Subject: Reply of CUH on the queries raised by the bidders during the Pre-bid Meeting held on 17/11/2025.
Name of Equipment: Confocal Raman Spectrometer with Photoluminescence Measurement System (UV, Visible and NIR Lasers).

Sr. No.	Name of firm	CUH Specification as per NIT	Bidder's queries	Reply of CUH
1.	**Specialise Instruments Marketing Company**	High-throughput spectrometer: Spectral Range: 200 nm to 2100 nm or better using a single spectrometer:	The tender asks for a single spectrometer covering 200–2100 nm, Due to Efficiency drops when covering full VIS–NIR range where it is optimized for wavelength-dependent mirror and grating coatings to cover the range We would like to propose to allow to provide two integrated spectrographs (225 mm + 800 mm) for optimum UV–NIR performance. Which matches specs and beyond tech requirements.	**No Change**
		Spectral Resolution (FWHM): ≤ 1.2 cm-1 or better at 325nm with grating 3000 gr/mm ≤ 0.3 cm-1 or better at 532 nm excitation wavelength with 3000 gr/mm ≤ 0.2 cm-1 or better @ 785 nm excitation with 1800 gr/mm.	The tender specifies 3000 gr/mm, but our RMS1000 uses 2400 gr/mm on the 800 mm spectrograph to achieve the required high resolution which matches with requested specification.	**No Change**
		Auto-align and optimization of input laser power. Auto-switch and auto align of the laser. Self-validation using built-in internal calibration and intensity correction using reference sample Si and Ne/Argon.	Could you define what do you want from intensity correction?	**Already explained during pre-bid meeting**

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		Open microscope stage to facilitate the use of large samples.	Point 6c asks for Travel range 25 mm in Z, but do you need an open frame? Could you clarify this as you need an open frame for the 4k stage anyway?	**No change**
		Gaseous material for laser-independent Raman shift calibration.	Third calibration material for the Intensity correction of the spectrometer across the spectral range.	**No change**
		Calibration	Can you please clarify -Gaseous material for laser-independent Raman shift calibration? We have Ne for wavelength calibration, and silicon, which is used for Raman shift calibration. Can you please explain how you want intensity correction to be applied?	**Already explained during pre-bid meeting**
		In situ Electrochemistry cell for reflection mode microscopy featuring:	Will you be using water-based or organic electrolytes?	**Yes, Both**
2.	**Laser Spectra Services India Pvt Ltd.**	1.Detector	We request you to change the Open Electrode Front Illuminated CCD detector Back Illuminated Deep Depleted CCD Detector.	**No Change**
		2.Grating	You have asked atleast two gratings from 300/600/1800/2400/3600gr/mm and mentioned that interchangeable gratings without realignment.	**No Change**
		3.Under the Microscope, you have mentioned that the offered system support Autofocus capability.	Please clarify whether it is a software part OR hardware part.	**It is a software part**
		4.Optical table	You have asked 6 legs in the optical table. Please note 6 legs will make unstable and it is not required for 6 legs. 4 legs are enough for the optical table. If	**No Change**

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			you want 6 legs, you will pay for more.	
		5.UPS	Please specify the UPS capacity.	**The equipment should be supplied with a UPS (5 kVA) along with batteries for a backup time of two or more hours.**
		6.Installation experience	The number of installations you have asked for very very specific to one particular company. 5 installations with 325nm Laser and 3 installations for Raman-PL with NIR extension detector. In place of this, please mention, vendor should have experience in installing such a high end Confocal Micro Raman Spectrometer systems and vendor should have factory trained engineers for the service and long term maintenance.	**No Change**
		7.Currency	In the BOQ, we have seen only INR currency option. Please add foreign currency option as well like USD/GBP/EUR as this is the imported item.	**No Change**
		Payment	You have asked following payment terms: 1. 80% payment after the installation and submission of Performance Bank Guarantee 2. 10% balance payment after one month and ensuring the Performance Bank Guarantee till the completion of warranty periods. 3. Remaining 10% will be released in the three equal instalments at the end of each year. Please note this is the imported item and request you to change the payment term to 90% payment by Letter of Credit after the shipment and balance 10% after the successful installation and submission of Performance Bank Guarantee.	**No Change**

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3.	**Lab India Instruments Pvt. Ltd.**	1.Lasers: UV-325 nm	PL filter with Spectral Range upto 1700 nm.	**PL Filters with Spectral Range upto 1550 nm or higher**
		2.Lasers: Vis-532 nm	Vis - Diode 532 nm 50mW or higher , our system 's design requiers 50mW laser power for 532 nm for best performance	**No Change**
		3.Lasers: Vis-532 nm	PL filter with Spectral Range upto 1700 nm.	**PL Filters with Spectral Range upto 1550 nm or higher**
		4.Laser: NIR 785 nm	PL filter with Spectral Range upto 1700 nm.	**PL Filters with Spectral Range upto 1550 nm or higher**
		5.Spectrometer	We have only one system which invia which has focal length 250mm therefore kindly modify Focal length spectrograph 250 mm or higher	**No Change**
		6.Spectrometer	Kindly add spectrometer through put and Signal to noise ratio for 4^{th} Order Si ▪ High through put spectrometer > 30 % ▪ Scan to scan repeatability better than 0.05cm-1 , ▪ High S/N noise ratio for 4^{th} order Si 4:1	**No Change**
		7.Spectrometer	Spectrometer must use with mirrors/ Lenses optics for full spectrometer range	**No Change**
		8. Spectrometer	Switchingfrom UV to Vis to NIR range through software control	**No Change**
		9.Spectrometer	The system must guarantee the optimum signal collection over the full range	**No Change**
		10.Spectrometer	(i) System must have option for ajustable confocaldepthanalysisusingmotorized pinhole / slitwithautomated signal optimisation (ii)Scan to Scan repeatability between 0.05 cm-1 or better (at least 30 measurement) Spectral Resolution 2.5 cm^{-1} (FWHM) at 325 nm 0.5 cm^{-1} (FWHM) at 532 nm	**(i)System must have option for adjustableconfocal depthanalysisusin gmotorizedpinhole or slitwithautomated signal optimisation** **(ii) No Change**

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			0.5 cm^{-1} (FWHM) at 785 nm	
		11.Detector	CCD Detector i) Peltier Cooled to –60 ºC or better, weoffer -70 ºC ii) Peak Quantum Efficiency 48% or higher iii). Dark current 0.03 e- pixel-1 s-1	**(i) Peltier Cooled to –60 ºC or better** **(ii) No Change** **(iii) No Change**
		12.Detector	InGaAs detector for NIR measurements: Peltier cooled at or below -60°	**InGaAs detector for NIR measurements: Liquid nitrogen cooled**
		13.Gratings	Gratings: 3600 l/mm/ 3000 l/mm/2400 l/mm/1800 l/mm/1200 l/mm /600 l/mm and 830 l/mm. (atleast 4 gratings to achieve and demonstrate Raman, PL Range and Resoultion)	**No Change**
		14.Laser power	Motorised ND filters toallow laser attenuation on the samplefrom 0.0005 % (or less) to 100%. Kinldy mention ND flitersssteps as well forgiven laser attenuation (minimum 12). Weoffer 16 steps.	**Motorised ND filters to allow laser attenuation on the sample from 0.01 % (or less) to 100%. (ND filter steps with Nine or more)**
		15.Research grade microscope:	(a) The instrument shouldinclude a t confocal microscope, which must befully and permanentlyintegrated in the main frame of the system and directlycoupled to spectrometer to ensurehighest spatial resolution, sensitivity and stability. (b) Microscope withbinocularsallowinglateralresolution< 1 µm and an axial resolution< 2 µm. (c) Confocal measurements with < 2 µm depth resolution. (d) Motorized confocal slit/pinhole should be continuously adjustable and computer (e) Confocality must be controllable only by adjusting the confocal slit/ hole size continuously through the software.	**No Change**

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		16.Research grade microscope:	Objectives- air exposed: 5x/10X, 20x, LWD 50x, 100x lens. **Additionally, the vendorshouldprovide 50X NIR Lens, if required for the best system performance.** a) High-resolution (7MP - 8 MP or higher) colourvideo camera. to visualise the sample under white light illumination and the laser spot simultaneously m. System should have microscope that should be full compatibility with a low temperature cryostat intégration (low temperature Cryostat future upgrade), used to maintain low cryogenic températures of samples mounted within the cryostat down to Liquid helium temperature to support both Raman and PL mappingwith a resolution of 1 um or lesser.	**No Change**
		17. Optical Table	Table top size of at least 1800mm x1500mm with thickness of 150mm or bigger and support with 4 or 6 leg design.	**No Change**
		18. Installation and training	Installation and three days of training on the customer's site within 15 days of delivery. (provided Installtion site should be ready)	**No Change**
		19.Warranty:	• 3 years warranty on the Raman spectrometer • 1 year warranty on lasers, InGaAs and heating and cooling stage ,	**No Change**
		20.Point no 26	c. The system must allow PL measurements throughput the whole spectral range of the CCD. It is especially desired that the coupling to the spectrometer to cover from DUV to NIR. d. The system shouldbe future upgradablewith Ultra LowFrequencyfilter, - Lowfrequencycut-off must be 10cm-1 or better. User shouldbe able to easily exchange from one VBG filter to anotherwithoutanytool e) Polarized Raman measurement	**No Change**

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			should be compatible with Ultra low Frequency measurement. Please remove this line.	
		21.Page no 8	Terms of Payment: Kindly modify payment terms • 90% Payment on delivery and installation • Balance 10% against submission of PBG	**No Change**
		22. Page no 9	Delivery Period: kindly modify it for 6 month as it is written in the specification	**Delivery period may be read as within 06 months from the date of purchase order release**
		23. Point 20	Rescheduling: Kindly modify this clause at least one month in advance to reschedule delivery time	**No Change**
		24. Page no 13.	Warranty: Kindly modify it as per tender specs warranty clause	**No Change**
4.	**Icon Analytical Equipment Pvt Ltd**	Payment Schedule	A.Commercial : **s.no** 14 - Terms of payment . 1. 80% : After Installation - Accepted 2. Balance 20% after 30 days from the date of handover of System and submission of PBG .	**No Chang**
		InGaAS detector	Technical s.no-2B: InGaAs detector for NIR measurments: Aircool at -60 or below /LN2 cool .	**InGaAs detector for NIR measurements: Liquid nitrogen cooled**