SCHOOL OF CHEMISTRY

SAMBALPUR UNIVERSITY, JYOTI VIHAR-768019, SAMBALPUR, ODISHA

No. 114/PGCH **Date: 31.07.2026**

QUOTATION CALL NOTICE AND ADVERTISEMENT FOR PROJECT ASSOCIATE-I

1. Sealed quotations are invited from intending manufacturers/ dealers/ suppliers/ firms having a valid GST certificate for supply of a Confocal Microscope with FCS and FCCS setup **on or before 04.09.2026 up to 4.00 PM**.
2. Applications are invited from eligible candidates for the temporary position of Two (02) "Project Associate-I" under the ANRF-sponsored project **on or before 20.08.2026**.

The details of the requirement can be obtained from the undersigned or may visit Sambalpur University website (www.suniv.ac.in). The authority reserves the right to cancel the quotation call and advertisement without assigning any reason thereof.

Sd/-
Head, School of Chemistry

Memo No. 115/PGCH **Date: 31.07.2026**

Copy to:

1. Deputy Director, Advertisement, Information and Public Relations Department, Govt. of Odisha, Bhubaneswar with a request to publish the advertisement in the following Odia/English dailies with minimum size as prescribed by I&PR Department, Govt. of Odisha on or before 04.08.2026
   A) The Samaja (All Odisha Edition)
   B) The Times of India (All India Edition)
   He/She is further requested to submit the bills in triplicate to Dr. Hirak Chakraborty, PI-ANRF-ARG Project, School of Chemistry, Sambalpur University along with a copy of the advertisement for payment.

2. Director, E-Governance, Sambalpur University to upload to the University Website.

31/07/2026
Head, School of Chemistry
Sambalpur University

Head
School of Chemistry
Sambalpur University
Jyoti Vihar-768019

INFORMATION BOOKLET

ON

QUOTATION CALL NOTICE FOR

CONFOCAL MICROSCOPE WITH FCS AND FCCS SETUP

For the ARNF-ARG Project of Dr. Hirak Chakraborty,
School of Chemistry, Sambalpur University

Letter No. 114/PGCH **Dated: 31.07.2026**

SAMBALPUR UNIVERSITY

JYOTI VIHAR, BURLA-768 019, ODISHA

Letter. No. 114/PGCH ***Dated: 31.07.2026***

QUOTATION CALL NOTICE

Sealed quotations are invited from the interested Manufacturers/Authorized dealers/Registered firms to supply the following item for the ANRF-Advanced Research Grant of Dr. Hirak Chakrabroty, School of Chemistry, Sambalpur University, on 'FOR' destination basis. ***The last date of submission of quotation is 04.09.2026 up to 4.00 P.M.*** Valid copy of PAN/GST No. and a bank draft of 2.0% of the quoted price as EMD, drawn in favour of Comptroller of Finance, SU of any bank payable at State Bank of India, Jyoti Vihar Branch, Burla, code No.6672. The EMD should be enclosed along with the quotation; otherwise, the quotations will be rejected. The Head, School of Chemistry, Sambalpur University reserves the right to reject any or all quotations without assigning any reason thereof.

Terms & conditions:

1. The quotation shall be submitted with separate technical specifications and financial bid in a sealed cover. On the top of the envelope, please mention 'ANRF-ARG Project''

2. The sealed quotations in the name of the 'Head, School of Chemistry, Sambalpur University, Jyoti Vihar, Burla, Odisha 768019' will be received up to 4.00 P.M. on all working days up to 04.09.2026 by speed post/registered post only. The quotations may be sent to Dr. Hirak Chakraborty, PI, ANRF-ARG Project, School of Chemistry, Sambalpur University, Jyoti Vihar-768 019, Sambalpur, Odisha.

3. The suppliers must be either the manufacturer of the instruments/equipment or the authorized dealer/agent/representative of the manufacturer. In the case of a dealer/agent/representative, a certified valid copy of the dealership/agency/authorization issued by the manufacturer should be enclosed with the quotation.

4. The detailed specifications and other necessary information of the instrument/equipment are given in this notification. The suppliers may refer to the desired instrument/equipment.

5. The rates/price should be quoted in Indian currency. The F.O.R – Sambalpur University and prices should include GST as applicable as per Government of India policy.

6. Delivery of the instruments shall be to Dr. Hirak Chakraborty, PI, ANRF-PAIR Project, School of Chemistry, Sambalpur University, Jyoti Vihar-768 019 unless otherwise specified. The price shall be inclusive of all taxes, transportation cost and cost of installation/commissioning, trial operation, comprehensive training and clearance charges (FOR Sambalpur University, Jyoti Vihar). Necessary documents for clearing the consignment through customs authorities will be provided by the University.

7. The supplier must have supplied at least one similar EQUIPMENT/INSTRUMENT to any Government Research Laboratories, Educational Institutes or Industries, in the last five years. Supporting documents such as P.O. Copy and corresponding installation certificate against the same need to be furnished.

8. 100% payment will be made after delivery and installation of the ordered items.

9. The EMD of the successful tenderer will be refunded after completion of the supply and installation of the equipment to our satisfaction.

10. Documents such as instrument operation, calibration, maintenance, drawing, descriptive literature etc., if any, along with the original instruction and data analysis manual should be supplied by the successful tenderer along with the equipment.

11. Instruments/equipment should be unpacked in the presence of the concerned person of Sambalpur University. The consignment will be accepted only after inspection.

12. Inspection certificates of the instrument/equipment inspected by the qualified engineer of the manufacturer and packed in accordance with the terms and conditions of this order must be enclosed.

13. During the warranty period or later whenever the firm is called upon to attend to the rectification of the defects/faults in the consignments, the firm shall attend to the repair work within a week. They should render timely backup service whenever called upon. A certificate to the effect should be attached to the tender.

14. A certificate to the effect that the instrument/equipment supplied is fully operational and no additional accessory or spare is required to make the instrument/equipment run should be issued along with the delivery challan/invoice. The Head, School of Chemistry, Sambalpur University reserves the right to refuse payment in the event of not furnishing this certificate at the time of supply.

15. The Head, School of Chemistry, Sambalpur University reserves the right to accept/reject any tender without assigning any reason thereof.

16. Once the rate is approved by the Purchase Committee, a purchase order is placed on the successful tenderer for supply of the equipment/instrument. The decision of the Purchase Committee shall be final and binding.

17. All disputes are subject to the Court of Law in the jurisdiction of Sambalpur.

Detailed Specification for Confocal Microscope with FCS and FCCS setup

A **research-grade automated confocal fluorescence microscope** engineered for single-molecule detection, Fluorescence Correlation spectroscopy, and fluorescence cross-correlation spectroscopy studies.

The system combines a high-NA water-immersion objective, low-noise continuous-wave lasers, two single-photon counting detectors, and a high-speed digital correlator with advanced analysis software, ensuring exceptional sensitivity and temporal resolution for single-molecule and nanoscale fluorescence measurements.

Items		**Quantity**
Inverted Research Grade Automated Confocal Fluorescence Microscope		**1 unit**
Minimum Microscope Specifications		
A **research-grade automated confocal fluorescence microscope** engineered for single-molecule detection, Fluorescence Correlation Spectroscopy, and fluorescence cross-correlation spectroscopy studies designed for advanced imaging and spectroscopy applications. It is equipped with **three output ports** • one dedicated for **Fluorescence Cross-Correlation Spectroscopy** measurements, • one for a **cooled camera** for conventional fluorescence imaging, and • one configured with a hyperspectral imaging camera. This versatile configuration supports laser scanning, multichannel fluorescence, and quantitative spectral imaging with precise motorized control and software automation.		
Detailed Specification		
Equipment Type	Infinity-corrected confocal inverted microscope	
Optical System	Color-corrected infinity optical system for high-contrast fluorescence imaging	
Observation Tube	Siedentopf widefield binocular, 45°, Field Number (F.N.) 22	
Eyepieces	10X / 22 mm extra-wide field eyepieces	
Objectives	Plan apochromatic infinity-corrected long working distance objectives (5X, 10X, 20X, 45X, 60X)	
Nosepiece	5-position nosepiece with filter slots for fluorescence and transmitted light configurations	
Sample Stage	Stepper motor-controlled 120 × 120 mm motorized XY stage with holders for multi-well plates, Ø35 mm, Ø54 mm, Ø65 mm Petri dishes, and glass slides	
Turret	Motorized filter turret with 4 positions	

Fluorescence Filter Wheel	Dual-deck motorized filter wheel (8 slots per deck) for multichannel fluorescence	
Condenser	Abbe condenser	
Focus Drive	Motorized fine focus with stepper control, 50 mm stroke and fine adjustment for high-precision focusing	
Fluorescence Camera		**1 unit**
Fluorescence Camera Minimum Specifications		
Sensor Type	Cooled 20 MP CMOS (Sony)	
Quantum Efficiency	84% @ 535 nm	
Resolution	5472 (H) × 3648 (V) pixels	
Pixel Size	2.4 µm × 2.4 µm	
Sensor Size	15.86 mm (1 inch)	
Shutter Mode	Rolling shutter	
Read Noise	< 1 e^-	
Cooling	Forced-air cooling, -15°C below ambient (at 25°C)	
Frame Rate	14 fps @ full resolution; 53 fps @ 2736 × 1824; 67 fps @ 1824 × 1216	
Binning	2×2, 3×3, 4×4	
Exposure Time	18 µs – 1 hour (Auto / Manual)	
Image Formats	JPG, PNG, TIFF, DICOM	
Data Interface	USB 3.0	
Bit Depth	8-bit / 16-bit	
Camera Dimensions	85 × 85 × 109 mm	
Power Supply	12 V DC	
Upgradable for Fluorescence Recovery After Photobleaching (FRAP) Module		
• Software-controlled Region of Interest (ROI) photobleaching • Programmable laser power and bleaching duration • User-selectable bleaching ROI (point) • Real-time fluorescence recovery monitoring		
Spectral Illumination System		**1 unit**
High Throughput f/4 Spectral Illumination System for Fluorescence Excitation This system enables precise spectra excitation for fluorescence. It combines a dual grating monochromator and a 300-Watt Xenon arc Lamp to deliver a tunable excitation beam from 200 nm to 2200 nm		
Monochromator Specifications		
Optical Layout	Czerny–Turner, f/4 design	
Focal Length	200 mm	
Grating Mount	Dual-grating motorized turret	
Wavelength Range	200–2200 nm	
Gratings	1200 l/mm holographic & 600 l/mm precision ruled (50 × 50 mm each)	

Entrance / Exit Ports	Single pair	
Slits	Micrometre-controlled; width 10 µm–2 mm, height 12 mm	
Resolution	0.1 nm (with 25 µm slit & 1200 l/mm grating)	
Wavelength Accuracy	±0.15 nm	
Linear Dispersion	2.25 nm/mm	
Mechanical Resolution	0.000072°/step	
Filter Mount	12.5 mm filter slot for higher-order suppression	
Fiber Coupler	Included for microscope excitation coupling	
Software	Spectra Scan – automated wavelength and intensity control	
Xenon Arc Lamp Source		**1 unit**
Lamp Type	300 W ozone-free Xenon short arc	
Voltage / Current	20 V / 15 A	
Arc Gap	2.6 mm	
Luminous Flux	7000 lm	
Spectral Range	280–2700 nm	
Average Life	900 hours	
Power Supply	Constant current, switched-mode regulated supply	
Display	Digital current and voltage display	
Output Power Variability	±20%	
Cooling	Forced air cooling	
Input Power	230 V AC, 50 Hz	

System Highlights

- Three independent output ports for **fluorescence cross-correlation spectroscopy**, **fluorescence imaging**, and **hyperspectral acquisition**
- Fully motorized and software-controlled optical platform
- High-resolution cooled CMOS camera for quantitative imaging
- Tunable excitation source for wide spectral coverage (UV-NIR)
- Suitable for **advanced fluorescence correlation and lifetime studies**

Laser Excitation Modules

The system includes 4 continuous wave (CW) low-noise laser sources for multi-wavelength excitation in single-molecule fluorescence studies

Laser	**Wavelength**	**Power**	
Laser 1	375 ± 5 nm	150 mW	**1 unit**
Laser 2	488 nm	50 mW	**1 unit**
Laser 3	532 nm	100 mW	**1 unit**
Laser 4	655 nm	100 mW	**1 unit**

Common Laser Specifications

- Mode of Operation: Continuous Wave (CW)
- Beam Divergence: ≤ 1.5 mrad (typical)
- Beam Diameter: 1.5 – 4 mm

• Power Stability: < 2–3% over 4 hours • Modulation: Analog / TTL (0–30 kHz) • Cooling: Thermoelectric (TEC) • Warm-up Time: < 1 minute • Lifetime (MTTF): > 10,000 hours • Beam Height: 25 mm		
Detector Module		**2 units**
Model	Excelitas SPCM-AQRH-13FC	
Type	Single Photon Counting Module (SPCM)	
Wavelength Range	400–1060 nm	
Peak Photon Detection Efficiency (PDE)	> 70% @ 650 nm	
Active Area	180 µm	
Dynamic Range	> 35 Mcps	
Output Pulse Width	10 ns	
Dark Count Rate	< 250 cps	
Dead Time	22 ns (count rate below 5 Mcps)	
Connector	FC/PC fiber adapter	
Cooling	Thermoelectrically cooled and temperature-controlled	
Operating Temperature	5°C – 70°C	
Power Supply	5 V DC (included)	
Correlator Card (Real-Time Digital Correlator)		**1 unit**
Model	Flex99OEM-12/E	
Functions	Auto-correlation and cross-correlation	
Minimum Sampling Time	12.5 ns	
Number of Channels	288 real-time channels	
Delay Time Range	12.5 ns – 45 minutes (multiple tau channel layout)	
Input Signal	Standard TTL pulses (BNC input)	
Maximum Intensity	80 MHz (integrated over 480 ns)	
Power Supply	12 V DC included	
Interface	Dynamic Link Library (DLL) for software integration	
Channel Architecture	Multiple-tau design with increasing sample times to extend delay range efficiently	
Optical Assembly / Receiving–Transmission Module		
Opto-Mechanical Design	Custom assembly for confocal correlation measurements	
Optics	Color-corrected triple-lens collimation system	
Mounts	Kinematic and precision-adjustable mounts	
Fiber Coupling	XYZ motorized fiber positioner	

Filters and Dichroics	High-quality optical filters (Semrock / Chroma) for excitation and emission separation	
Optical Fiber Set		
Core Diameters	25 µm, 50 µm, 100 µm	
Wavelength Range	320–1600 nm (VIS–NIR)	
Numerical Aperture (NA)	0.22	
Index of Refraction	Core: 1.458, Cladding: 1.441	
Acceptance Angle	25.4°	
Length / Connectors	1 m each, FC/PC terminated	
Control Electronics and Software		
Electronics Interface	Laser control, detector interface, and correlator synchronization	
Software	FCS Analysis Suite	
Functions	Real-time acquisition, correlation computation, intensity trace display, lifetime fitting, and diffusion analysis	
Data Export	Supports ASCII, CSV, and image formats	
• **Upgradeable to Confocal Micro Raman Spectrometer** • **Upgradeable to Fluorescence Lifetime Imaging (FLIM)** • **Upgradeable to Time-Correlated Single Photon Counting (TCSPC)**		
Optical Table with Vibration Isolation Table		
Breadboard size	1200 × 900 mm	
Breadboard type	Standard or Honeycomb	
Hole pattern	M6 tapped holes on 25 mm grid	
Flatness tolerance	±0.1 mm over 300 × 300 mm (Honeycomb type)	
Vibration isolation support model	PVISI Series, model for 1200 × 900 mm (120-90 TT)	
Isolation natural frequency (vert/horiz)	~4–8 Hz	
Leg configuration	Pneumatic interconnected air-legs	
Air pressure	~25–35 psi	
Integration note	Power supply rack decoupled from tabletop support	
System Specifications		**1 unit**
System	Branded Workstation **Operating System:** Windows 11 Professional (64-bit) or later	
Processor	Intel® Core™ i7 (14th Generation or newer) or better	
Memory	**Installed Memory:** 32 GB DDR5 and above	
Graphics	Dedicated NVIDIA graphics card with **8 GB GDDR6 memory or above**	

	Suitable for scientific imaging, image processing, 3D visualization, AI, and rendering applications	
Storage	Primary Storage: **1 TB NVMe PCIe SSD or above** Provision for additional SSD/HDD expansion	
Display	**27-inch or larger** monitor Resolution: **4K UHD (3840 × 2160) or above** HDR support preferred Height- and tilt-adjustable stand preferred	
Connectivity	USB 3.2 and USB Type-C ports HDMI and DisplayPort outputs Gigabit Ethernet Wi-Fi 6 or above Bluetooth 5.0 or above Audio input/output ports	
Power Supply	230 V AC, 50 Hz Power Supply: **650 W or above**, suitable for the configured system	
Power Backup System		**1 unit**
Model: 5 kVA Online UPS **Type:** True Double Conversion Online UPS		
Capacity	5 kVA / 4 kW	
Input Voltage Range	160–300 V AC	
Input Frequency	50 Hz ±5%	
Output Voltage	230 V ±1% (pure sine wave)	
Output Frequency	50 Hz ±0.1 Hz	
Battery Type	Sealed Lead Acid, Maintenance-Free	
Backup Time	30–45 minutes (typical load)	
Display	LCD / LED indicators for voltage, frequency, load, and battery status	
Communication Port	USB / RS232 with monitoring software	
Protection	Overload and short-circuit protection Surge and spike suppression Battery overcharge/discharge protection	

Sd/-

Head
School of Chemistry, Sambalpur University