भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुपति
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH TIRUPATI
Srinivasapuram, Venkatagiri Road, Jangalapalli Village, Panguru (G.P),
Yerpedu Mandal, Tirupati District, Andhra Pradesh India – 517619.

CLARIFICATION ON TENDER NUMBER: IISERT/PUR/1101/25

ITEM DESCRIPTION- SUPPLY, INSTALLATION AND COMMISSIONING OF FLUORESCENCE MICROSCOPE WITH SUPER-RESOLUTION

Tender Reference Number – IISERT/PUR/1101/25. dated 13/02/2026 for Supply, Installation and Commissioning of Fluorescence Microscope with Super-Resolution.

Pre-Bid meeting was held on Feb 19th, 2026 at 11.00 Hrs. via Google Meet and minutes of meeting is as under.

At the outset, the Deputy Registrar welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the Project and thereafter briefed 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 and Annexure-III.**

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 Tirupati 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 http:// www.iisertirupati.ac.in/ and https://eprocure.gov.in will remain unchanged. No more correspondence in this regard will be entertained

Sd/-
DATE:19/02/2026 Deputy Registrar

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ANNEXURE -II

PRE-BID CONFERENCE FOR SUPPLY, INSTALLATION AND COMMISSIONING OF FLUORESCENCE MICROSCOPE WITH SUPER-RESOLUTION

TECHNICAL QUERIES AND CLARIFICATION

TENDER NUMBER -: IISERT/PUR/1101/25 **PRE-BID DATE:19/02/2026**

S. No	Query/Clarification Sought	Clarification / Amendment
1	The system shall achieve lateral resolution< 20 nm and axial resolutions 30-40 nm, demonstrated at installation using calibrated fluorescent standards. (Spec 4)	**Not accepted.** Specification retained at <60 nm lateral and ≤200 nm axial. Resolution values of <20 nm / 30–40 nm are achievable only under highly restrictive single-molecule conditions (sparse, bright, photostable emitters on thin fixed samples) and cannot be consistently demonstrated across the range of biological specimens, tissue sections, live cultured cells, thick muscle or neuronal preparations routinely handled at a shared research facility.
2	The system shall be supplied with objectives including 10×, 25× Silicon Oil (NA 0.8–0.9) or 25× water dipping/water immersion (NA 1.05, WD ≥2 mm, live-cell optimized), 40× high NA, 60× or 63× high NA (NA ≥1.4 oil or equivalent), 100× with NA 1.49 or 100× water dipping (NA 1.0, WD ≥1.5 mm), and at least one high NA water immersion objective; all super-	**Accepted with amendment.** Different biological applications demand different objectives: a 25× multi-immersion or water-dipping objective is critical for live imaging of thick specimens (tissue explants, organoids, Drosophila preparations) where refractive index mismatch causes spherical aberration; a dedicated high-NA (≥1.46) oil objective is required for TIRF and single-molecule imaging to achieve the evanescent field and photon collection efficiency needed for localisation precision.

	resolution compatible and chromatically corrected. (Spec 9)	Amended Spec 9: The system shall include (i) 10× overview objective; (ii) 25× multi-immersion or water (NA ≥0.8, WD ≥0.5 mm) for live/thick samples; (iii) 40× high-NA immersion (NA ≥1.3); (iv) 63× high-NA oil (NA ≥1.4) for general super-resolution; (v) 63× TIRF-optimised oil (NA ≥1.46) for TIRF and single-molecule imaging; (vi) 100× high-NA oil (NA ≥1.4); and (vii) at least one high-NA water immersion objective (NA ≥1.1) for live-cell aqueous imaging.
3	Reduce minimum stage travel from 120 × 100 mm to ~114 × 75 mm (Spec 10)	**Partially accepted.** A minimum of 114 × 75 mm is adequate to accommodate standard biological sample formats (35 mm dishes, chambered coverslips, standard glass slides, multi-well plates) while maintaining multi-position and tile-scan capability for a shared facility. Original 120 × 100 mm not retained. Amended Spec 10: Motorized XY stage with minimum travel ≥114 × 75 mm, sub-micron positional accuracy, compatible with standard biological sample formats.
4	Relax resolution to <100 nm lateral and <300 nm axial, citing thick-sample imaging capability (Spec 4)	**Not accepted.** Specification retained. The research programme targets sub-organelle structures whose dimensions require imaging well below the diffraction limit: mitochondrial inner membrane features (~20–100 nm), ER tubule diameters (~50–100 nm), membrane contact sites, and synaptic vesicle organisation. A relaxation to 100 nm lateral / 300 nm axial is equivalent to enhanced widefield or classical SIM performance, insufficient to resolve these structures and defeating the scientific rationale for procuring a super-resolution platform. Thick-sample capability is a desirable secondary feature but does not justify reducing the primary performance criterion.
5	Replace dual simultaneous two-channel detection with single-camera sequential 2-colour acquisition (Spec 7)	**Not accepted.** Not accepted as the sole architecture. Live-cell co-imaging of dynamic organelle interactions (e.g., mitochondria–ER contacts, vesicle trafficking, cytoskeletal remodelling) requires temporally co-registered two-channel detection, sequential acquisition introduces inter-channel time offsets that preclude accurate

		co-localisation in dynamic specimens. Simultaneous two-channel detection is retained as a scientific requirement.
6	Request No. 10 The system shall include a motorized XY scanning stage with minimum travel range of 120 x 100 mm and sub-micron positional accuracy. Nikon can provide 114 x 73 mm travel range. Accordingly, we can propose: The system shall include a motorized XY scanning stage with minimum travel range of 114 x 73 mm and sub-micron positional accuracy.	**Partially accepted.** Partially accepted. Stage travel amended to ≥114 × 75 mm (see S. No. 3). The 73 mm minor axis is not accepted; 75 mm is the adopted minimum.
7	Reduce objective turret to fixed single objective or up to 6 positions (Spec 2)	**Not accepted.** Specification retained. A shared multi-user facility serves diverse biological workflows from tissue-level overview imaging to single-molecule localisation requiring rapid access to multiple magnifications and immersion types within a session. A minimum 6-position motorised turret is operationally essential for this mandate. Fixed single-objective designs are suited to dedicated single-modality setups, not a general-purpose shared instrument.
8	The system shall achieve lateral resolution of <60nm and axial resolution of <200nm, demonstrated at installation using compatible or calibrated fluorescent standards. (Spec4)	**Partially accepted.** Certified or well-characterised sub-diffraction fluorescent bead standards appropriate to the offered imaging modality are acceptable.
9	The illumination system shall be solid-state laser-based with minimum excitation wavelengths of -405 nm, - 488 nm, -561nm, and - 640 nm, each with output	**Not accepted.** Specification retained. The original minimum of ≥50 mW per excitation line is sufficient for multi-modal super-resolution imaging including structured illumination, TIRF, and SMLM. Mandating ≥250 mW as a minimum would impose an unnecessarily restrictive power threshold not scientifically

	power of minimum 250 mW and fast modulation capability.(Spec 6)	required for the primary SIM-based modality, and would disadvantage capable platforms that meet all performance criteria with adequate but lower laser power. Vendors offering higher laser power to support SMLM/STORM fluorophore switching may declare this as a technical advantage, which will be considered during evaluation, but it is not a mandatory minimum. Original Spec 6 retained: solid-state laser lines at ~405 nm, ~488 nm, ~561 nm, and ~640 nm, each ≥50 mW output power with fast modulation capability.
10	The detection system shall include dual scientific-grade sCMOS cameras or single high-performance scientific camera with emission splitting capable of simultaneous multi-channel acquisition with accurate alignment each with quantum efficiency ~85-90%, minimum resolution 2048 x 2048 pixels, low read noise, and high dynamic range. (Spec 7)	**Partially accepted.** Tender requires capability for simultaneous two-channel acquisition; vendor must demonstrate equivalent performance if alternate architecture is proposed. Amended Spec 7: The detection system shall include dual scientific-grade sCMOS cameras or a single high-performance scientific camera with emission splitting capable of simultaneous multi-channel acquisition with accurate alignment, each with quantum efficiency ≥90–95%, minimum resolution 2048 × 2048 pixels, low read noise, and high dynamic range.
11	The system shall be supplied with one fixed l00X objectives with more than 1.4 NA or including l0x, 25x immersion, 40x high NA, 60x or 63x high NA, l00x and at least one high NA water immersion objective.	**Not accepted**. The full objective suite (amended Spec 9, S. No. 2) is required. In a shared facility, lower magnification objectives are essential for sample quality assessment, region-of-interest selection across tissue sections or multi-well plates, and whole-cell live imaging. Restricting the system to a single objective would render it unsuitable for the majority of biological workflows served by this facility.
12	The system shall include all software required to operate, acquire and reconstruct raw data to form biologically meaning fully images with perpetual licenses for unlimited users. (Spec15)	**Clarified.** Vendor must provide acquisition and reconstruction software with perpetual licensing and capability for biologically meaningful image reconstruction. Images collected shall be of publication quality.

		Amended Spec 15: Software shall enable acquisition and reconstruction for all supplied imaging modalities; single-molecule localisation, drift correction, and rendering; 3D/4D multi-channel time-lapse acquisition; and quantitative analysis tools relevant to sub-cellular structural biology (spot detection, co-localisation, distance measurement, surface and filament rendering, ROI tools). Compatibility with open data formats (OME-TIFF, TIFF) is required. Perpetual academic site licensing for unlimited concurrent institutional users is mandatory.
13	Remove explicit stage travel dimension; replace with 'travel range suitable for super-resolution applications' (Spec 10)	**Not accepted.** Not accepted. Specific minimum dimensions (≥114 × 75 mm) are retained to ensure compatibility with the full range of biological sample formats used at this facility standard glass slides (75 × 25 mm), 35 mm dishes, chambered coverslips, and multi-well plates and to provide an objectively evaluable and comparable procurement criterion.
14	Request to remove 100× objective from Spec 9 and replace with 63×/1.46 or higher NA objective optimised for TIRF imaging	**Partially accepted.** A dedicated high-NA objective optimised for TIRF and single-molecule imaging (NA ≥1.46, 63× or equivalent) is accepted as a mandatory addition to the objective suite, as justified by the facility's SMLM and TIRF workflows (see S. No. 2 and 15). However, the 100× high-NA oil immersion objective (NA ≥1.4) is retained. A 100× objective provides higher magnification for studies requiring larger spatial sampling per pixel, such as single-particle tracking, dense localisation maps, and imaging of small organelles or protein clusters, and is operationally distinct from the 63×/1.46 TIRF objective. Both objectives serve complementary biological applications and both are required. Amended Spec 9 as stated at S. No. 2 stands.
15	Request to remove lasers from the five-year on-site warranty, citing lasers as consumables (Spec 20)	**Not accepted.** Specification retained. Laser modules are integral system components whose failure renders the entire instrument non-functional; they are not consumables in the conventional sense. For a publicly funded shared research facility, mid-contract laser failure without warranty cover would impose significant

		unbudgeted expenditure and extended instrument downtime affecting multiple user groups. All costs, including laser warranty, shall be priced into the bid. The original Spec 20 is retained in full: five-year on-site warranty covering optics, super-resolution illumination module, lasers, cameras, electronics, controllers, and reconstruction software, inclusive of parts and labour.
16	Request to include a comprehensive SMLM module with PALM/dSTORM, TIRF/HiLo/widefield acquisition modes, on-the-fly processing, automated drift correction, and multi-channel online fitting as a mandatory specification	**Accepted with amendment.** Accepted with amendment. Single-molecule localisation microscopy is a scientifically essential modality for this facility's research in protein organisation, membrane dynamics, and sub-organelle architecture at the molecular scale. The requested capabilities are technically well-justified and consistent with the Committee's decision at S. No. 14. Amended specification Spec 3 is added: The system shall include a fully integrated SMLM module supporting: (i) PALM and dSTORM for single-molecule localisation of genetically encoded fluorescent proteins and organic dyes respectively, achieving lateral localisation precision of 10–30 nm and axial resolution of ≤150 nm in evanescent-field mode; (ii) acquisition modes including widefield, TIRF, and HiLo (highly inclined and laminated optical sheet) illumination, selectable for all laser lines in the UV–visible spectral range; (iii) automated and fiducial-based lateral drift correction, operable without sample modification; (iv) on-the-fly (online) single-molecule fitting, filtering, particle grouping, and localisation map rendering during acquisition; (v) activation power control for photoactivatable fluorophores (PALM) with independent activation and readout laser regulation; and (vi) multi-channel simultaneous/sequential SMLM acquisition with channel registration and co-localisation analysis. The SMLM module shall be fully integrated with the SIM acquisition software and shall not require separate hardware reconfiguration to switch between SIM, TIRF, and SMLM modes. Minimum acquisition speed in TIRF/HiLo mode shall be ≥20 frames per second at ≥512 × 512 pixel resolution.

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ANNEXURE -III

COMMERCIAL QUERIES AND CLARIFICATION

TENDER NUMBER -: IISERT/PUR/1101/25 **PRE-BID DATE:19/02/2026**

S. No	Query/Clarification Sought	Clarification / Amendment
1	EMD Exemption	Please note that, under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy

Notes: (1) Specifications not addressed above remain unchanged.

Dr. Prasanna Katti (IISER Tirupati)		Dr. Vasudharani Devanathan, (IISER Tirupati)	
Dr. Pavithra L Chavali (IISER Tirupati)	Dr. Ramkumar Sambasivan (IISER Tirupati)	External-Members: Dr. P. Chandrasekar (CCMB)	NR. Chackravarthi (CCMB)