

MOTHER TERESA WOMEN'S UNIVERSITY
KODAIKANAL

TENDER SPECIFICATION FOR CONFOCAL MICRO RAMAN SPECTROMETER

1	<p>Spectrometer :</p> <ol style="list-style-type: none"> 1. Focal Length: $\geq 20\text{cm}$ with high efficient, high throughput and fully automated Raman spectrometer coupled to 532nm and 785nm lasers. 2. Raman Range : $80 - 4000 \text{ cm}^{-1}$ 3. Appropriate edge filter for Rayleigh rejection to be provided. 4. Gratings: 600, 1200, 1800 and 2400 gr/mm gratings to be provided on a motorized turret with automated selection of gratings without the need for realignment. 5. Spectral Resolution: $< 1.5 \text{ cm}^{-1}$ for 532nm with 2400 gr/mm grating or better. 6. Interface : USB
2	<p>Laser :</p> <ol style="list-style-type: none"> 1. Wavelength and power: Air-cooled solid-state laser providing excitation wavelength 532nm with 100mW power or more. 2. Wavelength and power: Air-cooled laser diode providing excitation wavelength 785nm with 100mW power or more. 3. Filter wheel : Motorized computer controlled neutral density filters for variable laser power from 0.1% to 100%
3	<p>Confocal Microscope :</p> <ol style="list-style-type: none"> 1. Confocality: Upright research grade microscope with confocal pinhole. 2. Light Source: White light: reflected light illumination. 3. Objectives: 5X, 10X, 100X and 50XLWD objectives. Objective should be aligned to focus on the same spot. 4. Resolution: Spatial resolution better than $2 \mu\text{m}$ and laser spot size $\approx 1 \mu\text{m}$ for 100X objective.
4	<p>Detector :</p> <ol style="list-style-type: none"> 1. CCD-Peltier cooled multichannel CCD detector with suitable adaptors and electronic interface. 2. Cooling Temperature : $< -60^\circ\text{C}$ or better 3. Pixels : 1024x256 or better 4. Wavelength Range : 200-1050nm 5. Efficiency : Peak quantum efficiency $> 50\%$
5	<p>Power meter should be provided</p>
6	<p>Macro cuvette cell holder with quartz cell including lens of 40 mm focal length or better should be provided.</p>
5	<p>System Controller : A branded desktop PC with following minimum specification should be offered :</p> <p>Win10-64bits, i7-6700 processor, 16 GB RAM, 256 GB SSD + 2 TB SATA Hard Disk, Graphic Card NVIDIA GEFORCE 4 GB 27" LCD Monitor 3KVA UPS with 30 minutes backup</p>
6	<p>Software: Spectroscopic acquisition and data analysis software under windows environment, including spectrometer controls, multichannel data acquisition programs should be provided.</p>
7	<p>Warranty: Minimum three years from the date of installation with one year AMC.</p>
	<p>Other Terms and Conditions :</p> <ol style="list-style-type: none"> 1. System should be field upgradable with additional lasers of 638nm in the future (Optional). Wavelength and power laser: Air-cooled laser diode providing excitation wavelength 685nm with 30mW power or more (Optional). 2. System with Photoluminescence measurement setup is preferable. 3. 1.5 Ton AC should be provided 4. Suitable optical table should be supplied 5. Installation and Training must be included for each and every mode. 6. The vendor should have qualified technical service personnel available for servicing the equipment. 7. All Standard calibration samples should be provided and should show the specified resolution during installation. 8. Vendor should install this type of instrument in minimum 10 Institutions in India or 10 instruments in different Institutions in India.