
 <p>भाकू अनुसंधान संस्थान ICAR</p>	<p>पादप कार्यिकी संभाग DIVISION OF PLANT PHYSIOLOGY भा.कृ.अ.प.—भारतीय कृषि अनुसंधान संस्थान ICAR-Indian Agricultural Research Institute नई दिल्ली—110012 (भारत) NEW DELHI - 110 012 (INDIA)</p>	 <p>भारतीय कृषि अनुसंधान संस्थान IARI 1992</p>
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File No.21-7/AIC/CM/24-25/SFC

Dated: 13-01-2025

**NOTICE FOR E-PROCUREMENT THROUGH GeM**

Online GeM e- bid are invited from reputed Manufacturere/Supplier/Authorized dealer in two bid system (Technical and Financial) for purchase of scientific equipment **Confocal Microscope with Accessories, Qty. 01 No. for Agricultural Innovation Centre** on behalf of Director, ICAR-Indian Agricultural Research Institute, New Delhi. Please visit [www.iari.res.in](http://www.iari.res.in) for details Rules and Regulation and log in [www.gem.gov.in](http://www.gem.gov.in) for online e-bidding.

Details of Gem Bid is/are as mentined below:

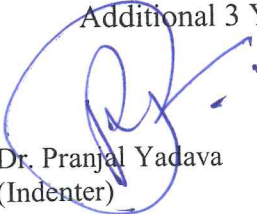
GeM Bid No.	<b>GEM/2025/B/5815815</b>
Bid Submission start date and time	13-01-2025
Last Date & Time for submission of bid	12-02-2025 15.00
Date & Time for opening of Technical Bid	12-02-2025 15.30
Date of Pre-Bid meeting	21/01/2025 at 03:00 P.M

Sd/-  
Asstt.Admn.Officer

## Specifications for Confocal Microscope with accessories

### A. General Specifications

1. The imaging workstation in confocal microscope should include highly sensitive spectral, compact, linear scanning confocal system with detectors, electronics, and scanners for versatile imaging of many different samples like, imaging for plant samples, cell biology applications, protein-protein interactions, imaging of cell culture and tissues, live cell imaging, multidimensional imaging, FRET, FRAP, photactivation, calcium imaging, etc.
2. It should have optical slicing capabilities, should include multichannel fluorescence imaging Z-stack, time-lapse imaging, advanced 3D imaging and photon counting/Analog Counting experiments.
3. It should be capable to perform fast imaging while maintaining large field of view and good image quality etc.
4. The imaging workstation can be tailored to our application. The complete system should have optimized communication between all the different components and is supplied via one company.
5. Latest 64 bit control computer with Intel Xeon Processor, DDR RAM 64 GB or better, HDD: 4TB SATA or better, DVD, SuperMulti SATA +R/RW, Graphics card 8 GB or better, Gigabit Ethernet, Windows 10 64 bit or advance with latest MS Office pre-loaded; USB 2.0/3.0, Fire wire. 32" X 2 LCD TFT monitors/34 inch Curved 4K monitor ; Suitable online UPS to support the complete system (not less than 5 KVA) with minimum 30 minutes back-up time.
6. A dedicated support team should be available for installation and support as we grow with the system.
7. The equipment should be CE or equivalent certified.
8. Before delivery, the system should be fully integrated within factory.
9. Proof of installations in Reputed Institutes should be provided
10. At the time of installation, the company should provide full demonstration of the system and training (minimum 5 days) to the specified IARI staff members/ students in operating the system.
11. The system should come with comprehensive standard warranty of minimum 2 years.  
Additional 3 Years warranty should be quoted in Option.

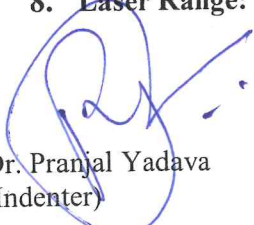
  
Dr. Pranjali Yadava  
(Indenter)

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Dr. Pranjali Yadava / Senior Scientist

12. The company should provide an affidavit committing to shift the system from initially installed venue to another venue at no extra cost, as and when asked by IARI- once in the lifetime of the system.

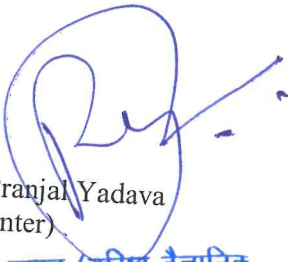
## **B. Technical Specifications:**

1. **Confocal Microscope Type** – Should be **inverted** to cater to different research needs.
2. **Optical and Spectral Performance:**
  - A. Spectral range should be 410nm-650nm or better.
  - B. Emission filters should be motorized spectral detection.
  - C. Spectral unmixing - software should be supported for multiplex imaging of fluorescence with overlapping spectra.
  - D. It should have motorized Z focus drive with a better resolution.
3. **Imaging Modes:** Microscope should have multiple imaging modes like confocal, widefield, transmitted light and fluorescence imaging
4. **Field of View (FOV):** it should have good field of view options available.
5. **Solid State Laser module should be :**
  - A. 405 nm
  - B. 488 nm
  - C. 561 nm
  - D. 633nm/638nm/639nm/640nm
6. **Scanning Technology:** confocal microscope system should use scanning technology, w tandem / hybrid scanning for flexibility or hybrid scanning with simultaneous spectral detection.
7. **Laser Power and Illumination :** Microscope should have high power LED for uniform illumination
8. **Laser Range:** it should have a laser range/spectral range (410-600 nm or better) with LED.

  
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9. **Resolution:** it should have super-resolution with (Differential Interference Contrast) with hybrid detection system.
10. **Detectors:** Microscope should have multi alkali PMT detectors for super resolution detection.
11. **Software:** it should contain the features as-
- A. **Real-Time Imaging:** Enables fast acquisition of images for live-cell imaging and dynamic studies.
  - B. **3D and 4D Imaging:** Supports volumetric imaging and time-lapse to analyze cellular processes in 3D and 4D.
  - C. **Image Analysis:** comprehensive imaging software with all required modules for image analysis.
  - D. **Automated Features:** Software should have automated features.
  - E. **Live Imaging:** microscope should support **live-cell imaging**, optimized for different speeds and resolution demands.
12. **Laser Range:** it should have a laser range/spectral range (410-600 nm or better) with LED.
13. **Pixel size:** Microscope should have a configuration of pixel 2K or better with adjustable pixel size for fast imaging.
14. Microscope system should have the FRAP (fluorescence recovery after photo bleaching).

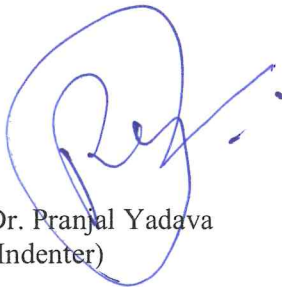


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## **15. Desirable Specifications :**

1. Shift free DIC accessories for all objectives.
2. Scanner unit should have laser ports for at least 4 lasers to be integrated with the system. Lasers should be used during experiment otherwise switched to standby mode to help preserve the sample.
3. Absolute linear scanner movement to ensure equal pixel dwell-times as a prerequisite for any quantitative study. Constant Scanner monitoring and feedback positioning for artifact-free, fast, and reliable scanning, also in bidirectional mode.
4. Ai Based Technology to adjust laser power and detector Gain Should be available
5. The microscope, laser, scanning module, and additional accessories, along with data acquisition and synchronization is managed through real-time electronics utilizing an oversampling read-out logic. The data transfer between the real-time electronics and user PC is via LVDS/ similar technology with the ability to evaluate the data online during image acquisition. Superior multi-threaded software architecture should allow changing imaging parameters even while the instrument is scanning.
6. The microscope system should be upgradable with a fully programmable and computer controlled onstage incubation system with temperature, humidity, CO<sub>2</sub> Control.



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