

Corrigendum - 01

The Pre – Bid Meeting was held on **20/02/2023** at **3.30 p.m.** in the **Board Room**, NITK Surathkal for the purchase of **“Spectrofluorometer with Accessories”** (Tender Notification No : NITK/CRF/SF/04 Dated: **09/02/2023**). The following queries were discussed & the Reply/Clarification given to the prospective bidders.

Queries & Reply/Clarification

Section 1: Technical Bid

Sl. No	NITK Tender Specifications	Questions asked by the vendor	Reply/Clarification	Changes to the Tender
1.	<p>Warranty of all the above quoted Item should be 3 Years. Item No C 6 can be quoted with one year warranty. Quote Separately the price for 2 years additional warranty for item C6. Bidder shall quote for 3 years of AMC for Part A and B and other units bought under this package. Quote AMC rate for 2 years after warranty period. AMC is for two service visits and two breakdown visit, during a year (12 months period). Comparison will be done after considering AMC values for 2 years, after warranty.</p>	<p>Please note one year warranty and extended warranty should be for Item No C 7 (NIR Photomultiplier Detector) NOT item No. 6</p>	Acceptable	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 43 of 44, under Note: clause no. 1</p> <p>It may be read as “Warranty for all the quoted items should be 3 Years. However, NIR Photomultiplier Detector and Cryostat can have one year warranty. Bidder shall quote for 2 years of AMC after warranty for Part A and B and other units bought under this package. AMC is for two service visits and two breakdown visit, during a year (12 months period). L1 will be decided considering AMC values for 2 years, after warranty period”.</p>

2		In the BOQ, there is no provision given for entering the optional items separately. We request you to add the provision for entering optional items separately.	The BOQ for the different items will be provided.	
3	Spectrofluorometer should have research grade reflective-optics with 10,000:1 water Raman specification (FSD method). System should come with a photodiode reference detector and with multialkali PMT emission detector, 200-870nm spectral range, working in photon counting mode. System should deliver with filter holder and a quartz cell and with essential software for the control of the instrument and data analyses. The system should be compatible with Liq N₂ cryostat and Liq He cryostat both.	Please change the range detector emission range to 230-870nm and remove Liq He cryostat as this is not compatible with the benchtop model.	NITK decided to change the detector emission range from 230-870 nm. Ok we accept your request but we will also keep Liq N ₂ cryostat. Also the quoted system must be Liq N₂ compatible system.	Committee decided to modify it as Under Tender Document, Annexure-‘M’, Page. No: 38 of 44, under Part A: Main System: Steady State Measurement, S. No. 1 It may be read as “Spectrofluorometer should have research grade reflective-optics with 15,000:1 water Raman specification (FSD method). System should come with a photodiode reference detector and with multialkali PMT emission detector, 230-870nm spectral range, working in photon counting mode. System should deliver with filter holder and a quartz cell and with essential software for the control of the instrument and data analyses. The system should be compatible with Liq N₂ cryostat for steady State measurement unit ”.
4	A continuous 150W ozone-free xenon source with integrated power supply and a pulsed xenon flash lamp for phosphorescence measurements, both	Ozone free xenon lamps will work up to 1000 nm only, please change the excitation light 230 to 1000 nm.	Acceptable. This will be changed to 230 to 1000 nm	Committee decided to modify it as Under Tender Document, Annexure-‘M’, Page. No: 38 of 44, under Part A:

	delivering excitation light from 230nm to 1700 nm.			<p>Main System: Steady State Measurement, S. No. 2</p> <p>It may be read as “A continuous 150W or more ozone-free xenon source with integrated power supply and a pulsed xenon flash lamp for phosphorescence measurements, both delivering excitation light from 230nm to 1000 nm”.</p>
5	<p>A liquid nitrogen cooled InGaAs detector (800-1700nm at LN2 temperature) to be compatible with above steady state system. Mounted into the all-reflective-optic housing. Should include all electronic modules and cables and 600g/mm-1000nm or better blaze grating added to the emission grating turret. Also should include computer controlled flipping mirror slit assembly. Second emission port must be provided in steady state measurement system without additional charges for mounting NIR Detector.</p>	<p>As per the latest development of our NIR InGaAs detector we provide a TE-cooled detector instead of liquid nitrogen cooled which is fast in type and eliminates the consumption of liquid nitrogen. Please change it to "a liquid nitrogen-cooled or TE-cooled detector". Also, our detector range is 870nm -1650nm. For any measurements up to 1650 nm, you also need NIR blazed grating which is missing. Please add one more grating 830 g/mm and blazed 1200 nm. We request you amend these points.</p>	<p>For single system vender don't need to quote for this detector, however if vender quote for two system then they can quote InGaAS Detector which can be "A liquid nitrogen-cooled or TE-cooled detector". Also, quote appropriate NIR gratings to cover our requested range (870nm -1650nm).</p>	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure- 'M', Page. No: 39 of 44, under Part A: Main System: Steady State Measurement, S. No. 9</p> <p>It may be read as “A liquid nitrogen cooled InGaAs detector or TE-cooled detector (870-1650nm at LN2 temperature) to be compatible with above steady state system. Mounted into the all-reflective-optic housing. Also, quote appropriate NIR gratings to cover our requested range (870nm - 1650nm)”.</p>

6	<p>A optical system for lifetime measurement should come with cell holder with integrated stirrer and temperature sensor in large sample compartment (cryostat compatible for both Liq N2 and Liq He cryostat), T-format motorised optics (UV-grade fused silica) with filter holders, all cables and interconnections. Polarisation option should be given in case it will be selected from optional item, emission monochromator, excitation source controller & heads, timing electronics and detector. A Time analysis software should be given (included in price). Baseplate size as required.</p>	<p>T-format optics is not possible as per the design and configuration in the benchtop model. Please remove this.</p>	<p>Acceptable, we keep a general optics design. Since we removed the LiqHe cryostat from the specification (corrigendum Sl. No. 3). Therefore, we will remove Liq He requirement from here also.</p>	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 40 of 44, under Part B: Main System: Time Correlated Single Photon Counting Measurement, S. No. 1</p> <p>It may be read as “The optical system for lifetime measurement should come with cell holder with integrated stirrer and temperature sensor in large sample compartment (Liq N2 cryostat compatible), A motorised optics (UV-grade fused silica) with filter holders, all cables and interconnections. Polarisation option should be given in case it will be selected from optional item, emission monochromator, excitation source controller & heads, timing electronics and detector. A Time analysis software should be given (included in price). Baseplate size as required”.</p>
7	<p>Time domain monochromator UV/VIS: 200-850nm, 450nm blaze angle or best suited for a given system. Includes motorised wavelength and slit control, and safety shutter. A suitable interface should be provided.</p>	<p>No additional monochromator is required for time domain or TCSPC measurement.</p>	<p>As NITK is looking for one or two system for two types of measurement. Therefore, this monochromator is at emission side for TCSPC experiment. If a supplier is giving one unit for both type of measurement then there is no need to quote for it. It can be mentioned</p>	<p>No Change</p>

			that it can be included in main Unit.	
8	High throughput TCSPC controller module should be provided. Lifetime measurable: 25ps to 1s (Appropriate source and detector) Should include a Time Base acquisition control software and USB cable.	Please keep the range 200 ps-10 μ s	The changes will be accepted and it will be changed to 200 ps.	Committee decided to modify it as Under Tender Document, Annexure-‘M’, Page. No: 40 of 44, under Part B: Main System: Time Correlated Single Photon Counting Measurement, S. No. 3 It may be read as “High throughput TCSPC controller module should be provided. Lifetime measurable: 200ps or less to 1s or more (Appropriate source and detector) Should include a Time Base acquisition control software and USB cable”.
9	Delta Diode Controller: It should include drive cable, USB cable, lens adjustment tool, interlock plug, user guide with control panel software on CD-ROM, keys (2), and IEC power cord. Operates at repetition rates from one-shot to 100MHz subject to attached head or better.	Delta Diode Controller is a very specific term that is used here, we do not need any separate controller as we have integrated laser and controller for each and every laser or LED module. Please change it as " all the necessary controllers and parts for TCSPC measurements with a laser diode and LEDs must be included	NITK decided to change from Delta Diode to Necessary controller.	Committee decided to modify it as Under Tender Document, Annexure-‘M’, Page. No: 40 of 44, under Part B: Main System: Time Correlated Single Photon Counting Measurement, S. No. 4 It may be read as “ Necessary Controller: It should include drive cable, USB cable, lens adjustment tool, interlock plug, user guide with control panel software on CD-ROM, keys (2), and IEC power cord. Operates at repetition rates from one-shot to

				100MHz subject to attached head or better.
10	<p>Pulsed LED : Pulsed LED with Peak Wavelength 265 (slight variation (10 nm) above or below) ± 10 nm (Part B, item 8)</p> <p>(Part B, item 9) Pulsed Laser Diode 1: Pulsed laser diode with peak wavelength 375nm or slight (20 nm) above or below ± 10nm with active temp control. Should operates at repetition rate up to at least 80MHz.</p> <p>(Part B, item 10) Pulsed Laser Diode 2: Pulsed laser diode with peak wavelength 510nm or slight (20 nm) above or below ± 10nm with active temp control. Should operates at repetition rate up to at least 80MHz.</p> <p>(Part C, item 8) Pulsed Laser diode: Pulsed laser diode with peak wavelength 730nm or slight</p>	Please keep the repetition rate up to 20MHz for Pulsed LED, Laser 1, Laer 2 and 730 nm.	<p>For Pulsed LED the repetition rate was not mentioned (Part B 8).</p> <p>Since you brought into the notice. We will keep 20MHz or more in case of Pulsed LED. Whereas in case of Pulsed Laser diode 1 and 2 and Laser 730 nm sholud remain the same repetition rate (80 MHz). However the wavelength of the pulsed laser diode will be modified</p>	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 40 of 44, under Part B: Main System: Time Correlated Single Photon Counting Measurement,</p> <p>S. No. 8</p> <p>It may be read as “Pulsed LED : Pulsed LED with Peak Wavelength 265 (slight variation (10 nm) above or below) ± 10 nm. Should operates at repetition rate up to at least 20MHz or above”.</p> <p>Under Part B, page no 41 of 44, S. No. 9</p> <p>Pulsed Laser Diode 1: Pulsed laser diode with peak wavelength 375nm ± 30 nm with active temp control. Should</p>

	(20 nm) above or below ± 10 nm with active temp control. Should operate at repetition rate up to at least 80MHz.			<p>operate at repetition rate up to at least 80MHz.</p> <p>Under Part B, page no 41 of 44, S. No. 10 Pulsed Laser Diode 2: No Change</p> <p>Under Part C, page no 42 of 44, S. No. 8</p> <p>Pulsed Laser diode: Pulsed laser diode with peak wavelength $755\text{nm} \pm 30\text{ nm}$ with active temp control. Should operate at repetition rate up to at least 80MHz.</p>
11	A Integrating sphere should be provided for direct PLQY sample measurements. 120 mm or more internal diameter integrating sphere with reflectivity from 250-2500nm should be offered. Should Include bottom loading sample tray for solids or powders (1.3 cm diameter, 3.2 mm depth with quartz coverslip). Also, should include center mounted 10 mm cuvette sample holder. System should not require fiber optics. Should include 5 cups, with 5 coverslips, 4 side plugs, one bottom plug and cuvette shaped reflector, and electroluminescence connectivity for ELQY should be possible. Powder/solid samples are to be easily loaded with bottom mounting retractable mechanism to prevent sphere contamination, and	Too much specific. please keep it simple like " Internal/External with necessary coupling optics. At least 120mm or better integrating sphere for measuring the luminescent quantum yields of various solids, liquids, powders, thin films, and small light sources. Software provision for calculating PLQY and Chromaticity. Necessary sample	NITK decided to change it to simpler wordings.	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure- 'M', Page. No: 41 of 44, under Part C, S. No. 2</p> <p>It may be read as "An Integrating sphere should be provided for direct PLQY sample measurements with following ability.</p> <p>I. 120 mm or more internal diameter sphere with reflectivity from 250-2500nm</p> <p>II. Should Include bottom loading sample tray for solids or powders</p>

	center mounted cuvette is lowered into position with a simple top mount. Integrating sphere must be compatible with steady state measurement system (PLQY range: 250 to 2200 nm). This sphere accessory should allow for direct mounting of DPSS lasers for upconversion PLQY or laser excited PLQY.	holders, ND filters, and other optical components should be included."		(1.3 cm diameter, 3.2 mm depth with quartz coverslip). III. 10 mm cuvette holder for liquid samples. IV. Electroluminescence connectivity for ELQY should be possible. V. This sphere accessory should allow for direct mounting of DPSS lasers for upconversion PLQY or laser excited PLQY for future upgradation. VI. 5 cups, with 5 coverslips, 4 side plugs".
12	Set of seven neutral density filters (ND): from 0.1 to 4.0 OD or more. All 50x50mm square or more.	In-built ND filter wheel already installed where we can control the intensity 1-100%. Please keep it optional.	It is optional only.	No Change
13	Powder cup, spectral on. Disposable round cup for loading into the bottom sample drawer and compatible with the Quartz coverslips should be provided. Dimensions: 1.3 cm dia, 3.2 mm depth, with 1.7 mm inset for Quartz Coverslip. Quantity: 10 Nos.	Necessary Spectralon powder cup with a quartz coverslip should be included for powder sample measurements. Quantity 10Nos	Please quote powder cups and quartz cover slips with appropriate dimensions.	Committee decided to modify it as Under Tender Document, Annexure- 'M', Page. No: 42 of 44, under Part C, S. No. 4, It may be read as "Powder cup, spectral on. Disposable round cup for loading into the bottom sample drawer and compatible with the Quartz coverslips should be provided with appropriate dimensions. Quantity: 10 Nos".
14	NIR Time Domain Monochromator Time domain monochromator VIS/NIR: 400-1600nm or better. Should include motorised wavelength and slit control, and safety shutter. Suitable interface	Additional monochromators cannot be added to the benchtop model.	As we are looking for one or two separate system for steady state and lifetime measurements, this monochromator is	No Change

	must be added between the main system and NIR Time domain monochromator.		required at emission side for TCSPC experiment. In case of one single system the vendor can mention NOT required in their system.	
15	NIR photomultiplier (300-1700nm) package. It must Includes a PMT with 160kcps or less typical dark counts and 1.5ns TTS, liquid nitrogen cooled housing with power supply and optics (requires liquid nitrogen dewar – should be included), CFD-2G-D close-coupled GHz amplifier/discriminator, PHV-5 precision HV controller with over illumination shutdown and all cables.	As the benchtop model can accommodate a maximum of up to two detectors, please keep either NIR InGaAs or NIR PMT for your NIR measurements. In the case of NIR PMT please keep the range from 950-1700nm.	We will keep this item as a part of the specification	No change
16	<p>I. Temperature range: from 10 K to Room Temperature</p> <p>II. Operational frequency : 50 Hz</p> <p>III. Sample environment vacuum</p> <p>IV. Temperature stability : 0.1 K over 10 min</p> <p>V. Cooling Capacity: 0.4 W or less</p> <p>VI. Radiation Shield cooling capacity: 10 W or less</p> <p>VII. Maximum sample space 20 mm or above</p> <p>VIII. A suitable vacuum pump (turbomolecular pump) must be provide</p> <p>IX. A suitable temperature controller with all the cable and interface software (if required) must be provided</p>	Please remove this.	Acceptable. We will remove form the specification	<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 42 of 44, under Part C, S. No. 10, Item is removed form the Part C</p>

	Price should include all the necessary items (screw, nut, bolt, sample holder adaptor etc.) to perform steady state and lifetime measurement from UV – NIR range using the quoted cryostat.			
17		As per the tender format only one price can be uploaded to the BOQ. Please advise us accordingly.	We are going to provide the BOQ for the different items.	
18		In case of global tender we are unable to quote FOR basis, we can quote up to CIP or FCA basis only.	Please refer to Section 2 item 2 in Tender document.	Under Tender Document, Page. No: 12 of 44, section 2: conditions of contract Please refer to Sl. no 2

Additional amendment based on the pre-bid meeting discussion

19	<p>The bidder should quote one unit of Spectrofluorometer with Accessories. The offered Spectrofluorometer should be a computer controlled with all the required hardwares, softwares, accessories, standards and other consumables required for installation, commissioning, calibration of the unit at NITK Surathkal. System should able to record photoluminescence of all kinds of materials, namely, liquid, solid, thin film.</p> <p>The bidder is responsible for complete installation, smooth operation, maintenance and comply of all warranty clauses for all the items ordered in this package. Even though order may be separate for different parts in the package, the bidder is responsible for all the items in the package.</p> <p>Bidder has to ensure that all the items quoted under this package are new (Models must be released after 2017). Manufacturer has to give a certificate on the Model and the Year of the manufacture. Compatible spares must</p>			<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 38 of 44,</p> <p>It may be read as “The bidder may quote single or two separate systems capable of doing steady state and lifetime measurement up to NIR Range (230-1670 nm approx) at Liq N2 temperature. The offered Spectrofluorometer should be a computer controlled with all the required hardwares, softwares, accessories, standards and other consumables required for installation, commissioning, calibration of the unit at NITK Surathkal. System should able to perform the experiments for liquid, solid, thin film samples. The bidder is responsible for complete installation, smooth operation, maintenance and comply with all warranty clauses for all the items ordered in this package. Even though order may be separate for different parts in the package, the bidder is responsible for all the items in the package. Bidder has to ensure that all the items quoted under this package are new (Models must be released after 2017). Manufacturer has to give a certificate on the Model and the Year of the manufacture. Compatible spares must be available for 10 years after they stop manufacturing the equipment”.</p>
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	be available for 10 years after they stop manufacturing the equipment.			
20	<p>Part C Optional Item No 9 Annexure-‘M’, Page. No: 42 of 44</p> <p>I. Temperature range: From 77 K to Room Temperature</p> <p>II. Sample environment vacuum</p> <p>III. Temperature stability: 0.1 K over 10 min</p> <p>IV. Maximum sample space 20 mm or above</p> <p>V. Sample holder diameter: 20 mm * 50 mm</p> <p>VI. Cooldown down Time: From room temperature to 77 K in 20 min</p> <p>VII. Hold time: 10 hr or more</p> <p>VIII. A suitable vacuum pump must be provide</p> <p>IX. A suitable temperature controller with all the cable and interface software (if required) must be provided</p> <p>Price should include all the necessary items (screw, nut, bolt, sample holder adaptor etc.) to</p>			<p>Committee decided to modify it as</p> <p>Under Tender Document, Annexure-‘M’, Page. No: 42 of 44, Sl. No 9, Liq N2 Cryostat</p> <p>It may be read as,</p> <p>I. Temperature range: From 77 K to Room Temperature</p> <p>II. Sample environment vacuum</p> <p>III. Temperature stability: 0.1 K over 10 min</p> <p>IV. Maximum sample space 20 mm or above</p> <p>V. Sample holder diameter: 20 mm * 50 mm</p> <p>VI. Cooldown down Time: From room temperature to 77 K in 20 min</p> <p>VII. Hold time: 10 hr or more</p> <p>VIII. A suitable turbo molecular vacuum pump must be provided.</p> <p>IX. A suitable temperature controller with all the cable and interface software (if required) must be provided</p> <p>X. Also provide 2 Nos. of low temperature cuvettes or Cryogenic grade Cuvettes which can sustain upto 77 K temperature and also work in NIR range (230-1650 nm)</p>

	perform steady state and lifetime measurement from UV – NIR range using the quoted cryostat.			<p>Price should include all the necessary items (screw, nut, bolt, sample holder adaptor etc.) to perform steady state and lifetime measurement from UV – NIR range using the quoted cryostat.</p> <p>Note: Committee decided to move Liq N2 cryostat and necessary adaptor item from optional (Part C item 9 and item 5) to Part B (main system). Hence the Liq N2 cryostat and cryostat adaptor will have new item Nos, in Part B, i.e., item No. 12 and 13, respectively.</p>
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21	---	----	<p>Committee also decided to move following item from optional list to main system in Part B.</p> <p>NIR Time Domain Monochromator</p> <p>NIR Photomultiplier Detector</p> <p>Pulsed Laser diode</p> <p>Polarizer</p> <p>Power Backup</p>	<p>Tender Document, Annexure-‘M’, Page. No: 41 of 44,</p> <p>So the continuation of list items in Part B will be as follows</p> <p>Part B, Item No.14: NIR Time Domain Monochromator</p> <p>Part B, Item No.15: NIR Photomultiplier Detector</p> <p>Part B, Item No.16: Pulsed Laser diode</p> <p>Part B, Item No.17: Polarizer</p> <p>Part B, Item No.18:Power Backup</p>
			<p>A single system which can satisfy all the technical requirement mentioned in Part A and Part B. In such a case, the vendor can quote price against Part A itself. However a vendor quoting two separate units which can satisfy all the technical requirement can quote against Part A and Part B separately.</p>	

SECTION 2: Part of Price Bid

If the vendor quote for one system then they can mention one price (in Part A) and mention “price included in main unit” in other places (Part B), however if the vendor quotes for two separate systems, they can quote prices separately. The L1 will be decided by the sum of all the item listed below.

Sl. No.	Item Name	Price
1	Part A	
2	Part B	
3	Bandpass Filter	
4	Integrating Sphere	
5	Neutral Density Filter (Quote if it is required for your system)	
6	Powder Cup (Quote if it is required for your system)	
7	AMC Price for 4 th Year	
8	AMC Price for 5 th Year	
Total value		

It is decided to extend the Bid submission date by following dates

Last date for Bid submission : 04/04/2023 before 4.00 p. m.
Bid opening date : 06/04/2023 @ 11.00 a.m.

Sd/-
Buyer
(Dr. M R Rahman)

Sd/-
Chairman
Central Research Facility