

CORRIGENDUM

IGIB/5-1NC/124/2024-25(552)

23.10.2024

Subject : In vivo animal Imaging system

Ref.:- CPPP Tender ID No. 2024_CSIR_209320_1 Dated 26.09.2024

With reference to the above tender this is to inform that after pre-bid meeting the technical specifications has been revised.

Bidders are requested to submit their bid as per the revised technical specification (enclosed with this corrigendum). All other terms and conditions of the tender documents will remain same.

Revised technical specifications encl.

31/10/24
Stores and Purchase Officer
21/10/24

Specifications of In vivo animal Imaging system

Application:

- Must be completely automated system image live small animals like Zebrafish, rats, mice, etc.
- Must be suitable for multimodal, biphotonic, fluorescence, bioluminescence and chemiluminescence and radio isotopic studies for in-vivo and in-vitro usage

System:

- Complete system must provide with light tight cabinet, CCD camera, excitation and emission filters sample stage, gas anesthesia system and computer work station with required software for analysis.
- Complete Imaging system should facilitate noninvasive longitudinal monitoring of disease progression, cell trafficking, and gene expression patterns in living animals.
- An optimized set of high-efficiency filters and spectral un-mixing algorithms to take full advantage of bioluminescent and fluorescent reporters across the blue to near-infrared wavelength region.
- The system should provide 3D images with DICOM compatibility format for co-registering data captured using other medical imaging equipments such as PET, CT, MRI etc
- It also should offer single-view 3D tomography for fluorescent and bioluminescent reporters that can be analyzed in an anatomical context using Digital Mouse Atlas.
- Computer (Minimum specifications): Latest software and hardware, 16 GB RAM, intel core i7 processor, Windows 10 or above operating system, 1TB HD storage, 24" widescreen LED Monitor, multiple USB ports, live image visualization and recent analysis software

Fluorescence Illumination modes:

For advanced fluorescence imaging, the system should contain either trans-illumination or epi-illumination to illuminate in vivo fluorescent sources and quantification of deep tissue sources

3D surface topography:

The system should provide 3D diffuse fluorescence tomography to determine source localization and concentration using the combination of structured light and trans-illumination fluorescent images.

The system should be able to create 3D images with accurate reconstruction of light sources in deep tissues.

Filters:

The instrument should be equipped with 10 narrow-band excitation filters (30nm bandwidth) and 18 narrow-band emission filters (20nm bandwidth) that assist in significantly reducing autofluorescence by the spectral scanning of filters and the use of spectral unmixing algorithms.

In addition, the spectral unmixing tools should allow the researcher to separate signals from multiple fluorescent reporters within the same animal.

Specifications:

Camera must have all features given below

Inclusive of Grade 1 (thermoelectrically cooled) Cooled CCD (-90 deg C)
CCD Size should be approximately 2.7 x 2.7 cm

16-bit digitizer for broad dynamic range

Operating Temperature around -90°C

Imaging Pixels should not be less than 2048 x 2048

Quantum Efficiency in the range of >85% 500 – 700 nm; >30% 400 – 900nm

Image Pixel resolution 13.5 microns²

Optical Field of View (FOV)

Minimum Detectable Radiance in the range of 70photons/s/sr/cm² Field of View (FOV) 3.9 x 3.9 cm to 23 x 23 cm Minimum Image Pixel Resolution: 20 microns (at f/1) Read Noise < 3 electrons for bin=1,2,4; < 5 electrons for bin=8,16

Dark Current (Typical) <100 electrons/s/cm²

The system must be sensitive enough to detect single cell under in vivo and in vitro conditions. Please provide support from published literature in reputed scientific journals.

System should be compatible for co-registrations for the integration with micro-CT imaging technology

Rodent Anesthesia System

Rodent Anesthesia System should allow researchers to use real-time in vivo imaging to monitor and record molecular and genetic activity in mice and rats using isoflurane gas.

Key features should include:

- Delivers anesthesia to two instruments, an induction chamber and benchtop accessories simultaneously
- Compact and lightweight design saves bench space and allows portability
- Vacuum system for active scavenging of manifolds and benchtop accessories
- Separate dedicated exhaust for induction chamber to prevent anesthesia exposure when opening.
- Oversized vented induction chamber to accommodate rats

Analysis software:

1. Must perform background subtraction with the image algorithms based on computing pure spectra
2. Should perform spectral unmixing of multiple reporters (at least 4-5) within same animal
3. Provision of additional analysis software licence for off-site data analysis should be made

General:

- The company should have proven track record of sales and service with at least 3 installations of similar systems in India. Provide a complete list of current installations in India
- The company should have complete, pre optimized reagents on the instrument, such as optical reporter cell line & micro-organisms to support in vivo experiment needs and they should provide a price list for all the reagents.
- The company should provide a price list for all the spare parts of the instrument.
- The company should provide tray accessories/kit for higher throughput optical imaging

Warranty:

1. Complete warranty of 5 years from manufacturer on complete system.
2. Complete warranty of 5 years from manufacturer on all the accessories (CCD, Camera, Chiller, XP power supply, Spectrum Filter Wheel, Lens Rotation Stage Assembly Kit, AAY Module assembly, KIT-Galvanometer, Motor Driver, Tested IVIS Replacement Laser Assembly, PCBA DAQIO Board, Excitation Filter Wheel Assy and other parts)
3. Complete warranty of 5 years from manufacturer on all computer systems.
4. Company should also provide the CMC for another FIVE years (post warranty) should be quoted separately. The price comparison shall be taken into account with the basic cost of the equipment with 5 years warranty and post warranty CMC for five years. Failure to comply this condition entails rejection of bids.
5. Satisfactory performance certificate at least from three users where the same model is installed should be submitted.
6. Company should give a declaration on that the prices of spare parts will be fixed for 5 years after the first 5 years of complete warranty.

Training:

1. The technical support team must provide comprehensive customer support, including site preparation, installation.
2. The technical support team must provide sufficient training to the researchers to handle the instrument.
3. Sustained support on all aspects of the workflow is must.