

Birbal Sahni Institute of Palaeosciences

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No. III/S&P/BSIP/Dr.G.S./Dr.H.S | C-592

Date: 08.08.2016

Convener, Website Committee,
BSIP, Lucknow

Dear Sir,

This Institute being recognized Research & Development Unit under Department of Science & Technology, Govt. of India, proposes to import the following items for the research work, kindly send the proforma invoice in triplicates for the same immediately: - Import-Export Items code number may be mentioned in the Proforma Invoice, which is required by our bankers in case of advance payment, Freight., Insurance etc will be paid in India in Indian rupees:-

Description	Quantity
Stereo Zoom Microscope with digital camera and measurement software (Details at Annexure-1)	One
High Resolution Stereo Zoom Microscope with digital imaging to study amber insects and macro fossils (Details at Annexure-2)	One

Proprietary Certificate of above may be attached.

Terms & Conditions

PRICE : F.O.R. Lucknow covering Insurance from warehouse to warehouse by AIR / SEA FREIGHT / REGISTERED AIR MAIL PARCEL POST having validity not less than 120 days.

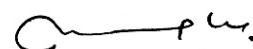
DELIVERY : Delivery date must be specifically mentioned in the Proforma Invoice.

PROFORMA : It should please be sent in triplicate so as to reach the undersigned on or

INVOICE : before **08.09.2016**

STATUTORY: Indian Foreign Exchange control Rules and Regulations do not permit inclusion in **OBLIGATION** the F.O.R. value, the commission, discount, or like rebate allowed by Foreign Suppliers / Manufacturers payable to their Indian Agents. Such Commission / Discount etc., if any, should please be specified separately in your proforma invoice to enable us to remit the same in Indian Rupees to your Indian Agents, whose complete name and address must be mentioned.

Yours sincerely,



(Dr.R.S. Singh)
Scientist 'G'

with Additional duties of Registrar

Technical Specifications for Stereo zoom Microscope with digital camera and measurement software.

Optics	Entire optics should be fully Apo-chromatic
Zoom	8:1, with apochromatic zoom optics, zoom should be
Magnification	10x to 80x with 1.0x objective & 10x eyepiece
Eyepiece	10x with FOV 23, with two Reticules- 5 mm/0,1 and crosshair.
Objectives	0.63x, 1x, 1.6x, 2x Apochromatic
Phototube	Phototube with built-in double iris diaphragm for adjustment of depth of field, should have camera port for future upgradation.
Resolution	300 lp/mm with 10x eyepiece and 1x objective
Depth of Field	70micrometer at 80x with 10x eyepiece and 1x objective
Illumination	LED light illumination with at least 50000 hours of working life for bright and uniform illumination, should have 2 fibre optic gooseneck for spot illumination, gooseneck should be longer than 450 mm with focussing lens, light source should fix with stand.
Stand	Universal boom Stand with anti shock feet, vertical arm should be more than 450 mm and horizontal arm should be 260-300 mm, with mountable focus arm should have focus travel range of 50 mm or more, Stand should be grease-free run.
Camera	Dedicated Digital microscopic colour camera with 10 megapixels (3648x2736), speed – 30 fps at 1920x1080, supported operating systems Windows7 or latest, 0.5x C-mount
Software	Software should be capable in measurements on individual features including size, shape, position, orientation, intensity. Should be able to measure parameters such as length, area, perimeter, diameter and angles. Measurement types include depicting the vector distance between points, determining angle, width and height and calculating areas and mean intensity. Analysis tools including statistics, histograms and pie charts. All data and images can be exported to user defined reports in Excel
Computer	Branded computer system with i5 or better processor, 4 GB RAM, 500 GB Hard drive, 21" screen with branded UPS should be supplied along with microscope.

- Complete computer configuration and compatible operating system **should be mentioned** in the quote
- **Installation and Training:** Should be done by the trained service engineer and should also provide on-site training to our operator
- Send a proprietary certificate, if this is a proprietary item of your company/principal
- Include an authorization from the principals for the agent/representatives
- All the above mentioned components viz., Microscope, Stand, dust cover, camera and software etc. should be from the single manufacturer – **NO hybrid** components are allowed in order to achieve maximum efficiency and reproducibility
- Send complete details of the product – Quote may not be accepted if the complete details are not provided

Annexure-2

TECHNICAL SPECIFICATION FOR HIGH RESOLUTION STEREO ZOOM MICROSCOPE WITH DIGITAL IMAGING TO STUDY AMBER INSECTS AND MACRO FOSSILS.

Sl. No.	Parameters	Features
1	Optics	Optics should be fully apochromatic with antifungal coating. One channel with maximum resolution and another channel with Max. Depth of field, to see images with the highest resolution and the highest DOF at same time.
1	Stereo zoom ratio	The zoom ratio should be 20:1 or more with motorized and encoded zoom.
2	Magnification	Magnification should be continuous from 8 x to 160x motorized with combination of 1x objective and 10x eyepiece and up to 256x with 1.6 x objective and 10x eyepiece
	Microscope control	Controlling of all motorized functions like zoom, iris diaphragm etc. should be via software and external touch button control unit.
3	Working distance	Working distance should be greater than 60 mm or more with 1x objective and 30 mm or more with 1.6 x objective
4	Resolution	Resolution should be greater than 525 lp/mm with 1 x objective and 10x eyepiece.
5	Iris diaphragm	Built-in Iris diaphragm should be encoded and motorized so that depth of field can be increased at each specific magnification without a reduction in field size.
6	Eye piece	Widfield eyepiece pair 10x with 23 mm field of view.
7	Objectives	Fully apochromatic 1x with 0.175 N.A. and 1.6x with 0.28 N.A.
8	AX - carrier	AX- carrier for parallax free imaging of samples.
9	Trinocular tube	Trinocular tube with beam splitter 50% eyepiece and 50% camera.
10	Stand and Light illumination system	i) Transmitted light stand with Rottermann Contrast, brightfield and darkfield with Integrated Halogen illumination 12V/20W. Transmitted light intensity, shutter and color temperature should be controlled through software and external control unit. Day light and BG filters are required.

		<p>ii) Two External 150-watt halogen cold light source, one with ring light and another with dual fiber optic goose neck. Ring light should be compatible with both objectives. Goose neck should be 550 mm or longer with focusing lenses and should be fitted with column. Yellow and day-light filters are required for external light sources. Minimum 4 nos spare halogen bulbs should be quoted.</p> <p>Focus drive should be Motorized and Column height should be 400mm or more.</p>
11	Digital camera	<p>i) Digital color camera with minimum 5 megapixels with pixel size of 3.4 x 3.4 μm or bigger.</p> <p>ii) A/D converter should be 14 bit or more</p> <p>iii) Dynamic range should be > 900:1 dB</p> <p>iv) At least 9 fps speed at full frame 2560 x 1920 and 18 fps with progressive scan.</p> <p>v) Camera should have UV & IR protective colour filter</p> <p>vii) Shading correction should be applicable to live and captured images.</p>
12	Power Supply	Power supply should be 220 \pm 20 volts, 50-60Hz, single phase AC supply.
13	Computer system	Suitable branded computer with licensed operating system (window 7 or latest), with 24" or bigger screen, i5 or better processor, 4 gb ram, 500 gb hard drive, Nvidia 1 gb graphic card along with UPS. Branded color laser printer for processing, documentation for report generation.
14	Software	<p>Software should be capable in measurements on individual features including size, shape, position, orientation, intensity. Should able to measure parameters such as length, area, perimeter, diameter and angles. Software should able to create automated extended depth of focus image.</p> <p>It should be capable in generating automatic Extended depth of field images by automatically adjusting step size and the number of images to microscope magnification, aperture and camera resolution. It should also provides editing capabilities to further enhance the final extended depth of field image. Software should be with life time license and should have external dongle or similar key.</p>
15	Integration	Complete hardware, software and Digital Camera should be from single manufacturer only and no hybrid system components are allowed in order to achieve maximum Reproducibility & Repeatability.