

Government of India  
Bhabha Atomic Research Centre

**Dr MadhumitaGoswami**  
Glass & Advanced Materials Division,  
BARC, Trombay, Mumbai-400085

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**Ref. –G&AMD/MG/2021/18522**  
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**Date:07/12/2021**

Sub: Minor Fabrication-Invitation of quotation, for job as per details attached.

Dear Sir,

For & On behalf of the President of India, quotations are invited by the undersigned for following fabrication work to be carried out at G&AMD, GCTL buildg, Trombay, Mumbai. The scope of work is detailed below.

Nature / Description of Work
Upgradation of existing Olympus optical microscope(60M,model BX60MF5)) with suitable camera, optical adaptor and software for image analysis as per specifications attached in Annexure –S. The item has to be delivered at GCTL buildg. BARC, Trombay, Mumbai-400085.

The quotation in sealed cover should super scribe nature of work and should be addressed to following person and should reach by India Post (speed) only, on or before the date and time mentioned.

<b>Dr Madhumita Goswami</b> <b>G&amp;AMD, Mod Lab, BARC</b> Mumbai-400085	On or before: <b>December 27<sup>th</sup></b> , 2021, at 15.30hrs.
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**Instructions to the tenderer :**

- The tenderer should write in words as well as figures, the rate(s) quoted by him. All corrections must be attested by the dated initials of the tenderer.
- The tenderer may note that in case the work is awarded to him, he has to produce police verification certificate for the employees to be deputed for the work inside the BARC, Trombay, Mumbai.

- Income-Tax and surcharge on income-tax as applicable shall be deducted from the bill. The payment for the work done shall be paid by our Accounts Division only on satisfactory completion of the work within one month.
- The time allowed for completion of the job is within 12 weeks. The same shall be reckoned from the date of issue of the work order.
- The acceptance of the tender rests upon the undersigned with a right to reject the tender without assigning any reason.

(Dr Madhumita Goswami)

Head, G&GCS,GAMD,

CC:

AAO (Works),

Accounts Division

BARC

## Annexure S Specifications

### 1. 5.0MPixel 1/2.5” CMOS Camera for Microscope

Sensor	:CMOS
Resolution	:2592 x 1944
Mpixels	:5.0
Max.frame rate[Hz]	:5.8
Shutter type	:Rolling / Global Resel
Sensor size	:1/2.5”
Pixel size [ μm ]	:2.2 / 2.2
Exposure time	:10 ps — 1 s
ADC resolution / Output	:20 bit —* 10 / 8 bit
SNR	:> 38 dB
DR [ normal / HDR ]	:> 70 dB
Trigger [ HW / SW ]	:Yes / Yes
Pipelined in continuous Triggered mode/	:Yes / No [ Reset only ]
<b>Adapter:</b>	<b>:0.5X Opto mechanical adapter suitable for above camera and microscope</b>

### 2. Analysis Software

Sr No.	Parameter	Details
1	<b>Grain size analysis</b>	<p><b>Intercept Method (Manual / Automatic mode)</b></p> <p>a) Facility to select number and orientation of linear test lines</p> <p>b) Facility to select concentric test circles</p> <p>c) Facility for Angled (45 deg and 135 deg) test line for anisotropic and non-equiaxed grains analysis</p> <p>e) Facility to find intercept length and ASTM Grain No. for individual grains</p> <p><b>Planemetric Method</b></p> <p>a) Facility for selection of region of interest for planimetric method</p> <p>b) Grain size distribution with graphical plot and identification of largest grain available</p> <p>c) Auto grain boundary tracing, enhancing and grain cleaning feature for automatic analysis within time 10 second</p>
2	Phase Analysis	<p>a) Automatic thresholding of the image</p> <p>b) Multiple no of phase (upto 12) can be determined simultaneously</p> <p>c) Pick &amp; place of gray value for smart selection of a phase of interest from rest of the matrix</p> <p>d) Histogram, Color coding for independent phases</p> <p>e) Facility for selection of region of interest</p>
3	Porosity Measurement	<p>:Separate identification of Intergranular and Intragranular pores, pore size measurement and estimation of area percentage of the same.</p> <p>Distribution of pores as per size/area Porosity can be classified depending upon area, size, major axis, minor axis etc.</p>
4.	Report generation	:in MS-Excel format

Note: Installation & commissioning, demonstration and training onsite. A manual in English hard and soft copy will be provided along with the system

### **Terms and Conditions:**

1. The quotation typed on your Letter Head, the letter should contain sales tax registration No. (will be rejected if the quotation is in a computerised printed letter head), should be sent in a sealed envelope. The reference No. and due date and “Quotation: not to be opened before due date” should be clearly super scribed on top of this sealed envelope. It should reach the undersigned within the due date given above by speed post or registered post only. The quotation reaching after the due date will not be considered. Also furnish TAN No., PAN No.
2. It is to be noted that persons engaged in fabrication work at BARC complex would be required to obtain police clearance certificates for issue of requisite identity cards. The responsibility of all the working personnel lies completely with the Fabricator/ Contractor while they are working at G&AMD/BARC.
3. Time of completion of job: To be indicated by the Fabricator.
4. Indicate taxes, if extra, shall be quoted separately.
5. BARC is exempted from payment of octroi and excise duty. The indenter shall make available the exemption certificates well before the delivery date stipulated in the work order. It shall, however, be the responsibility of the contractor also to ensure that they despatch the goods only after getting exemption certificates from the indenter.
6. Income tax at 2% and surcharge on IT as applicable will be deducted from your bill.
7. Guarantee Certificate: Equipment fabricated should be guaranteed, for materials and workmanship, for a period of one year from the date of completion of the job.
8. Indicate delivery terms.
9. BILL
  - a. Bill and cash receipts for payment may be forwarded to the undersigned indicating our contract No. for record. Bills should contain the PAN, VAT No. and service Tax Registration number.
  - b. Name & address of the Party’s Bank, Account Number, IFS Code (which appears on cheque leaf) should also be quoted on the Bill.
  - c. Bill for spares replaced during the service contract period may please be forwarded to the Accounts Officer, BARC, Mumbai – 400 085, duly certified by the user department that the spares have been actually replaced and cost is reasonable.
10. COMPLETION REPORT: A completion report may please be forwarded to this office with a copy to the user department after completion of the last servicing but well before the expiry of the contract, certifying that the equipment has been serviced as per the terms and conditions of the contract and also with your proposal for extension of the contract, if any, indicating our contract number and date for the consideration.
11. Please ensure that our service contract number is quoted in all correspondence and bill etc.
12. Kindly acknowledge receipt and confirm that servicing/repair will be carried out in terms of the contract.

Please note that the following clauses will form the part of this contract.

#### A. Confidentiality

Generally, no party shall disclose any information to any third party, concerning the matters under this contract. In particular, any information defined as “Proprietary” in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractor, consultants, advisers or the employees engaged by a party with equal force.

#### B. “Restricted information” categories under Section 18 of the Atomic Energy Act, 1962 and “Official secrets” under Section 5 of the Official Secrets Act, 1923

Any contravention of the above mentioned provisions by any contractor, sub-contractor, consultant advisor or the employees of a contractor will invite penal consequence under the aforesaid legislation.

#### C. Prohibition against use of BARC’s name without permission for publicity purpose

The contractor or sub-contractor, consultant advisor or the employees engaged by the contractor shall not use BARC’s name for any publicity purpose through any public media like press, radio, T.V. or internet without the prior written approval of BARC

For any enquiry please contact,

Dr Madhumita Goswami  
Indenting Officer  
Phone No. 25595660  
Email: mgoswami@barc.gov.in