



# Indian Institute of Technology Kanpur

## Advanced Center for Materials Science

**Enq. No.: ACMS/ AU/ 2012-13/ E-4**

**Enquiry Dated: March 02, 2013**

**Closing Date: March 18<sup>th</sup>, 2013**

ACMS requires the quotation for **XRD with Curved Position Sensitive Detector**. The specifications for the equipment are in the addendum. The quotation should also include following attachments: **X-ray Cu tube** and **high temperature furnace**, and **standard samples for calibration**. The specifications for the equipment are in the addendum. The closing date for the above item is **March 18<sup>th</sup>, 2013**.

The prospective suppliers are required to send quotation in two parts in sealed envelopes, as “Technical Bid” and “Financial Bid”. The Technical Bid should contain detailed technical specification of the product being offered and should not mention any prices. The Financial Bid should include the detailed price quotation clearly including the cost of the equipment, taxes, service charges if any, shipping and handling charges. The two separate and sealed envelopes should be clearly marked appropriately as “Technical Bid” and “Financial Bid”.

Terms and Conditions:

1. Maximum education discount, if any should be offered
2. Validity of quotation should be at least for 60 days
3. Prices should be on CIF and FOB separately (if imported)
4. Prices should include the installation and training cost
5. Warranty should be for at least three years after installation
6. Normal payment terms for the Institute will be applicable (90% on delivery of the items and the remaining 10% after satisfactory installation/ inspection)
7. Quotation should carry proper certifications like agency certificate, proprietary certificate, etc.
8. An undertaking that the vendor will supply all the spares and services for the equipment for at least 5 years from the date of commissioning
9. Delivery must be within 6 months (updated March 7<sup>th</sup>, 2013)

Kindly send the Technical and Financial bids in sealed envelopes latest by 18<sup>th</sup> March 2013 by 5pm to:

**Dr. Anish Upadhyaya**  
**Head, Advanced Center for Materials Sciences**  
**IIT Kanpur, U.P. 208016, India.**  
**e-mail: [anishu@iitk.ac.in](mailto:anishu@iitk.ac.in)**

## Technical Specifications for XRD with CPS

<u>Specifications of XRD with Curved Position Detector*</u>	
X-Ray safety Cabinet	<ul style="list-style-type: none"> <li>• Front door opening</li> <li>• Lightening system inside the enclosure</li> <li>• Emergency stop pushbutton on front panel</li> <li>• External light Signal</li> </ul>
X-ray Generator	<ul style="list-style-type: none"> <li>• Power 3.5 kW</li> <li>• Max. Voltage: 60 kV</li> <li>• Max. Current: 60mA</li> <li>• Can work with 220 V and 50 Hz.</li> <li>• Connection pipe for the cooling system</li> <li>• Water flow management with safety</li> <li>• Window opening controlled by software</li> </ul>
X-ray tube	Long fine focus X-ray Cu tube (Include one spare X-ray Cu tube in the quotation)
Monochromator	Flat Germanium to strip $K\alpha_2$ from $K\alpha_1$
Goniometric System	<ul style="list-style-type: none"> <li>• Two Theta arm with CPS 120 holder</li> <li>• Tube shield holder with movements for alignment</li> <li>• Primary beam pipe with micrometric slits</li> </ul>
Calibration Sample	Standard powder for calibration
Sample holder	Reflection as well as transmission experiments can be possible.
Detectors	Focusing radius : 250 mm Useful angular aperture: 120°
PC Computer	<ul style="list-style-type: none"> <li>• Intel Core Duo processor or better</li> <li>• English Keyboard</li> <li>• 4 Gb of DDRAM minimum</li> <li>• HD 500 Gb minimum</li> <li>• DVD writer</li> <li>• 23" color display</li> <li>• Windows 7 Business, 64 bits edition</li> <li>• Laser Printer</li> </ul>
Software	<ul style="list-style-type: none"> <li>• Generator control</li> <li>• Voltage and current control</li> <li>• Power increase speed and preprogrammed power shut down</li> <li>• Real time diffractogram display</li> <li>• Files exportation to .CAL, .OUT, .TXT, .XLS, .XML, Jade, Gsas</li> <li>• Data processing : crystallite size, absorption correction</li> <li>• Phase quantification</li> <li>• Pattern matching</li> </ul>
Database	<ul style="list-style-type: none"> <li>• ICCD PDF2/PDF4 database (Optional)</li> <li>• AMCSDB, COD, IUCR mineral database (Optional)</li> </ul>
High Temperature Furnace	Work up to 1200°C (Include one additional furnace in the quotation)

## Technical Specifications for XRD with CPS

Water chiller	Cooling capacity: 3 kW
Power backup	Work with 220 V and 50 Hz. UPS is required as a power backup for electronics and chiller
Documentation	<ul style="list-style-type: none"> <li>• Two sets of operating manuals for the equipment and control system should be provided in hard copies</li> <li>• A soft copy of the above manuals should also be provided in a CD/DVD</li> </ul>
Safety Norms	<ul style="list-style-type: none"> <li>• The instrument should include safety devices for protection against vacuum, water , power etc</li> <li>• The instrument should be compliant with international norms for safety and environment</li> </ul>
Installation, Commissioning and Training	<ul style="list-style-type: none"> <li>• The delivery of the unit should be considered complete only after successful commissioning of the instrument</li> <li>• The pre-installation requirements should be communicated to IIT Kanpur well in advance of the installation</li> <li>• The Installation, commissioning and training should be done only by well trained factory engineers</li> <li>• The supplier should provide training to at least two candidates at the installation site to make them familiar with smooth operation of the instrument</li> </ul>
Guarantee	Preferably 3 years
After-sales Service	<ul style="list-style-type: none"> <li>• The supplier should provide a prompt after-sales service such as regular instrument maintenance, troubleshooting and fixing</li> <li>• The list of service centers in India should be included.</li> </ul>
Spares	<ul style="list-style-type: none"> <li>• List of standard spares to be provided for each year starting from 1st to 5th year along with cost and discounted rates</li> <li>• An undertaking that the vendor will supply all the spares and services for the equipment for at least 5 years from the date of commissioning</li> </ul>
Annual Maintenance Cost	Include the cost of annual maintenance for each year for five years after the guarantee/ warranty period. Provide the amount and the terms, Note that those providing better after sales service and support with written evidence will be given preference
<p><b>*Additional optional accessories should be indicated separately along with their price. The above specs are desirable and the actual numbers achievable for your system should be indicated.</b></p>	