

**Department of Optoelectronics, University of Kerala, Kariavattom,
Thiruvananthapuram, Kerala, India – 695581, Ph: 91 471 2308167**

OPTO/Nanophotonics-Phase II/P-4/2014-15

Quotation Notice

Quotations are invited for the following items for the research purpose in the Department of Optoelectronics, University of Kerala, Kariavattom, Thiruvananthapuram.

Table top Fourier Transform Infrared Spectrometer with thin film attachment

Description of the basic Unit:

Instrument should measure the IR spectra in the mid-infrared to near infra red spectral regions for thin films solids, and liquids. It should contain an infrared source, interferometer, containment cell, infrared detector, and interface with a computer. The computer should be equipped with software to run the interferometer and store the raw digitized signal from the detector (interferogram). The software should performs the mathematical conversion (the Fourier transform) of the interferogram into a spectrum showing the frequency dependent sample absorbance. All spectral data can be stored on computer media. The break-up of the general specifications required for the FTIR instrument is shown below:

General Technical Specifications:

Items	Specifications
Sample type	Organics, inorganic crystals, films, solutions, coatings, powders, sols and gels, polymers etc
IR range	Mid IR to Near IR, 100 cm^{-1} or 4000 cm^{-1}
Wave number Accuracy	0.02 cm^{-1} or still lower that is achievable or better
Infra red power	As high as 50 mW
Optics	Monochromatic or single beam that can pass through interferometer and detector with maximum detection efficiency of the given samples The optic must be coated with moisture repellent material
Light source	Rigid, high performance light source as per the universal standards with appropriate spare parts
Interferometer	Standard Michelson Interferometer with incident angle 30° or better. System should be sealed safely and can eliminate the interference of water/ CO_2 / CO and other possible compounds that interfere with Infra Red waves
Detector	Standard DLATGS Detector or better.

Beam Splitter	Standard KBr plate or better than this for accurate analysis of organic and hybrid samples
Sensitivity	Signal to Noise ratio should be >25000:1 or above
Resolution	1 cm ⁻¹ or better
Data processing	Addition, multiplication, subtraction, Absorption to Transmission conversion, normalization, smoothing, baseline correction, derivative and log function, wave length/wave number conversion, peak identification, peak marking, peak area mapping, film thickness, refractive index, Kubelka – Munk analysis, Kramer-Kronig analysis, data export option, multiple curves and curve fittings, data storage into memory stick etc.. Peak search and spectrum search with library
Computer Specifications	State of the art computer
Software Version	Versatile Microsoft WINDOWS 7 or higher
Interface	Suitable Interface cord manufactured by standard IEEE or RS 485 or better
Power	Line voltage 220 AC, 50/60 Hz with appropriate voltage level, inbuilt UPS or better
Installation site	Room temperature or air conditioned room

Warranty: 3 years

Optional Accessory:

Attenuated Total Reflectance	This is preferred if the ATR accessory can measure the film thickness, refractive index and reflectance or optical properties of liquid samples
Diamond ATR DRS Specular Reflection Accessory	

Other specifications:

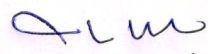
1. Instrument should be fully software controlled including fully automated changeover of sources, detectors & beam splitters.
2. Optics should be with high performance and must be coated with moisture repellent material.
3. Automatic real-time Atmospheric Vapour Compensation

4. Standard company made 15 ton Hydraulic Press, Agate Mortar Pestle, KBr (Spectroscopy grade) Die set, Magnetic Film sample holder, demountable liquid cell etc should also be given with instrument.
5. Printed catalogues & specification sheet along with tender Compliance Statement must be enclosed with the Offer.
6. Training on site by company engineers on complete FTIR system and accessories.
7. All technical specification should comply as per printed technical literature, Documents & specifications
8. Sealed quotations should be sent to **the Professor & Head, Department of Optoelectronics, University of Kerala, Kariavattom-695581, Trivandrum, Kerala.**
9. The price quoted should be inclusive of all taxes, duties, delivery, commissioning and other charges
10. The offers should be valid at least 90 days from the date of opening of the tender.
11. Delivery and installation should be made at the Department of Optoelectronics, University of Kerala, Kariavattom campus, Trivandrum without extra cost
12. Vendors should provide a compliance statement showing the items quoted with the tender specifications.
13. Vendors should provide a list of institutes showing installations of such instruments in India with contact numbers.

The firms who wish to supply the items are requested to submit the quotations in sealed cover to the undersigned on or before 07.08.2015.

14.07.2015




Professor & Head
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University of Kerala, Kariavattom
Thiruvananthapuram-695 581