

**NANOSCALE RESEARCH FACILITY (NRF)
INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI- 110016**

Date: Nov. 16, 2012

NOTICE INVITING QUOTATIONS

Ref: No. NRF/UV-LT-PL/2012

Due date: Dec. 17, 2012

Please send your quotations to the undersigned in a sealed cover super scribed with our Ref. no. & due date for the following items (UV low temp Photoluminescence system with multiple options).

S.No.	Name of item with full technical specifications	quantity
1	<p>UV low temp Photoluminescence system for semiconductor thin films and nanostructures:</p> <p>Excitations source: Xe-arc lamp (450 W) (ozone free, spectral range 300 nm - 1700 nm) along with external cw lasers such as 325 nm He-Cd laser (with variable output power: $\leq 5\text{mW}$ to $\geq 20\text{ mW}$) and 514 nm Argon laser (with variable output power: $\leq 5\text{mW}$ to $\geq 20\text{ mW}$), cw laser 785 nm (maximum output power: 100 mW); for lamp the excitation range must be continuously tunable within 200 nm – 950 nm.</p> <p>Laser spot size: $\leq 1\ \mu\text{m}$ Spectral range: 300-1000 nm Wavelength accuracy: $\pm 0.25\text{ nm}$ or better Monochromators: Two (one at source side other at detector side) double grating aberration corrected holographic grating (1800 gr/mm or better), wavelength range: from $\leq 200\text{ nm}$ to $\geq 1000\text{ nm}$, resolution 0.05 nm, focal length $\geq 500\text{ mm}$, motorized.</p> <p>Emission detector: TEC cooled ($\leq -70\text{ }^\circ\text{C}$) CCD detector, Pixel: 1024x256, pixel size: $26\ \mu\text{m} \times 26\ \mu\text{m}$, Spectral range: $\leq 200\text{ nm}$ to $\geq 1000\text{ nm}$, Quantum optical efficiency $\geq 50\%$ between 500 nm to 800 nm, dark noise $\leq 0.0025\text{ e-}/\text{pixel}/\text{sec}$.</p> <p>Electronics: Data acquisition system must have at least 16 bit DA/AD board with PCI interface, AD sampling $\geq 500\text{ kHz}$.</p> <p>Sample heating/cooling option: Sample temperature should be variable between 5 K to 300 K using closed cycle He cryostat with an set point accuracy of 1K and temperature stability of 0.1 K with a suitable temperature controller.</p> <p>Sample mapping: Sub-micron mapping of nanostructures (spatial resolution at least 250 nm). The system should able to do spectral mapping at least for 2 inch wafer. All the XYZ stages must be motorized with step resolution of 100 nm and computer controlled.</p> <p>Sample holders: Our samples will be semiconductors thin film or</p>	01

	<p>nanostructures, solid state samples (sample size at least 2 inch diameter and 1 mm thickness); also include cuvet cell holder.</p> <p>Software: i. Fully functional software for data acquisition and data analysis using a Windows based operating system (Windows XP or later versions).</p> <p>i. Scientific publication-quality graphics and layout capabilities should be available within the control and analysis software environment</p> <p>ii. Computer: Windows based operating system with flat panel Monitor (24 inch or larger), 500 GB HDD, CD/DVD writer, USB ports (8), should be able to export files to the clipboard or save as JPEG, PNG, BMP, TIFF etc.</p> <p>Power: 220-250 Vac 50 Hz</p>	
2	All the required accessories for confocal (10X, 20X and 100X) Raman measurements (both stokes and antistokes); spectral resolution $\leq 1 \text{ cm}^{-1}/\text{pixel}$ in UV and visible.	1
3	Desirable option: Attachment for coupling with Atomic Force Microscopy system should be quoted separately.	1

Quoted price should include all the calibration samples, all the accessories needed for the system, and all the necessary installation and training provided by the vendor. **PL mapping on a semiconductor material should be demonstrable.** A compliance chart is required for all the technical specifications mentioned above. **Users list:** Vendors should provide user list for the said item in India.

Warranty: (Required) On-site comprehensive including part replacement for 2 years. Additional warranty per annum may be quoted. This should be clearly shown in the technical as well as financial bid.

Terms and conditions covering submission of quotations

1. **DELIVERY:** All prices quoted for FOB
2. **TERMS OF PAYMENT:** Letter of credit
3. **VALIDITY OF QUOTATIONS:** **three months or more**
4. **CORRESPONDENCE:** No correspondence regarding acceptance /rejection of quotation will be entertained.
5. **SUBMISSION OF QUOTATIONS:** Separate quotations should be submitted for technical bid and commercial bid in two separate and clearly marked envelopes.
6. **DISCOUNTS/REBATES:** Special discounts/rebate wherever admissible keeping in the view that supplies are being made for an Educational institute may be indicated in the offer.

7. DIRECTOR'S RIGHT: Director, IIT Delhi reserves the right of acceptance or rejection of any or all quotations without assigning any reason.

Please specify terms and conditions. The quotations must have a validity of 3 months. Sealed quotations (separate technical and financial) may be send to the following address.

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Dr. R. Singh (Physics)