

 <p>IIT PALAKKAD</p>	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिया एकीकृत कैम्पस, कोज़िपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no: 04923 – 226 300/590/586</p> <p>ईमेल/ Email : purchase@iitpkd.ac.in</p>
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Prof. Job Kurian
Registrar i/c

Ref : Fourier Transformed Infra Red Spectrophotometer
Date : 28.11.2017

Open Tender No: IITPKD/CIF/DJ/073/2017

Due Date: 19.12.2017 @ 3.00 PM

Dear Sir/Madam,

On behalf of the **Indian Institute of Technology, Temporary campus, Palakkad, Quotations are invited for “Fourier Transformed Infra Red Spectrophotometer”**. The Specifications are given in the Annexure.

Technical bid Opening: The Technical bid will be opened on 19.12.2017 at 3.00 PM at Conference Room, Academic Block, IIT Palakkad.

Instructions to the Bidder

- (i) **Preparation of Bids:** - The tenders should be submitted **under two-bid system (i.e.) Technical bid and Financial bid in separate envelopes**. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate covers and sealed. Both sealed covers should be put into a bigger cover. **Bids must either be spiral bound / stapled together. No loose sheets will be accepted. All pages must be numbered.**
- (ii) The Quotations duly sealed and superscribed on the envelope **with the reference No. and due date, should be addressed to the undersigned so as to reach on or before the due date stipulated above.**
- (iii) **Delivery of the tender:** - The tender shall be sent to the below-mentioned address either by post or by courier so as to reach this office before the due date and time specified in the Schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule. **The tender box is kept in the office of the Academic Block, IIT Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad-678 557.**
- (iv) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and will be examined by a technical committee which will decide the suitability of the bid as per our specifications

and requirements. The bidders will be invited for opening of Technical bids. **The Bidder's representative should carry authorization letter from their company empowering them to participate in the Pre-bid and tender opening meetings.** In respect of opening of financial bid, those bidders who are technically qualified only will be called.

- (v) **Prices:** - The price should be quoted in nett per unit (after breakup) and must include all packing and delivery charges indicated separately for each item. **The price indicated should be CIF/CIP Kochi.** The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. The price should be quoted without custom duty. **The custom duty will be paid at concessional rate against duty exemption certificate.**
- (vi) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. **Terms of Delivery:** - The item should be supplied to our Institute as per Purchase order. The installation and commissioning should be completed as specified **by us in the attached schedule.**
- (vii) **Acceptance & Rejection:** IIT Palakkad reserves the full right to accept / reject any tender at **any** stage without assigning any reason.

Yours sincerely,

Registrar, IIT Palakkad

SCHEDULE

Important Conditions:

- 1) The due date for the submission of the tender is * **19.12.2017 @ 3.00 PM**
- 2) The offers / bids should be submitted in two-bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes (separately), transportation, packing & forwarding charges, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers **superscribed clearly as “Technical Bid” and “Financial bid”** and sealed. Both the sealed covers should be put in a bigger cover. Open Tender for **“Fourier Transformed Infra Red Spectrophotometer** should be written on the left side of the Outer bigger cover and sealed.
- 3) **EMD: -EMD should be at 2% (two percent) of the tender value quoted by the bidder.** The EMD should be enclosed with the financial bid which will not be opened for Technical evaluation. Enclosing the EMD in the Technical bid will automatically DISQUALIFY the tenderer. EMD should be in the form of DD in favour of **“Indian Institute of Technology Palakkad” and payable at Palakkad**”. The tender without EMD would be considered as UNSOLICITED and will be REJECTED. Photo/FAX copies of the Demand Draft/Banker’s pay orders will not be accepted. No interest will be paid for the EMD and the EMD will be refunded to the successful bidder on receipt of Performance Security.
- 4) **Performance Security:-** The successful bidder will be asked to submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD or FD Receipt from the commercial bank or Bank Guarantee from any nationalized bank of India. **Only after submission of Performance Security, Purchase Order/Work Order will be released / L.C will be opened.**
- 5) **Performance Security in the form of Bank Guarantee:-** In case the successful bidder is a foreign company and wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.
- 6) The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

If an Indian agent is involved, the following documents must be enclosed:

- Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
 - Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
- 7) The offer/bids should be sent only for a system or equipment that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
 - 8) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
 - 9) Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
- 10) Validity:** Validity of Quotation not less than 90 days from the due date of tender.
- 11) Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
- 12) Risk Purchase Clause:-** In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
- 13) Payment:-** No Advance payment will be made for Indigenous purchase. 100% Payment after supply and successful installation and commissioning and certification by the end user. In case of import supplies the payment will be made only through **100% Letter of Credit i.e. (50% payment will be released against shipping documents and 50% after successful installation and meeting acceptance criteria wherever the installation is being done).** **Advance payment may be considered on submission of Bank Guarantee equal to the amount of advance payment.**
- 14) On-site Installation:** - The equipment or machinery has to be installed and commissioned by the successful bidder within 15 to 20 days from the date of receipt of the **item at site of IIT Palakkad.**

- 15) Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).
- 16) Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
- 17) Loading and unloading charges will be borne by the bidder/Supplier.**
- 18) Acceptance and Rejection:** - I.I.T. Palakkad has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
- 19) Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**
- 20) Disputes and Jurisdiction:** - Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Palakkad in Kerala.
- 21) All Amendments, time extension, clarifications etc., will be uploaded on the institute website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.**

Acknowledgement:- It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER
ALONG WITH SEAL OF THE
COMPANY WITH DATE**

**TECHNICAL SPECIFICATIONS FOR THE PROCUREMENT OF FOURIER TRANSFORMED –
INFRA RED SPECTROPHOTOMETER
INDIAN INSTITUTE OF TECHNOLOGY - PALAKKAD**

No.	Description	Specification
1	Physical dimensions	About 600(W) × 665(D) × 295(H) mm
2	Wavenumber range	7800 -350 cm ⁻¹
3	Resolution	0.4 cm ⁻¹ or better in the middle IR region
4	IR Source	High energy ceramic source
5	Beam splitter	Germanium-coated KBr.
6	Wavelength repeatability	Measured at two wavenumbers in transmittance and absorbance mode using European Pharmacopea (EP) standards and must be between 0.02-0.05 cm ⁻¹
7	Wavelength accuracy	0.01 cm ⁻¹ or better
8	<ul style="list-style-type: none"> • Optics 	<ul style="list-style-type: none"> • The equipment must have 30° incident angle sealed Interferometer with automatic dehumidifier and equipped with advanced dynamic alignment with capability to automatically compensate for tilt and shear (smooth moving mirror) • Capable of removing the influence of environmental variations. • The interferometer should be capable of allowing the FTIR a shorter warm up time and remain powered off when not in use. • Optical system must be automatically aligned when the beam splitter is changed for NIR or FIR analysis. No manual alignment must be required for optics. • Rapid scan speeds must be achievable allowing kinetic studies. The maximum velocity of the interferometer components must be mentioned along with the conditions of measurement. • He-Ne Laser of 0.39 mW • Single beam gold coated optics
9	Sample compartment	Equipped with automatic accessory recognition mechanism.
10	Signal to noise ratio (KBr cell) during a standard 4 cm ⁻¹ 1 min scan	60,000:1 or higher (peak to peak)
11	Anti humidity features	Built in electronic dehumidifying features must be present.
12	Detectors	Standard DLATGS (deuterated L-alanine doped triglycine sulfite) detector with temperature control for MID IR
13	Power supply	220 - 240 V, 50 Hz Less than 2 VAC between Neutral and Earth. 6 amps socket for instrument.
14	Physical dimensions	Not exceeding 600(W) × 665(D) × 295(H) mm and a Weight of 47kg
	Accessories	
15	ATR	Monolithic Diamond Crystal plate covering the entire Mid IR spectral range capable of measuring Single Reflectance Attenuated Total Reflectance of droplets of liquids, thin films and powders.
16	MCT detector	MCT (Hg-Cd-Te) detector with protection and liquid N ₂ cooling must be supplied to enable rapid scan and high sensitivity measurements
17	DRIFT	<ul style="list-style-type: none"> • Accessory for diffuse or total reflectance for solid samples must include optical unit with dedicated baseplate micro sample cup (4mm diameter) and Standard cups (11mm diameter), Tilted cup for total reflectance. • Temperature controlled environmental chamber capable of carrying out the reflectance spectroscopy of the surface of solids. It must be capable of making heating samples up to 800°C in a programmed manner from vacuum (10⁻³ torr) to

		<p>high pressures (up to 500 psi) and in the presence of gases such as N₂, CO, CO₂ and H₂ in a dynamic flow using an external mass flow controller.</p> <ul style="list-style-type: none"> The unit must also allow the measurements under free flow of the above gases.
18	Others	<ul style="list-style-type: none"> Solid 13 mm evacuable KBr pellet holder made of 440C hardened steel (2 Nos), Sealed liquid cell, KRS-5 (1 unit), Hydraulic press of 10 ton capacity for powder samples – solid, liquid and semi solid – 1 unit Dewar flask – 1 Sample holder for effectively holding different samples (1 No) Silica gel with indicator for humidity (30 packs) Tungsten lamp for NIR Dissector (1 No) Agate Mortar & Pestle (1 Nos)
19	Software	<ul style="list-style-type: none"> Software must be compatible with Microsoft windows. It must also be compatible with all future up gradations such as NIR, Far IR and microscopy hard wares. Desirable features: Post run, Spectrum, Quantitation, Photometric , Spectrum measurement, continuous measurement, atmospheric correction measurement, continuous measurement and simple measurement mode. Self Diagnosis function, status monitor, Validation programme. Spectrum search , similarity search, peak search, Library consisting of 12,000 spectra of organic compounds, polymers, pharmaceuticals, inorganic compounds, food additives, contaminants etc. must be provided Multipoint calibration curve method, CLS quantitative method must be quoted as standard Kubelka Munk conversion, Kramers Krong, 3D Reprocess, 3D Extract, Peak pick up, Film thickness, base line correction, Normalise, Zero baseline correcting, Multipoint base line correction, smoothing, derivative, interpolate, Time-Temperature conversion, purity, deconvolution etc. must be provided as standard. Must have atmospheric compensation to minimize effect of atmospheric water and CO₂ on the sample spectra without the need for reference or calibration spectra. Software must have features to collect spectra in regular intervals and create a time course dataset up to 48 h automatically. 3D processing and plotting of the data must also be possible. Software features must include features for rapid scan using MCT detector Software must be able to switch between detectors and sources Software must be able to monitor Liquid N₂ level for MCT operation
20	Desktop hardware configuration	<ul style="list-style-type: none"> The quote must also include 1 unit of desktop with 6th generation Intel core™ i5-7500T processor (6MB Smart Cache, Intel HD Graphics 530 or Higher) RAM – 8GB DDR4. HDD – 500GB 7200 RPM SATA Motherboard – OEM Logo should be embedded, No sticker allowed. Operating System – Original Windows 7 or above 64

		<p>bit that is completely compatible with the equipment software. Monitor – 24 inch full HD IPS LED 1600X900 resolution with anti glare coating. Optical mouse wired. Standard keypad – wired. Ports – USB 2.0 ports (two numbers), USB 3.0 (one number), 1 DVD drive for seamless interface with the equipment and data download.</p>
21	Up-gradability	<ul style="list-style-type: none"> • The equipment must be upgradable to interface with other equipment such as Thermogravimetric analyzer or Gas Chromatograph • Upgradable to measure in Near IR and Far IR. • Upgradable to IR microscope.
22	<ul style="list-style-type: none"> • Warranty 	<ul style="list-style-type: none"> • 3 years warranty for the complete instrument and an additional 2 years coverage for critical components like Interferometer, Laser and IR Source. • Warranty for desktop must be 3 years • AMC for additional 3 years must be quoted separately
23	Acceptance criteria	<ul style="list-style-type: none"> • Equipment has to be delivered in test ready condition. Calibration of the equipment must be done at the time of installation. The Principal must clearly mention the requirements with regards to electrical mains supply, space required and any special requirements for the equipment in the tender document. • One satisfactory IR measurement of an in-house standard solid, liquid sample using KRS-5, KBr and ATR cells will be carried out. • Demonstration of DRIFT component using an in-house sample in the presence of a gas at high temperature and pressure. IR spectra will be recorded periodically to test both DRIFT set up as well as kinetic studies capability. • Training must be provided by factory-trained engineers at free of cost at the site. Training for 20 man hours will include basic knowledge about the installation of the equipment and operation of all the accessories quoted and calibration procedures.

Who can participate in the bid?

Only those bidders fulfilling the following criteria should respond to the tender.

1. The bidder should be either an Original Equipment Manufacturer (OEM) of **Fourier Transformed Infra Red Spectrophotometer** or should be an authorized representative (provide documentary proof) of an OEM.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership /a registered partnership firm OR a sole-proprietorship entity. Appropriate Registration incorporation certificate must be submitted.
3. The bidder must have a registered office in Karnataka/Tamil Nadu/Telangana/Andhra Pradesh/Maharashtra or Kerala. Certificate of registration for the offices to be provided.
4. The bidder must also have a service center in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh or Kerala. Certificate of registration for the centers to be provided. Details about scope of service activities provided by the service centres must be provided. The contact details of the service engineers must be provided.
5. The bidder must be in existence in the business of **Fourier Transformed Infra Red Spectrophotometer** or allied fields for a minimum period of 5 previous financial years (before or since 01 April 2012). Documentary evidences of experience must be provided.
6. The bidder should have implemented orders of **Fourier Transformed Infra Red Spectrophotometer** worth exceeding INR 20 lakhs during previous three financial years (01 April 2014 – 31 March 2017). Copies of the most recent purchase orders and certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished.
7. The bidder should have documentary evidence of having supplied at least 5 Nos. of **Fourier Transformed Infra Red Spectrophotometer** to a Centrally Funded Technical Institution (e.g., IIT, NIT, IISc, IISER, etc.) in the recent past. The bidder must provide a certificate of satisfactory performance of the supplied equipment from the institute to which they have recently supplied. Contact details of the faculty-in-charge of the installed setup must also be provided.
8. The bidder must provide detailed specification of each equipment/item. Model numbers, data sheets and brochures must be included for each quoted equipment/accessories/item. Specifications corresponding to quoted model number must be available publicly via OEM's website for scrutiny. If not, bid can be disqualified on technical grounds.
9. **Compliance sheet for the technical specification and OEM Brochure have to be attached along with the Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partially filled sheets lead to disqualification.**
10. **Service and warranty for a minimum period of three years for the equipment must be provided. AMC for additional three years must be quoted separately.**