

**INDIAN INSTITUTE OF TECHNOLOGY
(INDIAN SCHOOL OF MINES), DHANBAD**



**Notice Inviting Tender (NIT) in Two-Bid System
for**

**Supply and Installation of Reflectance and Fluorescence
measurement of coal (macerals) with accessories along with data
acquisition, retrieval and analysis system and power backup**

Tender No.: IIT(ISM)/AGL/500513/ 2017-18

Date: 04.06.2018

Bid Submission deadline: 11.07.2018, 1:00 P.M.

Tender Fee: Rs. 5000/- (Rs. Five Thousand only)

REGISTRAR

Indian Institute of Technology (Indian School of Mines), Dhanbad

P.O. – Indian School of Mines (I.S.M.)

DHANBAD –826004 (INDIA)

www.iitism.ac.in

GSTIN : 20AAAAI0686D1ZA

Notice Inviting Tender (NIT) in Two-Bid System

For

SUPPLY AND INSTALLATION OF REFLECTANCE AND FLUORESCENCE MEASUREMENT OF COAL (MACERALS) WITH ACCESSORIES ALONG WITH DATA ACQUISITION, RETRIEVAL AND ANALYSIS SYSTEM AND POWER BACKUP

Tender No.: IIT(ISM) /AGL/ 500513 / 2017-18

दिनांक/ Date: 04.06.2018

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CHAPTER 1

Instructions to Bidders

IIT (ISM), Dhanbad was formerly known as Indian School of Mines (ISM) and was a Deemed University before it got converted into an Institute of National Importance under the Institutes of Technology (Amendment) Act, 2016 passed by the Parliament of India and got the assent of President of India. The Indian School of Mines, now IIT (ISM), Dhanbad, was formally opened on 9th December 1926, by Lord Irwin, the then Viceroy of India to address the need for trained manpower related to mining activities in the country with disciplines of Mining and Applied Geology. In 1967, it was granted the status of a deemed to be university under Section 3 of UGC Act, 1956 and it was renamed as Indian Institute of Technology (Indian School of Mines) in 2016. It started as an institution to impart mining education, and today, has grown into a technical institution with various academic departments. IIT(ISM) is located in the mineral-rich region of India, in the city of Dhanbad in the state of Jharkhand. It is the third oldest institute [after IIT Roorkee and IIT (BHU) Varanasi] which got converted into an IIT.

IIT (ISM), Dhanbad intends to procure the equipment “Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup” to enrich its teaching and research facility at Dhanbad.

Reputed manufactures or authorized distributors are invited to submit their bid for “Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup” for IIT (ISM), Dhanbad as per this tender document in a Two-Bid System: - (a) Techno-Commercial (also termed as technical bid) bid (Part-2) consisting of all technical details of the item along with commercial terms and conditions, Tender Fee and EMD and (b) Price bid (Part-1) indicating price for their items mentioned in the technical bid. All instructions and terms and conditions must be followed, failing which bid(s) will liable to be rejected.

INSTRUCTIONS

1. Offer should be submitted under TWO-BID system in two separate sealed covers i.e. “Techno-commercial bid” and “Price bid”.
2. Tender Number and tender submission deadline must be clearly mentioned on the top of the envelope.
3. a) In a tender, either the Indian agent on behalf of the principle/ OEM and the Principle/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.

- b) If an agent submit bid on behalf of the principle/ OEM, the same agent shall not submit a bid on behalf of another principle/ OEM in the same tender for the same item/product.
4. Bidder(s) must submit PAN given by Income Tax authorities, TIN and copy of PAN / TIN with the bid.
 5. The offer must be submitted in **Two-Bid**. Tender should be dropped in the tender box kept in the office of **Deputy Registrar (Purchase & Stores), IIT (ISM), Dhanbad– 826004 (Jharkhand, India)** only. Bids may be submitted by Speed Post / Courier in sealed cover only, but IIT(ISM), Dhanbad will not accept such bid if delivered/submitted to the office of the Deputy Registrar (Purchase & Stores section), IIT (ISM), Dhanbad after the submission deadline and such bids will be treated as Late bids / non-responsive bids. It will be the sole responsibility of the bidders that their bid should be submitted/ delivered as per bid submission deadline. IIT (ISM), Dhanbad will not be responsible for any delay or transit loss or late delivery of bids to the office of the Deputy Registrar. No Tender is to be handed over to any staff of IIT (ISM), Dhanbad personally. All bids / correspondences should be sent to the following address only: “Dy. Registrar (P&S), IIT (ISM), Dhanbad, P.O. – Indian School of Mines (ISM), DHANBAD – 826004 (Jharkhand, India)”. Bids sent through Email/Fax or submitted in unsealed cover(s) will not be accepted and such bids will be treated as non-responsive bids.
 6. Bid(s) must be sent sufficiently in advance so that it reaches the institute on or before the submission deadline. Bid(s) received after the submission deadline will not be considered.
 7. Bid document(s) and all enclosures must contain the signature and seal of the authorised representative of the bidder.
 8. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.
 9. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.
 10. The Bank/RTGS detail on the letter-head of the bidder(s) must be submitted along with the tenders (part-1). A copy of the cancelled cheque should also be attached.

11. Name and PAN/Voter Card No. /Aadhar No. of the authorized signatory of the bidder(s) must be mentioned in the Form 7.2.
12. A copy of PAN/Voter Card/Aadhar Card of the authorized signatory of the bidder(s) must be attached with the Form 7.2

CHAPTER 2

Terms and Conditions

The offer must comprise of the following, failing which it will be treated as non-responsive bid hence will be rejected:

1. The bids under Two-Bid System will consist of two parts as per following details:- **a) Techno-Commercial bid (Part 2)** consisting of all technical details along with Commercial terms and conditions and EMD (Earnest Money Deposit) and Tender Cost, in the form of two separate Demand Drafts issued from any Nationalized / Scheduled commercial bank in favour of “Registrar, IIT (ISM), Dhanbad” and payable at “Dhanbad (Jharkhand, India)”, and **b) Price bid (Part 1)** indicating price for the items / services mentioned in technical bid (part-1). In stage-one, only the Techno-Commercial (Part 2) shall be opened and evaluated. In stage-two, the Price bids (Part 2) of only the technically qualified and acceptable offers will be opened, for further evaluation.

2. Sealing and Marking of Bids:
 - a) The Techno-Commercial bid (Part 2) must be sealed in a separate envelope (ENVELOPE-ONE) with Tender Cost and EMD in the form of two separate Demand Drafts, duly super-scribed as “**Techno-Commercial Bid (Part 2), Tender No.: IIT(ISM)/AGL/ 500513 / 2017-18, Submission Deadline: 11.07.2018**” as per following details: -

Tender Cost: Rs. 5000/- (Rs. Five Thousand only),

EMD: Rs. 300,000/- (Rs. Three Lakh only).
 - b) The Price bid (Part 2) should be sealed in separate envelopes (ENVELOPE-TWO), duly super-scribed as “**Price Bid (Part 2), Tender No.: IIT(ISM)/AGL/ 500513 / 2017-18, Submission Deadline: 11.07.2018**”.
 - c) The above TWO separate sealed envelopes are to be put in a bigger envelope (ENVELOPE-THREE), which should also be sealed.
 - d) Each of the above THREE envelopes MUST be super-scribed with “**Bid for Supply and Installation of Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup against Tender No.: IIT(ISM)/AGL/500513/2017-18, Dated: 04.06.2018, Submission Deadline: 11.07.2018**”.

3. The bids must be neatly typed/computer printed. Hand written offer will be rejected. Bids must carry the numbers of GSTIN/ sales tax / VAT / TIN / PAN / Service Tax Registration No. Bids must be in sealed envelope.

4. All relevant technical specifications/details of offered items, drawings, printed technical leaflets, and commercial details which are necessary to ensure that offer is complete in all respects should be attached with the technical bid documents.
5. A 'Compliance Statement' along with a certificate and duly signed that the tenderer satisfies the technical requirements given as per Form 7.5. The said statement should be in a tabular form with the columns: sl. no., (2) technical requirement as per NIT; (3) what is offered by the tenderer; and (4) status of compliance: Complied/Not complied).
6. IIT(ISM) does not bind itself to offer any explanation to those bidders whose Technical Bids have not been found acceptable by the Evaluation Committee of the Institute.
7. Following documents have to be furnished by the bidders with the technical bids (part-1):
 - (a) Self attested copies of credentials in support of capability to undertake the supply/work.
 - (b) Technical literature/catalogue with the detail specification of the material
 - (c) Satisfactory performance certificate from their customers for same/similar supply/service must be enclosed alongwith the technical bid.
 - (d) A copy of this tender document must be signed and sealed on all pages by the bidder(s) accepting the instructions and terms & conditions of the NIT and must be attached with the bid.
8. Price should be quoted on FOR, IIT(ISM) Dhanbad basis (in case of indigenous supply). In case of foreign supply, the price basis should be FOR IIT(ISM) Dhanbad/CIP Kolkata basis. The packing, forwarding, freight and transit insurance charges, if any, must be included in the price and should not be claimed separately. Duties & taxes, if applicable, are to be shown separately clarifying whether those are extra or included in the price. Educational discounts, if any, should be mentioned clearly. Justification of the price quoted must be provided with the Price Bid. For this, Price List of the OEM and purchase order of govt. organizations / IITs/ NITs/ CSIR Labs / ISRO labs etc. should be attached. Price bids of only technically qualified tenderers shall be opened in on a pre-notified date and time. Decision of IIT (ISM), Dhanbad in this regard will be final and binding by all the bidders.
9. IIT(ISM), Dhanbad is entitled for Custom Duty Exemption under Govt. of India notifications and is registered with DSIR, Govt. of India for this purpose. This may be taken into consideration while quoting minimum possible rate. Exemption Certificates can be issued in favour of manufacturers only, if it is mentioned in the bid. It will not be issued to any Indian Agent/dealer or distributor at any circumstances. IIT(ISM) will provide only custom duty exemption certificate for availing concessional custom duty. IIT(ISM) will not pay any extra custom duty other than duty exemption certificate.
10. IIT (ISM), Dhanbad does not issue form 'C' or 'D' for concessional Sales tax/VAT. Hence, full rate of sales tax as applicable to educational institutions against the form of certificate should be indicated.
11. Tender Fee:- All bidder(s)s must have to submit a Demand Draft of required amount in the form of Demand Draft issued from any Nationalized/ Scheduled commercial Bank in favour of "Registrar, IIT (ISM), Dhanbad" payable at Dhanbad with the bid (part-2). Bid received without Tender Fee in part-2

- (techno-commercial bid) will be rejected. Tender Fee is non-refundable. It must not be clubbed with Bid Security or EMD.
12. Bid Security or Earnest Money Deposit (EMD):- Required Amount for EMD must be submitted in the form of Demand Draft issued from any Nationalized/Scheduled commercial Bank in favour of Registrar, IIT (ISM), Dhanbad payable at Dhanbad with the bid (part-2). Bid received without EMD in part-2 (techno-commercial bid) will be rejected. It must not be clubbed with Tender Fee. No interest will be payable by IIT (ISM), Dhanbad on the Earnest Money Deposit. The earnest money of all the unsuccessful bidder(s) will be returned to the respective bidder(s) through bank / RTGS transfer without any interest within 60 (sixty) days only after placing the order / awarding the contract. The Earnest Money of successful bidder(s) shall be returned on receipt of Performance Security (Performance Bank Guarantee / PBG) as mentioned in this tender document. If the successful bidder(s) fails to furnish the performance security or fails to deliver/provide the item/installation/service as per the order's terms and conditions within stipulated period, the earnest money shall be liable to be forfeited. An undertaking to this is to be submitted.
 13. Tender Fee and EMD must be in the two separate Demand Drafts.
 14. **Performance Security or Performance Bank Guarantee (PBG):-** The successful bidder(s), on whom order will be placed, has to submit a performance security of 10% of the total order value at the earliest as per PO terms before release of any payment. Performance security has to be submitted in the form of Bank Guarantee/Demand Draft/FDR from any Nationalized/Scheduled commercial Bank in favour of the Registrar, IIT (ISM), Dhanbad. Performance security should remain valid for a period of two months beyond the date of completion of all contractual obligations of the successful bidder(s). No interest will be payable by IIT (ISM) Dhanbad on the Performance Security deposited. In case the contractor fails to provide satisfactory service, the Performance Security submitted by the bidder(s) is liable to be forfeited. An undertaking to this is to be submitted.
 15. **Validity Period:** - The validity period of the tender should be clearly specified. It must be at least for **240(Two Hundred Forty) days** from opening of bids.
 16. **Warranty:** All the active components must carry 3 years comprehensive warranty
 17. Comprehensive Annual maintenance contract (AMC): The cost of 'annual maintenance contract (AMC)' and "comprehensive maintenance contract (CMC)" should be provided separately for extension of warranty for additional years (which is beyond the normal warranty period mentioned earlier) on yearly basis as an option with the price bid. Offer including terms & conditions should be quoted on per year basis to enable purchaser make AMC for any period from 01 to 05 years, if required.
 18. Delivery Period and Liquidated Damage: As time is of the essence for this procurement, hence the ordered materials/work complete in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week or part thereof

for the delayed period subject to maximum of 5% of the total basic value of the order shall be deducted from the invoice of the supplier. Earliest/ expected delivery period should be clearly indicated. Packing should be suitable for 'Air freight'.

19. Inspection: Inspection shall be carried out at IIT (ISM), Dhanbad after arrival of the materials and decision of the Institute in this regard shall be final.
20. Rejection and Replacement: Rejection, if any, shall be notified to the supplier within 30 days of receipt and inspection of the material/workmanship. Rejected materials/work is to be removed by the supplier at his own risk and cost from IIT (ISM) Campus within 14 days of intimation of rejection. Defective Supplies are required to be replaced within 15 days of the removal of the rejected materials/work.
21. Risk Purchase: IIT (ISM) shall be at liberty to realize from the supplier the differential amount, if any, which it shall have to incur on purchase of the material/work at higher price(s) from elsewhere in the market, if the supplier, due to their fault, fails to supply the ordered quality and quantity of the material/work within the stipulated time.
22. Conditional offer will not be accepted.
23. Payment: In case of indigenous item i.e. inside India, payment may be released through RTGS / online payment mode against complete execution of the purchase order (PO) and submission of all the required documents as per the order within 30 days after satisfactory supply, inspection, installation/commissioning & acceptance and on submission of pre-receipted tax invoice, delivery challan, warranty certificate and installation report in triplicate and Performance Bank Guarantee. In case of foreign supply, i.e. outside India i.e., payment may be released through Letter of Credit as per policy of IIT (ISM), Dhanbad. The invoice should be duly certified by the Head of Deptt. of IIT (ISM), Dhanbad to which supply is made or any other IIT (ISM) official authorized for this purpose. IIT (ISM), Dhanbad does not make any advance payment. However, as a special case in foreign supply only, 90% Letter of Credit (LC) Payment term may be accepted against dispatch of required documents as per PO terms and PBG and balance 10% payment via wire transfer/RTGS will be released only after satisfactory installation report and other documents as per PO terms received from the user department from the firm.
24. Advance payment will not be released. Any bid having condition of advance payment will be treated as non-responsive bid.
25. Country of origin and port of shipment must be stated in the technical bid itself in case of foreign supply. Any change at later stage will not be accepted.
26. Name and address of Indian Agent, percentage of agency commission, if any and role of the Agent with respect to the subject supplies and a statement thereon that "Agency Commission is included in the bid.
27. Payment will be released through bank/ RTGS/Wire transfer. The payment will be released after statutory deductions and compensation of delay / liquidated damage (LD) / late delivery etc., if any.

28. Any payment will be released only after satisfactory completion of the work/installation and after submission the certified bill(s) / invoice(s).
29. All communications are to be addressed to the Registrar, IIT (ISM), Dhanbad quoting the Tender No. and Date.
30. IIT (ISM), Dhanbad reserves the right to accept or reject or cancel any or all tender notice or bid(s) or order(s) at any stage without assigning any reason thereof.
31. For any dispute, the place of jurisdiction shall be Dhanbad (Jharkhand, India) only.
32. It will be the sole responsibility of the bidder(s) that its bid should reach on or before the submission deadline to Registrar, IIT (ISM), Dhanbad.
33. **Governing Law:** The order, placed, will be the contract between the successful bidder(s) and IIT (ISM), Dhanbad and shall be governed by the LAWS of India and under the contract shall be taken by the parties only in Dhanbad (Jharkhand, India) to competent jurisdiction.
34. Bid(s) shall be submitted in official tender form / format only. If submitted in any other form / format, the same shall be rejected. No paper shall be detached from the tender. All pages must be numbered properly and there must be seal and sign of the bidder(s) on all the pages of its bid.
35. The name and address of the bidder(s) shall be clearly written in the space provided and no overwriting, correction, insertion shall be permitted in any part of the tender. The tender should be filled-in and submitted in strict accordance with the instructions laid down herein; otherwise the bid is liable to be rejected.
36. The bid is liable to be rejected if complete information is not given therein, or if the particulars and data (if any) asked for in the Schedule to the tender are not filled-in properly.
37. The successful bidder(s) will indemnify IIT (ISM), Dhanbad, in case of any damage or liability, which may arise on account of any act or omission directly/indirectly attributable to the bidder(s).
38. Dispute, if any arising out of providing the said service(s) shall be settled mutually or arbitration by sole Arbitrator to be appointed by the Registrar, IIT (ISM), Dhanbad at Dhanbad as per the provisions of the Indian arbitration and Conciliation Act, 1996 and the Rules framed there under. The award passed by the said sole Arbitrator, will be binding upon the parties. The arbitration proceedings shall be held at Dhanbad only.
39. The successful bidder(s) shall ensure that its authorized representative should be present at the time of any discussion at IIT (ISM), Dhanbad regarding the bid, for which no any kind of TA/DA/boarding/lodging will be facilitated by IIT (ISM) Dhanbad.

40. The schedules of items/services are required as per Chapter-4 of this tender. Bidder(s) must clearly indicate in its tenders, the different taxes and duties which they propose to charge mentioning clearly the present rate(s) thereof with appropriate reference. Vague offer like “duties as applicable” shall not be considered.
41. Price should be quoted at Price Bid (Part-1) (Chapter – 5 of this tender) only for the item(s)/services as mentioned at Chapter – 4 of this tender. The required item(s)/services to be delivered / provided on or before the dead line as per purchase order.
42. The bidder(s) should be registered with VAT, CST, SST, Income Tax, service tax authorities, GST etc. and to enclose the copies of the relevant certificate along with the technical bids. The agency must be authorized by appropriate government authority to deliver the items/services at the IIT (ISM) Dhanbad.
43. The successful bidder(s) will ensure that its employees/staff/personnel would strictly follow all the security instructions and rules and regulations of IIT (ISM), Dhanbad during their visit in the campus.
44. If the successful bidder(s) commits breach of any of the above or Order’s terms and conditions or is not able to deliver the item / provide the services / complete the work on time, the contract will be cancelled and security deposit shall be forfeited and a damage liability at the discretion of IIT (ISM), Dhanbad will be imposed on the bidder(s).
45. Bills / Invoices raised by the bidder(s) will be subject to applicable statutory deductions including T.D.S.
46. Necessary corrigendum(s), if required, will be issued at any stage, which must be acceptable to the bidder(s). Any corrigendum will be published on our website www.iitism.ac.in only. Bidder(s) must be in touch with our website www.iitism.ac.in for corrigendum(s). It will be sole responsibility of the bidder(s) that they will go through the corrigendum(s) published, if any, on our website www.iitism.ac.in and submit its tender accordingly.
47. Shortlisted bidder(s) may be called for presentation / demonstration / meeting at IIT (ISM), Dhanbad office with a short notice. Request from the bidder(s) to change the date and time of presentation / demonstration / meeting will not be accepted. If the bidder(s) will not attend for the same, then their bid(s) will be treated as non-responsive and hence the bid(s) will not be considered for further process.
48. Price bids will be opened for those bidder(s) who are shortlisted and declared as technically qualified bidder(s) by the Committee of the IIT (ISM), Dhanbad. In this regard, decision of IIT (ISM), Dhanbad will be final and binding to all the bidder(s).
49. Please note that no part shipment/transshipment/third party shipment is acceptable to us.
50. Submission deadline / last date & time for submission of the bids and date & time for opening of the same are given in this bid. The bids will be opened as per IIT(ISM) rules. Authorized representative of bidders having authorization letter, a govt. issued ID card and an employment ID card issued by the bidder may present during bid opening at their own discretion. In case of submission deadline / last date or bid

opening date is a holiday/declared as a holiday, then next working date will be the submission deadline / last date for submission/ opening of tender. Submission deadline or bid opening date & time will not be changed upon any request from the bidder side. However, it may be changed as per IIT(ISM) rules. In this regard, decision of the IIT (ISM), Dhanbad will be final and binding to all the bidders.

51. For the items / services, the bidders must ensure the required quality, quantity, materials, dimensions & other parameters and quote accordingly. In case items / services provided are not same as quoted/ordered, the claim for payment shall not be accepted. No payment, claims for such items / services shall be released. In this regard, decision of IIT (ISM), Dhanbad will final and binding to the bidders.
52. IIT (ISM), Dhanbad at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any stage. In case of any dispute, the decision of IIT(ISM) shall be final and binding on the bidders/tenderers.
53. IIT (ISM), Dhanbad reserves the right to accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The decision of the competent authority of IIT (ISM), Dhanbad will be final and binding to the bidder(s).
54. All the bidders, those are interested to participate in this bid, must have to submit the technical specification of their bid in MS-Word Format in a CD with the technical bid. The CD must be marked with the NIT No. and submission deadline.
55. Professional(s) to be deployed by the successful bidder(s) for the supply of the item / installation / execution of the work in order to provide the item(s) /service(s) as per order must be well qualified.

CHAPTER 3
Schedule of Requirements

<u>Description</u>	<u>Details</u>
NIT No.	IIT(ISM)/AGL/ 500513/ 2017-18
Date of Tender	04.06.2018
Bid submission deadline	11.07.2018, 1:00 P.M.
Date of opening of the bids (technical part-1)	11.07.2018, 4:00P.M.

CHAPTER 4**PRICE SCHEDULE****Price Bid****PRICE BID**

(Note: This price bid must be in a sealed cover and should be sealed separately from the techno-commercial bid cover.)

The bidder(s) shall quote the amount tendered/financial bids in the following format:

“Price Bid for **Supply and Installation, Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup** “I / We (_____) on behalf of M/s _____

_____ hereby undertake to provide **Supply and Installation Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup** as specified in this tender and our technical bid for an amount of Rs.

_____ (in words Rupees

_____) for the item as in **Chapter –5**.

The above quoted amount is inclusive of and in accordance with all the statutory liability, Service Charges, Administrative Charges, etc.” as applicable. Details of the prices quoted for the various items as per technical bid are as follows: -

Sl. No.	Full Description of Items with (HSN Code/SAC Code)	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			Total	
			GST	
			Freight (if any)	
			Installation (if any)	
	Amount should be in figure as well as word		Grand Total	

.....

Signature of the bidder(s)/authorized signatory with seal

UNDERTAKING BY THE BIDDER(S)

I have carefully gone through the various terms and conditions mentioned in the tender document of **Supply and Installation, Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup**. I agree to all the conditions and offer to supply the item at IIT (ISM), Dhanbad. I am making this offer after carefully reading the conditions and understanding the same. I have acquainted with all the tasks required to be carried out, before making this offer. I will abide by the corrigendum(s), if any, to be issued by IIT (ISM) Dhanbad on its website www.iitism.ac.in. I hereby sign this undertaking as token of our acceptance of various conditions mentioned in tender document. Justification of the price is also attached herewith.

Place: _____

Dated: _____

Name & Signature of the bidder(s):

Address: _____

CHAPTER 5
Contract Form

With reference to the tender reference no. **IIT(ISM) /AGL/ 500513 / 2017-18**, Dated: 04.06.2018 of IIT(ISM), Dhanbad for Supply and Installation, Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup, we (bidder(s)'s name)
_____ accept all the instructions and terms and conditions of the tender and accordingly hereby submit our quotation no.
_____ dated _____.

ALL TERMS AND CONDITIONS OF THE N.I.T. ARE ACCEPTED

1	Name and address of the bidder	
2	Telecom nos. of the bidder i.e. phone fax, & email id.	
3	Signature, name & designation of the person signing on behalf of the bidder & his/her office seal	
4.	Name & designation of the contact person & his phone/mobile no./e-mail ID	

We hereby declare that all statements/details made in this tender are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or we do not satisfy any of the stated criteria, our offer is liable to be cancelled automatically and IIT (ISM), Dhanbad may take an action against this firm for such false information including legal action.

Signature:

Name:

Designation:

Bidder(s)'s Name:

Seal:

CHAPTER 6

Form6.1- Checklist

(to be submitted with technical bid part-2)

1. Duly sealed and signed (on all pages) of the tender document.	
2. Demand draft is attached as Tender Fee	
3. Demand draft is attached as EMD.	
4. Form No. 6.4 (Techno-Commercial bid, Part-1) is attached	
5. Form No. 6.2 and 6.3 are attached with Techno-commercial bid (part-1)	
6. Details of PAN, TIN, Service Tax Registration No., GST No. etc. is attached	
7. Bank account details is attached	

8. Complete contact details (Name, Postal address, E-mail address, phone no. mobile no.) is provided	
9. Complete technical details attached	
10. The Techno-Commercial bid (Part 2) is sealed in a separate envelope (ENVELOPE-ONE) with EMD and Tender Fee in the form Demand Draft and duly super-scribed as "Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup"	
11. The Price bid (Part 1) is sealed in separate envelopes (ENVELOPE-TWO) and duly super-scribed as "Price Bid (Part 1) – Bid for Supply and Installation, Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup"	
12. A copy of PAN/Voter Card/Aadhar Card including ID card of the bidder (firm) of the authorized signatory of the bidder(s) is attached with the Form 7.1	

Form No.: 6.2

To,

The Registrar,

Indian Institute of Technology (Indian School of Mines), Dhanbad,

P.O. – I.S.M.

DHANBAD– 826004.

Ref.: Your Notice Inviting Tender No. IIT-ISM / AGL / 500513 / 2017-18, Dated: 04.06.2018**Sub:** Technical bid relating to **Supply and Installation, Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup**

Sir/ Madam,

1. I/We have gone through all Chapters of the tender document such as Instructions and Terms and conditions, minimum eligibility criteria, schedule of requirements, Specifications and allied technical details etc. as enlisted by you in your Notice Inviting Tender for the subject under reference.
2. I/We, hereby confirm that we have understood all the above and confirm my/our commitment to abide by them.
3. I/We also confirm my/our commitment to provide the services as enlisted in your Notice Inviting Tender under reference.

Seal and Signature of authorized signatory of the bidder(s) with date→

Documents	Yes/No	Document No. (If submitted a copy of the same)
PAN Card/Voter ID/Aadhaar Card		
Official ID Card		
Other Documents (specify below)		

(A copy of PAN/Voter Card/Aadhar Card and official ID card of the authorized signatory of the bidder(s) must be attached with this letter.)

Form No.:6.3

(to be submitted with technical bid part-2)

1. Tender Fee (Non-refundable): DD NO. _____ Date: _____ Amount: Rs. Five Thousand only, Issued by bank and branch _____
2. Earnest Money Deposit: DD NO. _____ Date: _____ Amount: Rs. Three Lakh only, Issued by bank and branch _____
3. Validity of Quotation: days from the date submission deadline (minimum 240 days from the submission deadline).....
4. Performance Security or PBG: Will Be Submitted with the proforma invoice or invoice, if Purchase Order placed by I.I.T. (I.S.M.), Dhanbad
5. Payment Terms: Payment after supply, satisfactory installation and submission of all required documents as per Purchase Order after statutory deductions and penalty (liquidity damage), if any as decided by I.I.T. (I.S.M.), Dhanbad.

ALL THE ABOVE MENTIONED TERMS & CONDITIONS ARE ACCEPTED BY US AND PROFORMA IS SUBMITTED FOR CONSIDERATION.

Signature & Seal of the Bidder(s)

Form No.: 6.4**TECHNO-COMMERCIAL BID (Part-2)****TECHNICAL BID**

1. Name of the Bidder(s).....
2. Name of the authorized person (who signs on the tender document on behalf of bidder(s)) with PAN/Voter Card No./Aadhar No.
3. Address of the Bidder(s)....., Website
4. Phone No. (Mobile)..... Fax..... E-mail

Details of the item and its specification:

Sl. No	Particulars	Description

Name of the authorized signatory:

Name of the Bidder(s):

Contact No.:

Signature & Seal of the Bidder(s)

Chapter 7

Specifications for One “Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup”.

1. **Specifications Sheet:** The minimum specifications and quantity for “*Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup*” is given in the **Table 1**.
2. **Reflectance, Transmittance, and Fluorescence Microscope System:** The specifications for the complete “*Reflectance and Fluorescence measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup*” is listed in the Table 1 (given below). *A certificate is required from the original equipment manufacturer (OEM) that their equipment and accessories meet all minimum specifications as given in the Table 1.*
3. **Accessories:** All necessary accessories and software’s, required for the smooth operation of the Reflectance, Transmittance, and Fluorescence measurement of coal (macerals) in the laboratory, should be delivered by the supplier along with the data acquisition, retrieval and analysis system and power backup. All accessories, and components including cables, batteries etc. should be Original Equipment Manufacturer (OEM) make/supplied directly by OEM and certified by OEM for smooth functioning. *List of all accessories, with part(s) number(s), to be supplied by the OEM is required.*
4. **Specification sheet(s), product brochure(s), and Manual(s):** Printed copy of all the specification sheets, product brochures/manuals related to Reflectance, Transmittance, and Fluorescence measurement should be supplied along with the quote. Soft copy may be provided in a CD/DVD/USB pendrive.
5. **Warranty:** Total cost of supply must include 3 (three) year onsite warranty including technical support for all equipment, accessories and softwares (within 5 business day support). The cost of repair/replacement/shipping, if any, should be borne by the supplier during the warranty period. *A three-year warranty certificate including technical support is required from the OEM. In case the local representative of the OEM/Principal Company changes or withdraws; a letter of assurance by the OEM/Principal Company is required stating that they will directly cover the warranty and service the equipment as and when required as per the terms and conditions mentioned in this document.*
6. **Additional Warranty (Optional):** The cost of ‘annual maintenance contract (AMC)’ and “comprehensive maintenance contract (CMC)” should be provided **separately** for extension of warranty for additional 5 years, on a year-wise basis (for 4th year, 5th year, 6th year, 7th year, and 8th year), which is beyond the normal 3-year warranty (1st year, 2nd year and 3rd year) period stated above.
7. **Installation and Demonstration/Training (free of cost):** Onsite installation, testing and demonstration/training of the equipment, accessories and associated data processing softwares, by professional person(s), for at least 7 days at IIT(ISM), Dhanbad. All the cost related to installation, testing and demonstration/training (for instance cost of travel, accommodation, per diem etc.) to be borne by the OEM/supplier.

8. **Supply:** Price should be quoted on **FOR, IIT(ISM) Dhanbad** basis in case of Indigenous supply and **FOR, IIT(ISM) Dhanbad/CIP Kolkata** in case of foreign supply.
9. **Total Cost:** Total cost of the equipment should be quoted in INR in case of Indigenous supply and in Foreign Currency in case of Foreign Supply (Imported Equipment from OEM).
10. **Academic/Educational Discount:** Academic/Educational Discount and any other discount, if offered, should be clearly mentioned.
11. **Important Note:** The Quote should cover all the minimum specifications (as given in the **Table 1**) necessarily. Any **additional feature** provided along with the Reflectance, Transmittance, and Fluorescence Microscope System and included in the total cost (other than the items listed separately as optional) of the equipment will not add any further preference for considering the quote favorably. However, if the quote is considered, as per IIT(ISM) Dhanbad purchase rules, the vendor has to retain all the features (including additional features listed as a part of the total cost of the equipment) intact as per the original quotation.
 - **Thus, the cost of “additional” components, accessories, software’s and features, which are part of the standard system and required for complete operation of the system must be listed in Table 1.**
12. **Optional (Items/Accessories and Additional Features):** The cost of any additional accessories and features, which are optional in nature, may be listed separately in Table 2.
13. **Shifting of instrument:** Equipment may be installed in a temporary location initially and may be shifted to a permanent location later on. *The OEM, without any additional cost, must provide undertaking regarding shifting & reinstallation of the system by a professional team to a permanent location if requested by the Indenter/Project (Principal Investigator)/Co-investigator. Damage during the shifting, if any, of the equipment must be the liability of the OEM.*
14. *The OEM should certify that the Microscope System along with Digital Camera Configuration and Control is a fully integrated system and all other components/accessories are fully compatible.*
15. *A guarantee should be given by OEM to supply all the parts, if required, for at least 10 years from the date of installation.*
16. **All parts and accessories, which is necessary for full functioning of the Reflectance, Transmittance, and Fluorescence Microscope System, must be supplied with the tendered/quoted item.**
17. **All the pages of the quote for tendered item, including brochures/flyers/OEM certificates/OEM certified list/any other page, should be numbered sequentially by OEM/Supplier. The relevant page number, that complies with the given specification(s) in Table 1 and 2, must be identified in the column (Specification is on Page No^{##}) in Table 1 and 2.**
18. **Shipping and Installation:** Within 3 months or 90 days from the date of issue of work order/purchase order by purchase section of the Institute.

Table 1. Minimum specifications and quantity for Reflectance, Transmittance, and Fluorescence Microscope, for the measurement of coal (macerals) with accessories along with data acquisition, retrieval and analysis system and power backup.

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specification is on Page No##	Cost of part /module /item
1.	Coal Petrographic Analysis					
	a. Vitrinite/Maceral reflectance of coal (reflectance measurement)	As per ASTM/ISO and Other standards (if available): IS/DIN/BS/GOST/PN Standards				
	b. Mineral reflectance	Measurement of reflectance of mineral(s).				
	c. Camera, Spectrophotometer and Hardware Auto focus unit	Atleast three Inbuilt ports for <ul style="list-style-type: none"> • Camera unit, • Spectrophotometer unit and • Hardware Auto focus unit 				
	d. Hardware Auto Focus	<ul style="list-style-type: none"> • Motorized auto focus and • To stay in auto focus (Z- axis) during movement in x-y direction • Correction of focus (z-axis) during motion is automatic 				
	e. Continuous measurement	Continuous online measurement/observation of signal development.				
	f. Textural analysis	Yes				
	g. Compositional/percentage analysis and report generation	Yes. Software support for counting (maceral types/mineral), auto percentage calculation, frequency histogram and report generation.				
	h. Fluorescence study	UV (Ultra Violet), B (Blue) and G (Green) excitation should be provided				
	i. Power adapter(s)	The microscope and all components/modules/accessories should work/fit in standard Indian electrical fittings				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
		(230±10 Volt, 50Hz, Single phase)				
	j. IR Block filter for camera application	IR Block filter				
2.	Microscope	Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> name and model number. 	01			
	a. Camera	High Resolution Digital Color Camera (fitted on the microscope) with live imaging	01			
	i. Megapixel	6 MP (or higher)				
	ii. Image Sensor	Color CMOS/CCD				
	iii. Sensor Size	1 inch (or higher)				
	iv. Resolution	1200 × 1000 pixels (or higher)				
	v. Pixel Size	6.80 × 6.80 μm (or lower)				
	vi. A/D Converter	36 bit (RGB) Color				
	vii. Frame rate	<ul style="list-style-type: none"> 6 fps @ normal resolution/1×1 bin 12 fps @ maximum resolution 				
	viii. Detector	Thermoelectrically cooled with calibrated variable aperture package				
	ix. Cooling system	Peltier Cooled/Active cooling system				
	x. Camera Mount	Universal C type/proprietary				
	xi. Camera Control	Camera control software support				
	b. Objective lens	Universal strain free and infinitely corrected High resolution Neofluar-Fluotor Pol objectives with following magnifications				
	i. Dry	2.5x, 5x, 10x, 20x, 40x, 50x, 100x	01 set			
	ii. Oil	Special Oil objectives: 20x (Oil), 50x (Oil) and 100x (Oil) for incident, transmitted and fluorescence observations	01 set			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	c. Nose piece to accommodate objectives	Revolving 6 position (or higher) nose piece to accommodate at least 6 numbers (or higher) of objective lens				
	d. 8 or 10 position motorized revolving reflector turret	To accommodate various types (8 or 10 numbers) of reflector blocks for reflected, transmitted, and fluorescence illumination.				
	e. Bertrand lens	Yes				
	f. Accessory plates:	Gypsum plate	01			
		Mica plate	01			
		Quartz wedge	01			
	g. Quartz plate iris diaphragm	Yes				
	h. Variable Field and Aperture diaphragms and filter wheel for accommodating at least 8 Light filters	Removable reflector illumination cubes for UV and Blue, Green excitation, daylight neutral density and interference Green filter (546 nm)	01 set or as required			
	i. Illumination optics	Polarized 'Epi' & 'Dia' -illumination optics with Apochromatically corrected beam path for removing longitudinal chromatic aberration				
	j. Eyepiece					
	i. Description & type	Universal strain free and High resolution eyepiece				
	ii. Magnification & graticule	<ul style="list-style-type: none"> Wide field paired 10x eye piece with focusing front lens (plan 10x/25) and with a measuring graticule in one of the eyepieces 	02 sets			
		<ul style="list-style-type: none"> Two pairs of plan 10x/25 Eye piece extra 	02 sets			
		<ul style="list-style-type: none"> 10x/25 Eye piece with cross bar 	01 or as			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
			required			
		<ul style="list-style-type: none"> 10x/25 Eye piece with cross measuring graticule 	01 or as required			
		<ul style="list-style-type: none"> Graticule with crosslines and 10MM=100div. 	01 or as required			
		<ul style="list-style-type: none"> Kotter Graticule. 	01 or as required			
	iii. Reticule cross	One eyepiece must have reticule cross	01 or as required			
	iv. Focusable	Both the eyepiece should be focusable				
	v. Anti-glare protection	Anti-glare protection for viewers with or without glasses				
	vi. Stage micrometer	For TL & RL	01 or as required			
3.	Auto XYZ-Stage	Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> name and model number. 	01			
	a. Stage (X,Y axis)	<ul style="list-style-type: none"> Stage controller. Software controlled motorized scanning x-y stage with an independent joy stick/touch screen/track ball. 				
	i. Travel Range/scan area (X × Y)	50mm × 40mm (or higher)				
	ii. XY stepping	Motorized				
	iii. Sample Height space	<ul style="list-style-type: none"> 0-20 mm (with condenser holder) 0-40 mm (or higher) 				
	iv. Precise positioning	Motorized/auto and manual mode				
	b. Stage (Z-axis)/Focus Drive	Auto motorized				
	i. Travel Range (Z-axis)	0-20mm (or better) manual/auto mode				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ^{##}	Cost of part /module /item
	ii. Stepping resolution (Z-axis)	<ul style="list-style-type: none"> • Motorized mode: software controlled through control unit. • Manual mode: Coarse and Fine focusing knobs (frame mounted) 				
	iii. Z-resolution/stepping	<ul style="list-style-type: none"> • 10 to 20 nm or lower 				
4.	Circular Polarizing Stage (Attachable/removable rotatable stage)	Separate 360° Rotatable Stage (manual mode) with X-Y Mechanical attachment. Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 	01			
5.	Analyzer	360 degree rotatable insertable Universal Analyzer with Lambda plate & Vernier 0.1 degree for reflected & transmitted illumination and with dis-engageable grey filter				
6.	Polarizer					
	a. Reflected/ Transmitted observation	90 degree rotatable Polarizer and/or Frame Mounted Transmitted Polarizer				
	b. Depolarization slider	360 degree rotatable				
7.	Compensator	Compensator $\lambda/4$, Compensator λ , Compensator Wedge $0-\lambda$				
8.	Illumination					
	a. Transmitted & Reflected	100 to 150 Watt range, 12V Halogen Lamp				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
	Light					
	b. Fluorescence	100 to 150 Watt range Mercury Lamp with power supply unit				
	c. Additional illumination	for Fluorescence studies with adjustable lamp mount.				
	d. Switching	<ul style="list-style-type: none"> Between mercury and halogen lamp housing should be through a lever/manual/motorized system. All illuminators (reflected, transmitted and fluorescence) should be frame mounted/attachable. 				
9.	Input/output port(s)	USB 2.0/ USB 3.0/ HDMI/proprietary				
10.	Spectrophotometer	Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> name and model number. 	01			
	a. Spectral Range	400(±50)nm to 900(±50)nm				
	b. Fluorescence excitation range	400(±50)nm to 650(±50)nm				
	c. Reflectance and Transmission Microspectroscopy	Yes				
	d. Fluorescence Microspectroscopy	Yes				
	e. Spectral Resolution	From 1nm to 15 nm (User selectable) or better				
	f. Detector	Solid State Array				
	g. Detector Cooling	Thermoelectric				
11.	Data Acquisition Software	Necessary software for data acquisition and				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
		interface with the equipment. Perpetual license. Software tools to support acquisition, analysis and storage in the standard file formats.				
	a. Name of software, if any	Name and latest version number.				
	b. License count	01 (One)				
	c. License type	Perpetual license.				
	d. Automatic XYZ-Stitching	Required				
	e. Basic Measurements	i. Count				
		ii. Area				
		iii. Distance				
		iv. Angle				
		v. Radius				
		vi. Diameter				
		vii. Edge Detection				
	f. 3D Measurements	i. Height,				
		ii. Area				
		iii. Volume				
		iv. Distance				
		v. Roughness				
		vi. Profile along a line				
	g. 3D Model generation	3D model generation of sample				
	h. Spectral Ratio measurement	i. Point/Region of Interest (ROI)				
		ii. Ratio map creation				
	i. Digital Image Processing	i. High Dynamic Range (HDR)				
		ii. Brightness				
		iii. Contrast				
		iv. Noise removal/filtering				
		v. Auto image stitching/mosaicking with				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
		autofocus				
	j. File formats	i. Still Image formats (EXIF/JPEG/TIFF/RAW/PNG, compressed/uncompressed)				
		ii. Movie formats (1280×720 or 1920×1080)				
	k. Report generation	i. Descriptive/Basic Statistics				
		ii. Excel/Word/html report generation				
12.	Data Acquisition Unit/Computer	Hardware (Desktop/Workstation/ Laptop) for software control/interface with the equipment required for the operation, data collection, analysis and storage in the laboratory.	01 or as required.			
13.	Workstation	For data analysis, storage and report generation	01 or as required.			
		Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 				
	a. Processor	Intel Xeon E5/E7 series or Intel Core i7/i9 Desktop/workstation Processor Series or newer Intel series or AMD series				
	b. Processor (Core and Speed)	<ul style="list-style-type: none"> • 8 core (minimum) and • 2.8 GHz (minimum) 				
	c. Motherboard	<ul style="list-style-type: none"> • Support for SATA III, • Support for DDR4 Memory (DDR4-2133MHz) 				
	d. Hard Drive	480/500GB SSD				
	e. Additional Hard Drive	4000GB 3.5inch SATA/SAS (7,200 Rpm) HDD				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	f. Video Card/Graphics Card	Graphics Card 4GB or more				
	g. Memory	32 GB DDR4-2133MHz (minimum)				
	h. Keyboard	Keyboard (wired), full-size keyboard				
	i. Mouse	Laser Scroll USB (wired), minimum 100dpi				
	j. Monitor	<ul style="list-style-type: none"> • IPS LED Monitor • Screen Size: between 26 to 32 inch • Resolution (minimum): 4K /5K display or higher • Brightness (nit) (minimum): 250 • Contrast Ratio: 10000000:1 • Response Time: 5ms (or lower) • Viewing Angle: 170/170 (or higher) • Color Depth: 16.7 million (or higher) • HDMI: Yes • Speakers: 5W×2 (inbuilt or Soundbar) • Tilt: Yes 				
		Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 				
	k. Optical Drive	DVD+/-RW Drive				
	l. Network Speed	10/100/1000 (1Gbit) NIC				
	m. Cabinet/Chassis Design	Tower				
	n. Operating System	Windows 10 Pro 64bit, English or latest version.				
	o. Microsoft Office Pro	2016 version or latest version				
	p. Internet Security (Antivirus with anti-maleware and firewall)	3 years (Eset/McAfee/Norton/Avira/Kaspersky)				
	q. Power Supply	≥900 Watt and ≥90% Efficiency				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	r. Standard Warranty (for Workstation unit only)	Minimum 3 Yrs Next Business Day Onsite Service for workstation unit only				
	s. Manufacturer/OEM of workstation	Workstation should be from a reputed Original Equipment Manufacturer (OEM) having its own registered trademark such as Dell/HP/HCL etc.				
14.	Consumables					
	a. Immersion Oil	Fluorescence free (for reflectance and fluorescence measurement). Approx. 200/250 ml: 10 numbers				
	b. Tungsten Halogen lamps (reflected and transmitted)	100 to 150 Watt range, 12V Halogen Lamp , 10 numbers				
	c. Mercury lamps	100 to 150 Watt range Mercury Lamp, 5 numbers				
	d. Lint free tissue paper	10 packs (100 count in each pack)				
	e. Any additional consumable	Kindly mention any additional consumable and its quantity required for the system operation				
15.	Standards for Calibration					
	a. Vitrinite reflectance (one of the following standards = Bausch and Lomb Co./Schott/Similar Optical glasses/standards) (Bausch and Lomb Co. optical glasses or	All Standards should be calibrated at 546nm wavelength (the reported refractive index at 546 nm and the calculated standard reflectance in oil are given in parentheses). These standards must be durable, isotropic, resistant to corrosion and tarnish free from internal flaws or fractures, and have negligible light absorption.	01 set			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	Schott Co. optical glasses or Similar Optical glasses/standards with RI and standard reflectance as either Bausch and Lomb/Schott.). Details are given below.					
	Details of Bausch and Lomb Co. optical glasses/standards or Similar Optical glasses/standards	689 309 (1.6935; 0.299%)	01 set			
		751 278 (1.7566; 0.532%)				
		827 250 (1.8351; 0.895%)				
		850 324 (1.8543; 0.996%)				
		915 213 (1.9235; 1.390%)				
		980 222 (1.9907; 1.817%)				
	Details of Schott Co. optical glasses/standards or Similar Optical glasses/standards	SF8-689-312 (1.6945; 0.303%)	01 set			
		SF13-714-276 (1.7477; 0.496%)				
		LaF12-836-423 (1.8400; 0.921%)				
		LaSF9-850-322 (1.8567; 1.009%)				
		LaSF18-913-325 (1.9273; 1.413%)				
		LaSF6-961-249 (1.9670; 1.662%)				
	b. Vitrinite reflectance (Other Standards)	Leucosapphire (1.77; 0.59%)	01			
		Yttrium aluminum garnet, YAG (1.84; 0.92%)	01			
		Gadolinium gallium garnet, 3G (1.98; 1.73%)	01			
		Silicon carbide (2.663; 7.52%)	01			
		Strontium Titanate (5.30% against oil)	01			
		Cubic Zirconia (C-Z) (3.20% against oil)	01			
		N-LASF46A (1.30% against oil)	01			
		Spinel (0.40% against oil)	01			
		Glass NG1(0.00% against oil)	01			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	c. Fluorescence standards	400nm or less to 700nm or more. Instrument should be capable of measuring spectral fluorescence parameters quantitatively.				
		Standards for fluorescence calibration/Filters for excitation/barrier UV/near-IR range.				
		~2mm/~4mm filters/parts to block near-IR emissions/barrier filters				
		~2mm UV excitation filter/parts				
		UV (Ultra Violet), B (Blue) and G (Green) excitation should be provided				
	i. Peak wavelength (λ_{max})					
	ii. Q(Red to Green ratio)	(I_{650}/I_{500}) relative intensities at 650nm and 500nm				
	iii. Qmax (peak height ratio)	(I_{max}/I_{500}) peak intensity to that 500nm				
	iv. Q	Area ₃₉₀₋₅₃₀ / Area ₅₃₀₋₇₀₀				
	v. QF535	Area ₅₃₅₋₇₅₀ / Area ₄₃₀₋₅₃₅				
	vi. Hw (Half peak width)	$\lambda_r - \lambda_b$ (nm)				
	vii. Measurement of fluorescence intensity					
	viii. Exposure time	2s/10s or user selectable				
16.	Essential power supply, batteries, chargers, cables and operating manuals for power backup	At least minimum number of units (batteries, chargers, cables etc.) required for the smooth operation of reflectance, transmittance, and fluorescence microscope in the laboratory	01 or as required.			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
		should be part of the standard supply.				
17.	Tool kit	Suitable and essential tool kits must be provided with the instrument for the required maintenance	01 or as required.			
18.	Hard boxes/containers	Adequate number of containers should be provided to house the equipment and accessories during transportation and storage.	01 or as required.			
19.	Operational Environment	Adequate inbuilt protection of equipment against water, sand and dust				
	a. Operational Temperature	+20°C to +40°C or wider range				
	b. Storage Temperature	+10°C to +60°C or wider range				
	c. Humidity	75% (preferably 95%) or higher				
20.	Temperature and Humidity controller (AC & Dehumidifier)	For controlling the temperature and humidity within required range for the operation of equipment inside the laboratory.				
	a. Air Conditioning (AC) Unit	Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 	01			
	i. Split AC	Separate indoor and outdoor unit.				
	ii. Modes (Cooling/Heating/Dry)	Heating/Cooling/Dry modes of operation				
	iii. Temperature Control range	18±2 °C to 28±2 °C				
	iv. Tonnage	1.5±0.1 ton				
	v. BEE (Bureau of Energy Efficiency) ISEER	4.5±0.3 (or higher) / Star rating = 5				
vi. Cooling (watts)	5000±500 watts (or higher)					

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
	vii. Noise Level (Indoor)(dB)	30±5				
	viii. Humidity Controller	Inbuilt				
	ix. Power Supply (Volt/Phase/Hz.)	(230±20 V, 1 phase, 50Hz)				
	x. External AC Stabilizer (Working range: 120±10 Volt to 290±10 Volt)	5 KVA stabilizer unit (from a OEM with registered trademark such as Microtek/V-Guard/Whirlpool)	01			
		Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 				
	b. Dehumidifier Unit	Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 	01			
	i. Dehumidification capacity	28litre/24h to 38litre/24h				
	ii. Tank capacity	5 to 10 litre				
	iii. Full tank alarm	Yes				
	iv. Inbuilt Display	Room temperature and Humidity level				
	v. Continuous operation (24 hr)	Yes				
	vi. Room RH (%) control range	30±10 to 65±10				
	vii. Handle and wheels/castors	Yes				
	c. Warranty and on-site installation for AC Unit	Minimum 3-year warranty on Split AC Unit, Dehumidifier Unit and External Stabilizer with				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
	and Dehumidifier Unit only.	on-site installation support)				
	d. Manufacturer/OEM of AC Unit/Dehumidifier Unit	Should be from a reputed Original Equipment Manufacturer(s) (OEM(s)) having its own registered trademark.				
21.	Power Backup Unit	Sinewave 1.5±0.1 KVA UPS System with 1 or 2 number (as required) of external lead-acid tubular batteries (12V/24V) including onsite installation	01			
	a. UPS Unit (1.5±0.1 KVA)	Sinewave UPS Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 	01			
	i. Output Power Capacity	1500VA±100VA				
	ii. Output Voltage	220±10% V				
	iii. Efficiency at full load	Atleast 85%				
	iv. Input Voltage	Standard mode/range: 120 to 290 V and Narrow mode/range: 180 to 260 Volt				
	v. Output Waveform	Sinewave (UPS Mode)				
	vi. Input Connections	Hard Wire 3 Wire (1 PH+N+G)				
	vii. Input voltage for main operations	Single Phase UPS.				
	viii. Waveform Type	Sine wave (Output)				
	ix. LCD/LED Control Panel	Multi-function LCD (status and control console) Display/indicators for Mains/UPS ON, Battery Charging, Overload, Battery Low, Fault				
	x. Switchover from Mains to UPS/UPS to Mains	Automatic				

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No##	Cost of part /module /item
	xi. UPS Transfer Time	≤ 15 msec (or lower)				
	xii. Auto Reset Feature	Yes				
	xiii. Battery Charging Current	~10±2 Amps or appropriate charging current to charge 12V/24V lead-acid (150Ah each) tubular batteries connected to the sinewave UPS system.				
	xiv. Protection	<ul style="list-style-type: none"> • UPS Overload protection (100%) • UPS Short circuit protection (250%) • Input over voltage protection (280/300V), • Input under voltage protection (100/120V), • Low battery & battery over charge protection Battery Deep Discharge protection				
	xv. Weight	Less than 50 Kg (for UPS unit)				
	b. Battery Unit and Volt (number of Batteries required for one Sinewave UPS Unit)	<ul style="list-style-type: none"> • 12V/24V • 1 or 2 (12V, 150 Ah each) number of batteries. • UPS Charging support for 1 or 2 (12V, 150 Ah each) lead-acid tubular batteries for UPS to function normally. 	01 or 02 as required			
		Please mention make/OEM/Manufacturer <ul style="list-style-type: none"> • name and • model number. 				
	c. Trolley	a. Movable trolley with minimum four wheels/castors, metallic frame and legs, and table top (wooden/ply) for UPS and holding a Battery.	01 or 02 as required			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
		<p>b. Load Capacity: Atleast 50 Kg (each)</p> <p>c. Battery size/holding capacity: Approx. 19×8.5×18 inches (L×B×H) to accommodate tubular lead-acid battery.</p> <p>d. Color: Black/White/ Brown/ Grey/Combination</p>				
	d. Warranty (for UPS and Battery Units only)	Minimum 3 Years onsite Warranty for UPS and Battery unit only. Next business day support.				
	e. Manufacturer/OEM of UPS Unit/Battery Unit	UPS/Batteries should be from a reputed Original Equipment Manufacturer (OEM) having its own registered trademark such as APC/Microtek/Exide/Luminous etc.				
22.	Availability of Spares (Except Workstation Unit/UPS Unit/Battery Unit/AC Unit/Dehumidifier Unit)	The original equipment manufacturer (OEM) should confirm in writing that the spares for the quoted model will be available for a period of ten years after installation of the instrument. In case the OEM is bidding through an Indian agency/agent, the OEM should give a written undertaking that they will be responsible for providing all the spares as mentioned above, even if there is a change in the Indian agent/agency of the manufacturer.				
23.	Manuals	<ul style="list-style-type: none"> One set of printed operating manual and service manual in English language. 	01 set or as required			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specificati on is on Page No ##	Cost of part /module /item
		<ul style="list-style-type: none"> Also soft copy in a CD/DVD/USB pendrive must be supplied. 	01 or as required			
24.	Specification sheet(s) and product brochure(s)	Printed copy of all the specification sheets, and product brochures/manuals related to Reflectance, Transmittance, and Fluorescence measurement should be supplied along with the quote. Soft copy may also be provided in a CD/DVD/USB pendrive.	01 set or as required.			
25.	Warranty	Total cost of supply must include 3 (three) year onsite warranty (for 1 st year, 2 nd year and 3 rd year since installation) including technical support for all equipment, modules, components, accessories and softwares (within 5 business day support). The cost of repair/replacement/shipping, if any, should be borne by the supplier during the warranty period.				
26.	Installation & Testing	<ul style="list-style-type: none"> Installation, Commissioning & Testing of the Equipment and its accessories at site for acceptance. Onsite demonstration and training to be provided on operation and maintenance of the equipment, accessories and associated data processing software's by professional person(s) for at least 7 days at IIT(ISM), Dhanbad. 				
27.	Any additional	Important specification of the	If			

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specification is on Page No##	Cost of part /module /item
	component(s)/module(s)/software(s)/ accessories which is a must/required for full functioning of the equipment must be listed here. Please use additional rows/sheets if required.	component(s)/module(s)/software(s)/ Accessories.	required.			
28.	Any other item.	If required.	If required.			
29.	--	--	--			

Part number(s) must be given for each part/unit/module in a separate column.

Specification must be mentioned on a given page no. in the brochure/flyer/OEM certified list/document. Reference Page number of each specification(s) should be provided as given in brochure/flyer/OEM certified list/document. Please mention the exact page number.

Table 2. Other additional accessories and features (Optional): separate list may be provided in the quote for additional items and accessories, which are optional in nature, if any.

Sl. No.	System Configuration/Feature	Minimum Qualifying Specifications	Minimum Quantity	Part Number(s) #	Specification is on Page No##	Cost of part /module /item
A1.	Spectrophotometer	i. 900(±50) nm to 1700(±50) nm	01			
		ii. 900(±50) nm to 2100(±50) nm	01			
A2.	DIC and Circular-DIC Observation	For Sample Un-evenness	01			
A3.	Automatic point counting	'PETROG' stage	01			

	stage					
A4.	Standards for calibration	Please enlist the standards.	01			
A5.	Close-up protection assembly for laboratory mount.	Dust cover	01			
A6.	Illuminated light intensity indicator	LED preferable	01			
A7.	Joy stick/Tack ball Controller	Manual operation of Auto XYZ stage	01			
A8.	Eye piece Guard		06			
A9.	Touch Control Panel		01			
A10.	Geolmage™ for Vitrinite Reflectance	License	01			
A11.	DISKUS	http://www.hilgers.com/Engl_index.html Please provide quote for license (01 unit, perpetual license)	01			
A12.	FOSSIL: software for reflectance measurement and maceral analysis.	http://www.hilgers.com/F_Fossil.htm Please provide quote for FOSSIL license (01 unit, perpetual license)	01			
A13.	Integration of Optical & Electron Microscopes (Parts/Accessories/Softwares)	Co-relative accessories consisting of software and universal sample holder with three position calibration marker for combination of quoted optical system along with electron microscope for performing EDS & EBSD study on true colored optical microscopy images and finding same "ROI" on both the systems automatically. Superimposing of optical image on SEM image should be possible. All parts/components/modules and softwares required for co-relative microscopy.	1 or as required			

A14.	Additional Warranty (Optional) (Except Workstation Unit/UPS Unit/Battery Unit/AC Unit/Dehumidifier Unit)	The cost of 'annual maintenance contract (AMC)' and "comprehensive maintenance contract (CMC)" should be provided <u>separately</u> for extension of warranty for additional 5 years, on year-wise basis (for 4 th year, 5 th year, 6 th year, 7 th year, and 8 th year), which is beyond the normal 3 year warranty (1 st year, 2 nd year and 3 rd year) period				
	a. Warranty 4th year	Cost of additional warranty for 4 th year since installation				
	b. Warranty 5th year	Cost of additional warranty for 5 th year since installation				
	c. Warranty 6th year	Cost of additional warranty for 6 th year since installation				
	d. Warranty 7th year	Cost of additional warranty for 7 th year since installation				
	e. Warranty 8th year	Cost of additional warranty for 8 th year since installation				
A15.	Any other optional component/accessories offered by the OEM. Please use additional rows/sheets if required.	Specification/details of the component/accessories.				

Part number(s) must be given for each part/unit/module in a separate column.

Specification must be mentioned on a given page no. in the brochure/flyer/OEM certified list/document. Reference Page number of each specification(s) should be provided as given in brochure/flyer/OEM certified list/document. Please mention the exact page number.

Table 3. List of other Certificates/Items to be produced by the OEM/Supplier along with the quote for tendered item.

Sl. No.	Description	Attached (Yes/No)	Please mention relevant page number
1.	<i>A certificate is required from the original equipment manufacturer (OEM) that their equipment and accessories meet all minimum specifications as given in the Table 1</i>		
2.	<i>List of all accessories, with part(s) number(s), to be supplied by the OEM is required.</i>		
3.	<i>A three-year warranty certificate including technical support is required from the OEM. For Workstation Unit/UPS Unit/Battery Unit/AC Unit/Dehumidifier Unit, separate warranty certificate(s) should be obtained and enclosed from respective OEMs/suppliers.</i>		
4.	<i>In case the local representative of the OEM/Principal Company changes or withdraws; a letter of assurance by the OEM/Principal Company is required stating that they will directly cover the warranty and service the equipment as and when required as per the terms and conditions mentioned in this document.</i>		
5.	<i>The OEM, without any additional cost, must provide undertaking regarding shifting & reinstallation of the system by a professional team to a permanent location if requested by the Indenter/Project (Principal Investigator)/Co-investigator. Damage during the shifting, if any, of the equipment must be the liability of the OEM.</i>		
6.	<i>The OEM should certify that the Microscope System along with Digital Camera Configuration and Control is a fully integrated system and all other components/accessories are fully compatible.</i>		
7.	<i>A guarantee should be given by OEM to supply all the parts, if required, for at least 10 years from the date of installation.</i>		
8.	<i>Certificate for Hardware specifications and calibration(s) for complete Reflectance, Transmittance, and Fluorescence Microscope System should be supplied (as mentioned in the Table 1) including any</i>		

	additional accessories/features required for operation of the equipment. The documentation on specifications, calibration procedure, and results obtained should be provided.		
9.	Certificate for Hardware specifications and calibration(s) for "optional components" of Reflectance, Transmittance, and Fluorescence Microscope System should be supplied (as mentioned in the Table 2) including any other accessories/features. The documentation on such specifications, calibration procedure, and results obtained should be provided.		
10.	Detailed Catalogue/Data Sheet/OEM certified list with part number(s) of the all the quoted item(s) listed in Table 1 (and any other additional accessories/features) and 2.		
11.	Clientele List (with in India and other countries)		
12.	Performance Letter from the Clients (with in India and other countries).		