



**ALL INDIA INSTITUTE OF MEDICAL SCIENCES,
JODHPUR**

Admn/Prop/70/2021-AIIMS.JDH

Dated: -09th November 2021.

Subject: Purchase of Motorized Fluorescence Microscope with FISH Software the Department of Pathology at AIIMS, Jodhpur on proprietary basis-

Inviting comments thereon.

The Institute is in the process to Motorized Fluorescence Microscope with FISH Software for the department of Pathology at AIIMS, Jodhpur from M/s MetaSystems Hard and Software GmbH, Germany on proprietary basis. The proposal submitted by M/s MetaSystems Hard and Software GmbH, Germany and PAC certification by user are attached.

The above document are being uploaded for open information to submit objection, comments, if any from any manufacturer regarding proprietary nature of the equipment within 21days of issue giving reference Admn/Prop/70/2021-AIIMS.JDH. The comments should be received by office of Deputy Director (Admin), Medical College at AIIMS, Jodhpur on or before 30th November 2021 upto 03:00 PM failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

Deputy Director (Admin)

Enclosed: Related documents enclosed.



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Your Customer No.

Our Reference

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Date
Aug 5, 2021

Proprietary Nature Certificate

This is to confirm that the Artificial Intelligence enabled Deep Neural Network based interactive and automatic karyotyping software – IKAROS DNN is a proprietary software of M/s MetaSystems Hard and Software GmbH, Germany. The above-mentioned software is covered by the following patent

United States Patent 10,991,098
Hanselmann , et al. April 27, 2021

M/s MetaSystems Hard and Software GmbH, Germany are the sole manufacturers of this product. M/s MetaSystems India (Bangalore) Private Limited is a 100% subsidiary of M/s MetaSystems Hard and Software GmbH and responsible for sales, service and application support of these products directly or through their business partners.

Certified that no substitute make/model will serve the purpose and also that no other manufacturer can copy or produce these items in part or in total.

MetaSystems India (Bangalore) Pvt. Ltd.


Ingbert Miesczalok
Managing Director

















www.metasystems-international.com



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Revised specifications for Motorized Fluorescence Microscope with FISH and Karyotyping Software

System should consist of Upright Motorized Microscope with Epi-Fluorescent attachment compatible with Image acquisition unit (Digital CCD camera) and Image analysis software for FISH and karyotyping analysis.

A) Upright Motorized fluorescence Microscope; suitable for Bright field & Fluorescence Imaging;

System should consist of upright motorized trinocular microscope with epi- fluorescent attachment.

- Optical system: Fully apochromatically corrected optical system for transmitted and reflected fluorescence beam path.
- Illumination: 100W Halogen bulb in transmitted illumination.
- Observation Tube: Wide field trinocular tube, inclination 30 degree and three step light inter-pupillary distance 55 to 75mm, path selectors (100:0,20:80/30:70 ,0:100).
- Eyepiece: Paired wide field eyepieces of 10X with minimum field of view 25mm.
- Revolving Nose piece: Motorized nosepiece with minimum 7 positions.
- Condenser: Achromatic Aplanatic condenser N.A of 0,9.
- Objectives: 10x/NA0.25, 20x/NA0.45, 40x/NA0.75, 63x/NA1.25 oil immersion and 100x/1.3 OIL immersion.
- Dedicated body mounted: TFT/LCD display inbuilt on microscope for convenient operation of the motorized parts through TFT/LCD display.
- Mechanical stage: Right hand mechanical stage with dual slide holder with rectangular hard coated anodized surface mechanical stage with stage size of holding minimum of two slides and X and Y movement of the specimen with right drive 135mm.
- Epi-Fluorescence attachment: Motorized Reflected Fluorescence attachment based on motorized turret system with capacity to hold minimum 8-10 filter cubes.
- Should have 8 to 10 position reflector turrets with push and click mount for mounting different filter cubes.
- 120W Mercury Halide illuminator with life of at least 2000 working hours.
- Should have motorized focus and autofocus with step size 10-15nm.
- FISH Filters: Narrow band pass and high efficiency fluorescence filters; Single filter for DAPI, Single filter for FITC, Single filter for Orange, Single filter for Red, Single filter for Aqua, Dual filter set for FITC & Orange, Triple filter set for DAPI, FITC & Orange.

B) Camera digital monochrome camera with C-mount;

- Digital CCD camera with high sensitivity and low noise.
- Chip size should be 2/3".
- High resolution of 1360 x 1024 pixels with pixel size of 6.45 x 6.45µm.
- Digitization depth-12 bit.
- Frame rate of 15 frames per second (fps) in full resolution.
- C-mount adapter lx.

C) Branded Computer compatible with system;



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- Compatible operating system based on Microsoft windows with latest antivirus software.
- 17 PROCESSOR/16 GB RAM/ 1 TB hard drive/ USB ports/CD/DVD drive and writer/optical mouse with scroller /keyboard /minimum 24" TFT colour monitor/High resolution colour graphics 1024x1280
- High resolution coloured laser printer.

D) Automated FISH, Imaging and reporting / archiving Software:

FISH Software:

- Image acquisition up to 12 colour channels with integrated microscope control for motorized microscope.
- Extended focus image generation to have a very clear Fluorescence signal against clear dark background.
- User defined automatic processing functions for image enhancement immediately after capture.
- Interactive and automatic integration time control with Automatic and interactive background correction and thresholding for each colour channel.
- Mask (exclude/include) function, Transient and permanent zoom, Presentation of individual colour, false colour, and gray levels.
- Annotation capabilities and Measurement functions. Provision to capture colour images using RGB filters for stained samples/slides like H&E, Special Stains, IHC etc.

Karyotyping software:

- Software should be AI enabled to classify and assign chromosomes automatically.
- Interactive/automated Karyotyping of Human species.
- Unlimited un-do and log operations to overcome human errors with time and date recording for each processing step.
- Interactive and automated Real time background correction and Chromosome separation. Keyboard shortcut keys for several functions like Chromosome separation (in case of overlapping chromosomes), image enhancement, Background correction, contrast enhancement etc. Interactive and automatic Classification based on built-in classifiers for G-banding, Q-banding and R-banding.
- Ideograms according to ISCN standard for 400, 550, and 850 bands.
- Additional captures to encompass all chromosomes of widely spread metaphases in one karyotype.
- Upto 26 images can be incorporated into single image to have one complete Karyogram in case of polyploidy.

Reporting / Archiving Software:

Dedicated software for Report generation, analysis, archiving and classifying with Institute logo and other related images. Scheduled backup and notification for data which is not getting saved. Dedicated software for Reporting, Case data searching and sorting and Editing. Security check to disable modification of data by unauthorized user. User Defined report generation with graphic interface. Provision in software to extract statistical information of cases.

E) Essential accessories to be included:

1) Hybridization chamber:

- Capable to perform auto-denaturation and hybridization steps for FISH procedure.

पाथोलॉजी विभाग
Professor & Head
उप-निदेशक-विज्ञान विभाग
Pathology
सर्वेभद्राणि कुर्यात्



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- Capacity to process minimum 12 slides at one go.
 - Capable to store at least 30 programs with multiple programming options.
 - Temperature should be adjustable from ambient to 100°C with accuracy of $\pm 1^\circ\text{C}$ for 0-99 hours
 - Heating time from 37°C to 95°C should be achievable in 2-3 minutes. Cooling time: 95°C to 45°C should be achievable within 4-5 minutes.
 - Display of temperature and time.
 - Operating humidity from 30% to 80%. Should operate at 240V AC50-60Hz.
- 2) 45 mm blue filter.
 - 3) Vinyl dust cover.
 - 4) Allen Hexagonal key.
 - 5) Immersion oil-2 vials.
 - 6) 12v100W halogen bulb (5nos). Price to be frozen for next 7 years.
 - 7) 100W metal halide (2nos). Price to be frozen for next 7 years.
 - 8) Online UPS with at least one hour back up.

F) Warranty and AMC:

Five Two year comprehensive warranty with spares and on-site maintenance followed by five year AMC for both FISH Station and Hybridization Chamber.

Signature

vetted

BDR. DOSTAR

3/8/20

Professor & Head

उत्तकविकृतिविज्ञान विभाग

Dept. of Histopathology

स्नातकोत्तर चिकित्सा शिक्षा एवं

आयुर्विज्ञान संस्थान, जयपुर

राजस्थान, भारत

Signature

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