quoted system. Suitable laser line 405/408 having photobleaching/photoactivation capability, with high power of at least 40 mW and AOTF control should be included in the quoted system.</p>	<p>Photo bleaching/ photo activation capability should be included within the quoted system. Suitable laser line 405/408 having photobleaching/photoactivation capability, with sufficient high power (suggested laser power of greater than 40 mW or fibre output of more than 12mW) and AOTF control should be included in the quoted system.</p>
<p>System should be capable of acquiring minimum of 25 frames per second @ 512x512 pixel resolution in spectral mode (without line skipping and interpolation), and should increase with ROI and zoom selection. Digitization capability of 8/12/16 bit should be available with the system.</p>	<p>System should be capable of acquiring minimum of 25 frames per second (even in the super resolution mode) @ 512x512 pixel resolution in spectral mode (without line skipping and interpolation), and should increase with ROI and zoom selection. Digitization capability of 8/12/16 bit should be available with the system.</p>
<p>Laser Lines required: Solid State / Gas Laser Units including with the following wave lengths should be connected to the scan head through fiber optic cable and should be controlled through AOTF for fast laser switching and attenuation:</p> <ol style="list-style-type: none"> <li>a) 405nm or equivalent for DAPI, Hoechst</li> <li>b) 445/448 or equivalent for CFP, 488 nm for GFP, FITC, 515 or equivalent for YFP</li> <li>c) 561nm for Cy 3, Texas Red, TRITC, Rhodamine fluorophores, Alexa Fluor 568</li> <li>d) 594 or equivalent for mCherry, Cy3.5, Alexa Fluor 595 fluorophores.</li> <li>e) 633/640 nm or equivalent for Cy5, Alexa Fluor 635 dyes</li> </ol>	<p>Laser Lines required: Solid State / Gas Laser Units including with the following wave lengths should be connected to the scan head through fibre optic cable and should be controlled through AOTF for fast laser switching and attenuation:</p> <ol style="list-style-type: none"> <li>a) 405nm or equivalent for DAPI, Hoechst</li> <li>b) 440/445 nm for CFP</li> <li>c) 488 nm for GFP, FITC</li> <li>d) 515 nm or equivalent for YFP</li> <li>e) 561 nm for Cy 3, Texas Red, TRITC, Rhodamine fluorophores, Alexa Fluor 568</li> <li>f) 633/640 nm for Cy5, Alexa Fluor 635 dyes</li> </ol>

<p>All the lasers should have minimum power of 10mW and a guaranteed 10,000hr of working life time. Laser wavelength may vary up to <math>\pm 5</math> nm. The entire lasers should be switched on/off through single switching power button and should be provided in a closed box with laser combining facility.</p>	<p>All the lasers should have minimum power of 7mW and a guaranteed 10,000hr of working life time. Laser wavelength <u>may vary up to <math>\pm 5</math> nm</u>. The entire lasers should be switched on/off through single switching power button and should be provided in a closed box with laser combining facility..</p>
<p>sCOMS camera (minimum 4 Mpixel or above) with cooling &amp; speed of 50 fps @ full frame, Quantum efficiency of 70% or above, pixel size 6.45 <math>\mu\text{m}</math> or above. Camera should be able to use with the same confocal software.</p>	<p>sCOMS camera (minimum 4 Mpixel or above) with cooling &amp; speed of 50 fps @ full frame, Quantum efficiency of 80% or above, pixel size 6.45 <math>\mu\text{m}</math> or above. Camera should be able to use with the same confocal software.</p>
<p>Service/Manpower: Should provide onsite operator for 2 years (operator cost will also be part of the financial evaluation).</p>	<p>Service/Manpower: Should provide onsite operator for 3 years (operator cost will also be part of the financial evaluation).</p>

Registrar (Officiating)