



गुरु घासीदास विश्वविद्यालय

**GURU GHASIDAS VISHWAVIDYALAYA**

(A Central University established by the Central Universities Act, 2009, No.25 of 2009)

**KONI, BILASPUR-495 009 (C.G.) INDIA, कोनी बिलासपुर 495 009 (छठगढ) भारत**

Tel. - +91-7752- 260342, 260381 Fax - +91-7752- 260154, 260148, website - [www.ggu.ac.in](http://www.ggu.ac.in)

Ref. No.194/Store/EOI/2013 **NOTICE INVITING EXPRESSION OF INTEREST CUM BID** Bilaspur, Date-15.05.2013  
Guru Ghasidas Vishwavidyalaya, Bilaspur (A Central University) invites Expression of Interest (EOI) from reputed Original Equipment Manufacturing Company or their authorized partners/agents/distributors to supply of various laboratory equipment/instruments/accessories/Computers/Software to Department of Pure & Applied Physics and submit bids in two parts (Part A – Technical and Part B – Financial) for supply, installation & commissioning of the items listed in Schedule-I in EOI cum Bid document. EOI fee of Rs.2,000/- by Demand Draft drawn in favour of “Registrar, Guru Ghasidas Vishwavidyalaya” payable at Bilaspur (C.G.) to be submitted along with EOI. Envelope should be addressed to the Assistant Registrar (Stores), Guru Ghasidas Vishwavidyalaya, Bilaspur and should reach on or before 1500 hrs, 11.06.2013. Received EOIs will be opened on 11.06.2013, 1600 hrs at the above address in the presence of bidders or their representatives. EOIs received after due date & time will not be considered. For more details please log on to [www.ggu.ac.in](http://www.ggu.ac.in).  
Registrar



# गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ0ग0)

Website: [www.ggu.ac.in](http://www.ggu.ac.in) Phone: 07752-260342, 260381 FAX: 07752-260154, 260148

Ref. No. 194 /Store/EOI/2013

Bilaspur, Date- 15.05.2013

## **NOTICE INVITING EXPRESSION OF INTEREST CUM BID**

Guru Ghasidas Vishwavidyalaya, Bilaspur (A Central University) invites Expression of Interest (EOI) from reputed Original Equipment Manufacturing Company or their authorized partners/agents/distributors to supply of various laboratory equipment/instruments/accessories/Computers/Software to Department of Pure & Applied Physics and submit bids in two parts (Part A – Technical and Part B – Financial) for supply, installation & commissioning of the items listed in Schedule-I in EOI cum Bid document. EOI fee of Rs.2,000/- by Demand Draft drawn in favour of “Registrar, Guru Ghasidas Vishwavidyalaya” payable at Bilaspur (C.G.) to be submitted along with EOI.

1. Bids in two parts (Part A – Technical and Part B – Financial) for supply, installation & commissioning of the items listed in **Schedule-I** in EOI cum Bid notice can be submitted to Assistant Registrar (Stores), Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) by Speed post/Registered post/Courier by 11.06.2013 (03.00 p.m.) superscribed the envelope “BID FOR ITEM NO..... EOI No. ....”.
2. Technical Bids will be opened on 11.06.2013 at 4.00PM at Conference Hall, Administrative Block, Guru Ghasidas Vishwavidyalaya, Bilaspur.
3. Date of opening financial bids will be intimate later on at the university website [www.ggu.ac.in](http://www.ggu.ac.in)
4. **Two Bid System:** Vendor will place the “Technical Bid” and “Financial Bid” in the separate sealed covers. Thereafter, both the envelopes should be placed in a big envelope duly sealed and superscribed “BID FOR ITEM NO.....,.....,.....EOI No. ....”.

The University is not responsible for non receipt of tenders within the specified date and time due to any reason including postal holidays or delays.

**Envelope I (Technical Bid):** The vendor must submit the following documents in Envelope-I (Technical Bid):

- a) Bidder Profile
- b) Detailed technical specifications and literature/manuals of the goods/services to be supplied.
- c) Technical compliance statement with deviation, if any
- d) Authorized partner/dealer/distributor certificate from the original manufacturer.

### **Envelope II (Financial Bid):**

The vendor must submit the Price Bid information mentioning all taxes/duties FOR University campus, Bilaspur. The price should be quoted in words and in figures, without any errors, erasures or alterations. Unit price of each product and accessories should be quoted separately. Maximum educational discount for University as could be offered should also be mentioned.

5. **Offer validity period :** The offer should hold good for a period of 120 days from the closing date of the tender. Any offer falling short of the validity period is liable for rejection.

6. **Performance Guarantee:** Performance Security for an amount of 5% of the order value may be furnished in the form of an Account payee Demand Draft, Fixed Deposit Receipt from a Commercial bank or Bank Guarantee from a Commercial bank in an acceptable form by the successful bidder. Performance Guarantee is to be furnished within 21 days after notification of the award and it should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the vendor, including warranty obligations.
7. The Cost of the equipment should be inclusive of all taxes and statutory levies. Labour / installation charges, packing, insurance, freight etc. should be mentioned separately (inclusive of all taxes liveable on them). For imported goods price to be quoted CIF Kolkata and in case of local firms they should quote FOR Guru Ghasidas University Campus, Bilaspur. Unit price of each product and accessories should be quoted separately. Maximum educational discount for University as could be offered should also be mentioned. The University is **exempted from payment of custom and excise duty** on Scientific and technical equipment/instruments by DSIR, Govt. of India. Necessary certificate will be issued on demand.
8. University reserves the right to carry out a technical inspection and performance evaluation (benchmarking) of the offers made by shortlisted vendors. The shortlisted vendors may be asked to come and give out presentation / demonstration.
9. **No commitment to accept lowest or any bid:** University shall be under no obligation to accept the lowest or any other offer received in response to this tender notice and shall be entitled to reject any or all offers including those received late or incomplete offers without assigning any reason what so ever. University reserves the right to make any changes in the terms and conditions of the bid. University will not be obliged to meet and have discussion with any vendor, and or to listen to any representations.
10. **Shortlisting of Vendors:** University will create a shortlist technically qualifying vendors and the financial bid of only these vendors will be opened. University reserves the right to decide whether the items being quoted are as per the requirement of the University and are of standard/leading brands in the market. University reserves the right to decide which offer best suits the requirement of the university. Further, after opening financial bids of the short listed tenders, if there is a discrepancy between word and figure, the amount indicated in words will prevail.
11. **Warranty:** The vendor shall provide comprehensive on-site Warranty for the system/equipment supplied against the work order for a min. period of 1 year from the date of installation and commissioning of the system/equipment. This would cover the hardware, hardware components, system software, equipment and accessories supplied by the vendor at the place of installation.
12. **Delivery period:** For imported goods the complete delivery, installation & commissioning of both the equipments/instruments should be made within 12 weeks from the date of issue of order. For indigenous goods it is 8 weeks.
13. **Resolution of disputes:** University and the vendor shall make every effort to resolve amicably, by direct informal negotiations, any disagreement or dispute arising between them under or in connection with the contract. If after thirty days from the commencement of such informal negotiations, University and the vendor have been unable to resolve amicably a resolution by

formal arbitration the Vice-Chancellor of University shall appoint a sole Arbitrator of the dispute who will not be related to the vendor and whose decision shall be final and binding.

14. **Jurisdiction** : All disputes will be subject to Bilaspur jurisdiction only.
15. **Custom Clearing**: After arrival of the goods at Kolkata Airport/Seaport, Indian agent or Indian subsidiary of the principal firm is solely responsible for getting the material clearance from customs. University will provide all custom documents for custom clearance on the demand of agent. Transportation from Kolkata to Guru Ghasidas University campus is also the responsibility of authorized agent. All charges/ expenses incurred in this process will be reimbursed to firm after submitting the bill along with documentary proof in original. Please note that the freight forwarder or clearing agent should be approved from IATA . **NO DEMURRAGE / WHARFAGE CHARGES WILL BE PAYABLE BY THE UNIVERSITY UNDER ANY CIRCUMSTANCES. NO ADVANCE PAYMENT WILL BE PAYABLE FOR CUSTOM CLERANCE/ FREIGHT / INSURANCE ETC.** However the University can also appoint Custom Clearing Agent if required.
16. The vendor should adhere with all seriousness to the time schedule provided by the University. The **Liquidated Damage** will be applicable at the rate of **0.5%** per week. The purchaser has the right to cancel the purchase order when LD accumulates to 10 %.
17. The quantity indicated in the **Schedule-I** is tentative. University reserves the right to increase or decrease the quantity or delete some or all of items depending on the needs of the University without assigning any reasons.
18. The bids will be opened on due date and time indicated in presence of the bidders if any present on the occasion, if the date of the opening is declared holiday the bids will be opened on next working day.
19. For imported goods, the payment will be made through Letter of Credit. No advance payment will be made. Payment will be made after the receipt, inspection and installation/testing of the goods.
20. University reserves the rights of accepting in full or part/not accepting the tenders without assigning any reason.
21. Any addition/deletion/modification of this tender made before the due date of the tender will be displayed in university website only.

Registrar (Acting)

## Bidder profile (Technical)

Sr. No	Details	
1.	Name of the Firm	
2.	EOI Fee Details Name of Bank Amount Date	
3.	Registered Office address Telephone Number Fax Number e-mail	
4.	Correspondence/ contact address	
5.	Details of Contact person (Name, designation, address etc.) Telephone Number Fax Number e-mail	
6.	Is the firm a registered company? If yes, submit Documentary proof. Year and Place of the establishment of the Company	
7.	Bidder's Bank Details Name of Bank A/c No. IFS Code	
8.	Is the firm <input type="checkbox"/> Government/ Public Sector Undertaking propriety firm <input type="checkbox"/> partnership firm (if yes, give partnership deed) <input type="checkbox"/> limited company or limited corporation <input type="checkbox"/> member of a group of companies (if yes, give name and address, and description of other companies) <input type="checkbox"/> subsidiary of a large corporation (if yes give the name and address of the parent organization) If the company is subsidiary, state what involvement if any, will the parent company have in the project.	

9.	Is the firm registered with sales tax department? If yes, submit valid sales tax registration certificate.	
10.	Is the firm registered for service tax with Service Tax department? If yes, Submit valid service tax registration certificate.	
11.	What type best describes your firm? · Manufacturer · Supplier · System Integrator · Consultant · Service Provider (pl. specify details) others	
12.	Details of Empanelment Certificate/Purchase Order of any 3 PSUs / Govt. institutions, enclosed 1)	
	2)	
	3)	
13.	Have you ever been denied tendering facilities by any Government/ Department/ Public sector Undertaking? (Give details)	

**Financial Information Summary**

S. NO	Name of the Bidder	Turn Over ( Rs. Crores) Total of 3 Financial Years			Average Turn Over for three years
		2010-11	2011-12	2012-13	

**Note : Please enclose certificate issued by CA in this regard.**

Seal & Signature of Bidder

## DECLARATION

1. I, ----- Son /Daughter of Shri -----  
----- Proprietor/ Partner/ Director/ Authorised Signatory of M/s. -----  
----- am competent to sign this declaration and execute  
this EOI document.
2. I have carefully read and understood all the terms and conditions of the EOI and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief.
4. I/ we/ am are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my bid at any stage besides liabilities towards prosecution under appropriate law.
5. Our firm is neither blacklisted by any Government Department nor any Criminal Case is registered against the firm or its owner or partners or directors anywhere in India.

Signature of the Authorised Person

Date : -----

Full Name : -----

Place : -----

Company Seal : -----

Mobile No.- -----

Note : 1. The above declaration, duly signed and sealed by the authorised signatory of the firm/company, should be enclosed with the EOI document.

**2. Certificate as per above must be submitted only on non-judicial stamp paper of suitable amount.**

**Financial Bid**

For Indigenous Items

Item No.	Name of Instruments & Specification	Unit Price	CST/VAT/Tax if any,	Total Unit Price

For Foreign Items, If coated

Item No.	Name of Instruments & Specification	Name of Manufacturer	Unit Price	CST/VAT/Tax if any,	Total Unit Price CIP/DDU/CIF/FOR Kolkata/Mumbai/Delhi/Bilaspur Price

Other terms &amp; Conditions required should also be enclosed with the bid.



## Schedule: I

**Please quote rates for apparatus separately or in a list for the following items:**

<b>Accelerator Facility</b>		
<b>Item No.</b>	<b>Instrument with Specification</b>	<b>Qty.</b>
1.	<p>Sulphur Hexafluoride (SF<sub>6</sub>) gas of 750 Kg weight with minimum 99.99% purity. Gas to be supplied in sealed cylinders of approximate weigh 50 Kg each</p> <ul style="list-style-type: none"><li>a. SF<sub>6</sub> gas should be originally filled at the manufacturers' site in cylinders of 50 Kilograms (approximately) capacity with proper manufacturer's sealing / stamping. Sealing should be of leak tight metallic plug with lead stamping. Any transfer of gas in specified cylinders at other than manufacturers' site will not be acceptable.</li><li>b. Cylinder valves should have CGA 590 end connection. Cylinder valve should have hand wheel for operation. Cylinder should have valve safety cover.</li><li>c. Data sheet / manufacturer certificate containing the specification and impurity level (in ppm) of cylinder contents to be submitted.</li><li>d. Purity of SF<sub>6</sub> should be at least 99.99%</li><li>e. The cylinder should conform to DOT-3AA-2015 specification</li><li>f. Make of cylinders and valves should be approved by Chief Controller Explosive / Petroleum and Explosive Safety Organization, India. Test and manufacturers certificates of Cylinders and valves should be supplied. It is responsibility of the bidder to get the CCE / PESO approval for import of cylinders and valves before shipping of same.</li><li>g. Year of manufacture of cylinders should not be earlier than 2012.</li><li>h. The vender should provide the origin of the manufacturer along with the manufacturer</li></ul>	01

	<p>certificate for the purity of gas.</p> <p>i. The vender should provide list of at least three clients for which SF6 is supplied for use in accelerator including at least one for a Pelletron greater than 3 MV to which the supply has been made in last three years.</p>	
2.	High strength steel Argon gas bottle (seamless) with regulator (one atmosphere pressure) and 1/4'' tube fitting, 2 and 3 litre	04 Nos. each
3.	High strength steel Nitrogen gas bottle (seamless) with regulator and 1/4'' tube fitting for beamline venting and to fill stripper gas supply bottle, 2 and 3 litre	04 Nos. each
4.	High strength steel Helium gas bottles (seamless) with regulators and 1/4'' tube outlet fittings for gas bottle filling, 2 and 3 litre	04 Nos. each
5.	High strength steel Hydrogen gas bottles (seamless) with regulators and 1/4'' tube outlet fittings for gas bottle filling, 2 and 3 litre	04 Nos. each
6.	High strength steel Oxygen gas bottles (seamless) with regulator and 1/4'' tube fitting, 2 and 3 litre	04 Nos. each
<b>Cabling for Radiation Monitors</b>		
7.	RG58/U braiding with 95% shielding PE insulator max operating voltage 1400V RMS, length 500 m	01
8.	Instrumentation cable with 6 conductors and foil shielding suitable for EIA RS-232 application , length 500 m	01
9.	BNC bulkhead RG58 connectors gold plated centre-pin	25
10.	BNC plug RG58 connectors gold plated centre-pin	25
11.	BNC RG58 50 ohm terminators	10
12.	<p>9 pin D connectors</p> <p>(MALE PINS) metal shell with solder bucket</p> <p>(FEMALE PINS) metal shell with solder bucket</p> <p>(MALE SOCKET) metal shell with solder bucket</p> <p>(FEMALE SOCKET) metal shell with solder bucket</p> <p>Plastic cover for above</p>	<p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>25</p>
13.	<p><b>Compressed Air System:</b></p> <p>(a) Needed for the pneumatic control system of the accelerator (3 MV particle accelerators) that requires intermittent supply of compressed air for actuation of valves.</p>	01

	<p>(b) Compressed air system with integrated dryer and line filter is required. The specifications are given below</p> <ol style="list-style-type: none"> <li>1. It should have working pressure of 80 psig (5-6 bar)</li> <li>2. Average flow rate should have 2 cubic meter/hours.</li> <li>3. <b>Filter:</b> <ol style="list-style-type: none"> <li>i) Capable of remaining particulate matter of size higher than one micron.</li> <li>ii) Oil contain should be less than 1 ppm.</li> <li>iii) Filter should have maximum allowed dew point of +5 °C to remove moisture.</li> </ol> </li> <li>4. System will include backup tank.</li> <li>5. Compressed air distribution using SS pipe for connecting to the existing distribution system at site.</li> </ol> <p>(c) A buffer storage tank is provided to avoid fluctuation during operation of pneumatic systems.</p> <p>(d) Built-in air and oil filters and a separate external Oil filter is incorporated for cleaner air.</p> <p>(e) It should have a shutoff valve.</p>	
14.	<p><b>Oxygen deficiency monitor with remote sensor</b></p> <p>Series 1000 Oxygen Deficiency Monitor with remote sensor</p> <p><b>Specifications</b></p> <p>Measurement Range: 0-30% Oxygen</p> <p>Accuracy: ±1% of full scale</p> <p>Sensor Type: Extended Life Ambient Temperature Electrochemical Type</p> <p>Temperature &amp; Pressure Compensation: Standard</p> <p>Response Time: 90% of full scale response in less than 12 seconds</p> <p>Sensor Inputs: One</p> <p>Product Warranty: Three years-includes both sensor and electronics</p> <p>Sensor Mounting: Either in the electronics enclosure or</p>	01

	<p>remotely</p> <p>Display: 10.2 mm (0.4") high, 4-1/2 digit liquid crystal display. Resolution 0.1% O2</p> <p>Input Power: 110/230VAC, 50-60Hz or 18-32VDC. Battery backup is optional</p> <p>Standard Outputs: 4-20mADC and 0-2VDC</p> <p>Optional Outputs: RS-232C or RS-485</p> <p>Audible Alarm: Internal buzzer (100 dB).</p> <p>Audible Alarm Cancel: Front panel.</p> <p>Oxygen Alarm Relays: Three (3) SPDT Form C contacts rated 10 A @30VDC/110/220VAC. Alarm clearing is user selectable for either manual or automatic.</p> <p>Instrument Status Alarm: 1 SPDT Form C rated identical to above.</p> <p>Operating Temperature: 5° to 38°C (40° to 100°F).</p> <p>Optional Remote Sensor</p>	
15.	<p><b>Vacuum Leak Detector (Helium leak detector)</b></p> <p>Helium leak detectors for helium leak detection in maintenance applications having compact size. It should be associated with integrated memory card for data recording and security features to prevent unauthorized changes from being made to the settings. The data recording should function on the remote control via USB interface with user-friendly data logger, maintenance-free.</p> <p><b>Minimum detectable leak rate:</b>  Vacuum mode - <math>5 \times 10^{-12}</math> mbar l/s  Sniffer mode - <math>1 \times 10^{-7}</math> mbar. l/s</p> <p><b>Detectable gas:</b> <math>^4\text{He}</math></p> <p><b>Leak rate display range:</b> <math>10^{-12}</math> – 0.1 mbar l/s</p> <p><b>Ready to operation time:</b> <math>\leq 3</math> minutes</p> <p><b>Response time:</b> <math>&lt; 1</math> Second</p> <p><b>Test port:</b> DN 25 ISO-KF</p> <p><b>Mass spectrometer:</b> High resolution <math>180^0</math> magnetic deflection.</p> <p><b>Leak test mode:</b> Gross/counter flow, Normal and</p>	01

	<p>Sniffer test mode</p> <p><b>Calibration:</b> Automatic calibration</p> <p><b>Maximum inlet test pressure:</b> =&gt;10 mbar</p> <p><b>Backing and Roughing pump:</b> Rotary vane pump, Pumping speed: = &gt; 10 m<sup>3</sup> / hr.</p> <p><b>High vacuum pumping system:</b> Vacuum system should be comprised of Air-cooled turbo molecular pump and Backing pump/roughing pump along with necessary gauges and valves.</p> <p><b>Operation:</b> Microprocessor based control system with auto calibration and auto ranging.</p> <p><b>Control Display panel:</b> Alphanumeric indication of leak rates on LCD display</p> <p><b>Ambient operation temperature:</b> +15 - +35 °C</p> <p><b>Remote unit:</b> MSLD should be comprised with remote control unit</p> <p><b>Output:</b> Inlet pressure display, Alphanumeric Helium leak rate signal display</p> <p><b>Input Power:</b> 230 VAC, 50 Hz , Single Phase</p> <p><b>Weight with CART:</b> = &lt; 110Kg</p> <p><b>Remote control unit with:</b> 5 meter cable or wireless</p> <p><b>Sniffer probe:</b> 5 meter</p> <p><b>Mass spectrometer leak detector:</b> Inbuilt Portable or Mobile</p> <p><b>Accessories for leak detector:</b></p> <p>A. Helium calibrated standard leak with helium reservoir and valve,</p> <p>i. Leak rate range of: 1 X 10<sup>-8</sup> mbar l/s, connecting flange: DN 25 ISO-KF 01</p> <p>ii. Leak Rate range of 1 x 10<sup>-4</sup> mbar l/s, connecting flange: DN 25 ISO-KF 01</p> <p>B. Spare Electronics circuit boards for detector. 01</p> <p>C. Filaments for mass spectrometer. 05</p>	
<b>Area Radiation Monitors</b>		
16	<p>Area gamma monitor with internal GM tube, along with optional accessories</p> <p>Sensitivity: better than 100 cpm/microRem/hr, upper range 10mR/hr, logarithmic remote analog output, remote display and remote alarm relay contact, power supply for operating from AC mains (220V).</p>	02
17.	<p>X-ray area monitor</p> <p>Sensitive to low-energy (5keV – 200 keV) X-rays, sensitivity better than 1 microRem/hr, readout and alarm, AC mains operations (220V)</p>	02

18.	Wall mountable neutron radiation detector Sensitivity: better than 100 cpm/milliRem/hr, energy range: thermal to fast neutrons, remote display and alarm, power supply for operating from AC mains (220V).	02
19.	Scientific Linux OS based internet connectivity with firewall protection (ETHERNET 10/100base T)	01
20	<b>Alignment Equipment</b>  a. Adjustable transiting or theodolite of at least 5 sec level precision and a 10 sec horizontal precision or better for alignment (bubble sensitivity of 10 sec per division or better)  b. Three plumb lines  c. Precision level (at least 10 sec level precision)  d. Hammer drill with 3/8" bit for concrete anchor bolts	02  02  02  05
21.	Toolbox consisting of the following: Screwdrivers, Pliers, Wire strippers, Side cutters, Crimpers, Soldering iron (40 Watt) with solder, Hammer and rubber mallet, Flashlight, Small inspection mirror Hex wrenches (0.05" to 3/8" sizes) Box-end/open-end wrenches from 1/4" to 1" (two each)	02
22.	Distilled water unit for chiller (250 liter) 5 lt/hr capacity	01
23.	Vacuum Cleaner	02
26.	a. Hydraulic Hand Pallet Truck, Capacity-5000 Kgs, Including all complete as a working unit.  b. Spare O-ring/gasket/repair kit  <b>Specifications</b> Capacity-5000 Kgs, Overall width × length – 685 × 1650 mm, Height Lowered/Lifted- 130 × 252 mm, steel load roller / wheel. 4-nos articulating rear wheels, 2 nos-front wheel. Hydraulic lifting system with hard chrome plated ram and piston. Oil charged. No oil leakage. Overload safety, etc	02  02
27.	a. Hydraulic Hand Pallet Truck, Capacity-3000 Kgs,  b. Spare O-ring/gasket/repair kit  <b>Specifications</b> Capacity-3000 Kgs, Fork width × length – 685 × 1220 mm, Height Lowered/Lifted- 85 × 200 mm, Load roller / wheel – Polyutherene, Hard chrome plated ram and piston, No Oil Leakage, Shall have overload valve.	02  02

<b>Department Purchase:</b>		
		No. of units
28	Magnetic Stirrer ( temperature up to 400 °C) with magnetic bar of various sizes	04
29	Agate Mortar (diameter ~ 6 inches) pestle	04
30	Diamond Saw Cutter: low speed diamond saw, which equips with advanced digital micrometer and digital speed display controller, for cutting/dicing/slicing all kinds of materials up to 25 mm thickness, especially for brittle crystals, ceramics, TEM samples, and even plastic samples. The cutting width of the slice should be controllable from 1mm ~ 24mm. Optional blades and accessories included. RPM 0-600	01
31	Sample holder for dielectric measurement (temperature range: LN <sub>2</sub> to 800 °C) with temperature controller ( $\pm 1^{\circ}\text{C}$ ) and RS-232 interface cable and software for data acquisition.	01
32	De-ionized Water plant , capacity 5 lt/hr	01
33	Chiller plant, storage capacity 15 Lts, cooling capacity 1000 Kcal/hr, FLA 6 A.	01
34	De-humidifier, 1.5 Ton capacity	02
35	Humidifier and temperature sensor	01
36	Hydraulic Press (15 ton)	01
37	500 litre Liquid N <sub>2</sub> Dewar with pressure build up	01
38	Liquid nitrogen withdrawal device from Dewar	02
39	Trolley for liquid nitrogen container transport (various sizes) for 500 Lts, 50 Lts. and 10 Lts. Dewars transport	01 each
40	Optimized Energy dispersive spectroscopy (EDS) and wavelength dispersive spectrometry for microstructural analysis of both rough and polished specimens to be attached with Carl Zeiss EVO SEM model	01
41	Low temperature setup for optical and electrical measurement (closed cycled cryostat for electrical experiments for temperature 10K - 325K with following components) Specification Cryocooler with welded instrumentation skirt Helium compressor Helium hoses, 1 set	01

	Vacuum shroud, optical Radiation shield Instrumentation for temperature control. One sensor and one heater ( with temperature control $\pm 0.1$ K) Installation kit and technical manuals Si – diode sensor Wiring for transport experiment 10 pin hermetic feed through (3) Windows for optical experiments Sample holder for optical and electrical experiments Vacuum pumping system	
42	<b>Optical microscope</b> polarization microscope White light LED illumination for incident and transmitted light applications. Vertical stage adjustment Revolving nosepiece 5 fixed mounts Stage or higher, Mechanical stage Condenser Binocular, Digital camera for imaging MAG : 100 x	01
43	LN2 plant , 20 L/hr capacity	01
44	System integration with 24 nodes. Each node having think client, 18” TFT monitor, key board, optical mouse, multimedia head phones with microphone and web camera (Video Calling: 1280 x 720 pixels, HD software, with USB connection) to be integrated with HP Proliant DL 585 Gen 7 server using 24 port Gbps switch	01
45	Hot plate , upto 200 <sup>0</sup> C/300 <sup>0</sup> C/400 <sup>0</sup> C/500 <sup>0</sup> C, with increment of 10 <sup>0</sup> C /20 <sup>0</sup> C, with square plate	04
46	Softwares VASP VASP View	01
<b>Project Items</b>		
47	DC Power Supply for poling the Ceramic Material Maximum poling field 10 kV/mm thickness with oil bath to pole samples up to 300 <sup>0</sup> C. Facility to vary the poling field. (To be purchased from UGC Project F. No. 41 – 884 / 2012 (SR))	01
48	Autoclave (Hydro Thermal Synthesis Reactor) for synthesizing nanoparticles through hydrothermal process. (To be purchased from UGC Project F. No. 41 – 884 / 2012 (SR))(20 ltr capacity)	01



49	Impedance Analyser, mHz to MHz (To be purchased from UGC Project No. 41 – 954 / 2012 (SR))	01
50	High Performance Computer Work Station (To be purchased from UGC Project F. No. 41 – 1009/ 2012 (SR)) <b>A. Intel Xeon E-3 processor based workstation</b>  CPU: Intel Xeon E3-1240/1245, 3.3 GHz, 8 MB L3 Cache Chipset & Motherboard: Intel C-206 Chipset on Intel/OEM motherboard Memory: 16 GB ( 2 X 8GB) Hard Disk Drive: 320 GB SATA Storage controller: Integrated 4 channel serial ATA controller with RAID Graphic Card: 512 NIVIDA Quadro 400, 512 MB or ATP Firepro V2270 Keyboard: Standard Mouse: Optical PCI Slots: 4PCI/PCI Express Bays: Total 4 bays with minimum 2 internal and 1 external Ports: 6 USB 2.0, rJ-45, audio in, audio out, mic. In Cabinet: Mini tower Optical Drive: 8 X DVD writer Networking features: Integrated 10/100/1000 Operating system: MS Windows 7 professional 64 bit OS Certifications: red hat or suse or ubuntu Linux Safety specifications: FCC for EMI and UL for safety Power Supply: 230 +/- 10% single phase, 50 Hz AC Power management: ACPI Bundle software: System health monitoring tool Security: Integrated panel lock or pad lock <b>B. Additional add on item for workstation</b> Hard Disk: 1000 GB	01
51	<b>Under UGC-SAP</b> High temperature vacuum tube furnace with MoSiO <sub>2</sub> Heating elements (75x150-200mm) body covered by S:S with rotary pump, gas control panel with gas flow control and RS-232 interface, temperature controller with ±0.1C accuracy	01
52	Au sputter coater with gold target and vacuum pump, 220 V, 50/60 Hz for SEM sample coating	
53	Single Vessel Dip Coating System (The Department is ready to accept the buy back offer as it has a unit of Model No. Xdip-SV1)	01

**Head, Department of Pure & Applied Physics**