



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076

Reference No. 2021-22/70 PR No. 1000020691 (Rfx No. 6100000924)

Detailed Technical Specifications for A pre-assembled Terahertz Time-Domain Spectrometer with additional THz optics and accessories to be pumped by ultrafast pulse laser of 780 nm

Mandatory requirements:

- 1. All items and specifications mentioned below are essential for the complete THz spectroscopy solution (for materials science research).**
- 2. The quoted system must fulfill ALL specifications. The quoted systems partially fulfilling specifications will not be accepted.**
- 3. All electrical appliances to be used in India (220 V, 50 Hz).**
- 4. Warranty: For at least one year from the date of delivery**
- 5. Installation: On-site without additional costs**

Detailed specifications:

1. The ultrafast laser at 780 nm for pumping will be provided by us. The pre-assembled spectrometer must have beam paths for the emitter and detector antennas aligned on an optical breadboard. Therefore, it must need only to couple the pump laser beam into the optical setup. All translation stages and the data acquisition system must be included. The controlling and data acquisition software must also be provided pre-loaded on a laptop. Laptop to be included in the package.
2. Pump laser specifications (Laser not included in this package, provided by us)
3. Spectrometers Pump wavelength: 780 nm, Pulse duration: ~ 100 fs, Repetition rate: 50 - 100 MHz, Average optical power: ~ 40 mW

A pre-assembled Terahertz Time-Domain Spectrometer with optical path antennas

Free space optical path antennas:

1. Bandwidth**: 0.05 - 4.5 THz
2. Dynamic range**: ≥ 85 dB

THz spectrometer accessories to be included in the package:

1. One additional set of optical path antennas
2. Sample holder Transmission: **1 unit**
3. Sample holder Reflection more: **1 unit**
4. Sample holder for attenuated total reflection (ATR): **1 unit**
5. Sample holder base: **1 unit**
6. THz compatible material cuvette for THz transmission measurements of liquids: **2 units**
7. Sample Holder for Fiber coupled antennas: **1 unit**
8. Set of two mounted aspheric TPX lenses with 1" diameter and 10 mm focal length for transmission measurements on small samples or for THz imaging: **1 set**
9. Manually operated, Theta-2-Theta angular scanning unit. The incidence angle θ of the Theta-2-Theta reflection unit is manually set. The reflection angle θ should be automatically set equal to the incidence angle θ (specular reflection): **1 unit**