भारतीय प्रौद्योगिकी संस्थान पालक्काड
Indian Institute of Technology Palakkad
अहलिआ एकीकृत कैम्पस, कोज़्हिपारा
Ahalia Integrated Campus, Kozhipara
पालक्काड- 678557
Palakkad – 678 557

दूरभाषसंख्या/ Phone no:
04923 – 226300/590/586

ईमेल/ Email :
purchase@iitpkd.ac.in

Prof. Job Kurian
Registrar i/c

Ref : DC Power Supply/IIT Palakkad
Date: 14.09.2017

Open Tender No: IITPKD/ELE/030/2017

Due Date: 05.10.2017@ 3.30PM

Dear Sir/Madam,

On behalf of the **Indian Institute of Technology, Temporary campus, Palakkad, Quotations are invited for "Supply, Installation and Commissioning of DC Power Supply at IIT Palakkad Transit Campus**. The Specifications are given in the Annexure.

Instructions to the Bidder

(i) **Preparation of Bids:** - The tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid in separate envelopes. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in the technical bid. Financial bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover. Technical bids must either be spiral boud/ Stapled together. No loose sheets will be accepted. All pages must be numbered.

(ii) **Delivery of the tender:** - The tender shall be sent to the below-mentioned address either by post or by courier so as to reach this office before the due date and time specified in the Schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule. The tender box is kept in the office of the "Academic Block, IIT Palakkad, Ahalia Integrated Campus, Kozhipara, and Palakkad-678 557.

(iii) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. In respect of opening of financial bid, those bidders who are technically qualified only will be called for.

(iv) **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges indicated separately for each item. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated.

The price should be quoted without custom duty, the custom duty will be paid at concessional rate against duty exemption certificate.

In case of import supply, the price should be quoted on EX-WORKS/CIP basis indicating the mode of shipment.

(v) **Agency Commission**: - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.

(vi) **Terms of Delivery**: - The Item Should be supplied to our institute as per purchase order. In case import supply, the items should be delivered at the cost of supplier to our institution. The Installation and commissioning should be completed as specified in our important conditions.

(vii) IIT Palakkad reserves the full right to accept / reject any tender at stage without assigning any reason.

Yours sincerely,

Registrar, I.I.T. Palakkad

SCHEDULE

Important Conditions:

1. The due date for the submission of the tender is **05.10.2017 at 3.30 PM**

2. The offers / bids should be submitted in two bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Open Tender for "**Supply, Installation and Commissioning of DC Power Supply at IIT Palakkad Transit Campus**" should be written on the left side of the Outer bigger cover and sealed.

3. **EMD: - EMD should be at 2% (two percent) of the tender value quoted by the bidder**. The
   EMD should be enclosed with the financial bid which will not be opened for Technical evaluation. Enclosing the EMD in the Technical bid will automatically disqualify the tenderer. EMD should be in the form of DD in favour of "**Indian Institute of Technology Palakkad" and payable at Palakkad.** The tender without EMD would be considered as UNRESPONSIVE and REJECTED. Photo/FAX copies of the Demand Draft/Banker's pay orders will not be accepted. No interest will be paid for the EMD and the EMD (Bid Security) will be refunded to the successful bidder on receipt of Performance Security.

4. **Performance Security:-** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD or FD Receipt from the commercial bank or Bank Guarantee from any nationalized bank of India.

   Only after submission of Performance Security, Purchase Order/Work Order will be released / L.C will be opened.

   Performance Security in the form of Bank Guarantee:- Incase, the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.

   The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

5. If an Indian agent is involved, the following documents must be enclosed:
   Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
   - ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
   - ✓ The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.

6. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.

7. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.

8. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.

9. **Validity:** Validity of Quotation not less than 90 days from the due date of tender.

10. **Delivery Schedule**:- The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

11. **Loading and unloading charges will be borne by the supplier**.

12. **Risk Purchase Clause**:- In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.

13. **Payment**:- No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).

14. **Advance Payment:-** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through

the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.

15. **On-site Installation**: - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the **item at site of IIT Palakkad.**

16. **Warranty/Guarantee**: - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).

17. **Late offer**: - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.

18. **Acceptance and Rejection**: - I.I.T. Palakkad has the right to accept the whole or any part of the Tender or portion of the quantity offered or rejects it in full without assigning any reason.

19. **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

20. **Disputes and Jurisdiction**: - Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

21. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

Acknowledgement:- It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

SIGNATURE OF TENDERER
ALONG WITH SEAL OF THE
COMPANY WITH DATE

This tender deals with the following two main items:

A. Supply of DC power supply, related instrumentation and accessories as per the plans provided in this document.
B. Installation and commissioning of DC power supply.

1.	**TECHNICAL SPECIFICATION**
1.1	**Input / Output Rating**
a.	**Output Side**
i	DC output power rating: 45 kW
ii	Output voltage : 220 Volts DC nominal The setting of the output DC bus voltage shall be adjustable between -10% to +10% of nominal rated voltage
iii	Load current (rated) : 205 A DC
iv	Maximum continuous load of 205 A with instantaneous overload of 40%.
v	Efficiency of at least 85% at full load
vi	Voltage Regulation : (a) D.C. output voltage shall be stabilised within 1% of the set D.C. bus voltage for AC input voltage variation within 380-445 V, frequency variation of ±5% and DC load variation from 0 – 100%. (b) The voltage regulation shall be achieved by a constant voltage regulator having a fast response control of at most 100 milliseconds for 50% step change in output load.
vii	Ripple content: Within 5% of DC output nominal voltage
b.	**Input Side**
i	Supply voltage 380-445 V AC 3-phase
ii	Input power factor >0.98
iii	Input current total harmonic distortion (THD) at half the rated load **must be less than**6%
1.2	**Type**
a.	Static fully controlled bidirectional power converter
b.	Transformer type: Full isolation, inbuilt, dry type, double wound
2.	**Features**
2.1 a. b.	**Operating Environmental conditions** Working temperature range : 10 – 60 ^{o}C (cooling needs to be inbuilt as air conditioning will not be provided) Relative humidity: 0 – 95% non – condensing
2.2	**Communication** USB with appropriate GUI based software compatible with windows operating system
2.3	**Display** LCD display on front panel showing system IGBT heat sink temperature, input power (AC) and output power (DC)
3.	**D.C. Power Supply Construction**
3.1	The unit shall be compartmentalised
3.2	Indications, controls and output voltage setting adjustments shall be on front panel

3.3	The components shall be housed in a well-ventilated sheet metal enclosure
3.4	Louvers shall be provided for ventilation backed up by fine wire mesh so that the degree of protection shall be equal to or better than IP-42.
3.5	All components shall be accessible to the maintenance technician for easy disassembly and replacement.
3.6	Access to parts of equipment shall be with minimum danger from all hazards.
3.7	All components and modules should be clearly marked and all wiring should be colour-coded and tagged.
3.8	All power (including load) and control wiring within the enclosure shall be done with multi stranded copper wires or cables.
3.9	The power wiring/cabling shall be adequately sized for the required rating.
3.10	Ground terminals with isolating links shall be provided.
3.11	Cable glands shall be provided to suit the incoming and outgoing cables.
3.12	The VENDOR shall provide i) audible alarm (see section 4.2 c) ii) trip indication lamps on the cabinet iii) incoming ON/OFF switches, striker fuses and contactors iv) 3 pole MCBs with overload and short circuit protection
3.13	Internal lighting with ON/OFF switch must be provided
4.	**Component Details**
	Following main items are listed. However, if additional items are required for completeness or to meet the specified performance or operational requirements of the rectifier, they shall be deemed to be included in the VENDOR's scope.
4.1	**Converter Unit**
a.	Components for rectifier unit
i.	Three phase full wave, bridge rectifier circuit comprising of insulated gate bipolar transistor (IGBT) controller
ii.	Digital controller for the rectifier unit and capacitor network with surge protection
iii.	The converter should be provided with short circuit protection
b.	One double wound, dry type, three phase mains transformer with full isolation
c.	One smoothing filter circuit comprising of choke and condensers with HRC fuse with trip indication for filter circuit on the DC side
d.	One AC ON/OFF switch for incoming supply
e.	One set of HRC fuses complete with fuse fittings for AC input with suitable ratings and with trip indication
f.	One pilot lamp with series resistor to indicate rectifier in DC 'ON ' condition
g.	Provide a thermal overload switch and relay
h.	One set of HRC fuses complete with fuse fittings for the DC output along with MCB
4.2	**Metering and Fault Indication**
a.	i) One digital voltmeter of suitable range for measuring DC voltage ii) One digital voltmeter of suitable range for measuring input AC voltage
b.	i) One digital ammeter of suitable size to read output current ii) One digital ammeter of suitable size to read input AC current
c.	Fault indicating lamps along with audible alarm, shall be provided on the unit enclosure for each of the following faults :- i. Main AC failure ii. Rectifier AC input fuse down

	iii. D.C. output fuse blown iv. Under voltage and current limiter protection v. Over voltage protection vi. D.C. under voltage operated vii. D.C. over voltage operated
5.	**Tests**
	All routine tests shall be carried out in the presence of experts decided by IIT Palakkad.
6.	**Vendor Drawings must be provided along with technical bid**
	a) Schematic drawing showing the main components and basic schemes. b) All the design CAD drawings showing dimensions and space requirement.
7.	**Spares** Extra spares for the following need to be provided during the time of installation i. fuses of appropriate rating ii. fuse holders iii. Switches of appropriate types and rating iv. indicator lamps Appropriate number of spares for components used in the DC power supply must be supplied by vendor to service the DC power supply within 3 working days.

8. Data Sheet Details(To Be Furnished by vendor with the technical bid)	
8.1	Voltage parameter a) Voltage of DC system b) Type of rectifier :
8.2	Rectifier
	a) Number Required : b) Type : c) DC system voltage :
8.3	Maximum DC BUS LOAD a) Maximum continuous duty : b) Instantaneous load :
8.4	PERFORMANCE 1. Control a) Regulator (Automatic Voltage Regulator): b) Response time: 2. Regulation with AVR a) Minimum power factor at rated continuous load: b) Input current THD at half the rated load: c) Maximum variation in DC voltage (No load to full load):
8.5	MISCELLANEOUS a) Cable sizes for the followings (i) DC output: (ii) AC supply feeder to the module: (iii) DC outgoing feeder: (iv) All circuit shall be protected by: b) All indicating lamp type:

B. Installation and commissioning of DC power supply.

i) The vendor shall arrange for inspection of this power supply at their premises by an IITPKD team during the testing of the DC power supply prior to dispatch of the supply to IIT Palakkad.

ii) The IIT Palakkad team will inspect the setup for safety, fitness and the testing of the DC power supply to determine that the DC voltage regulation, THD and efficiency are compliant with the specifications.

iii) The unloading, unpacking, installation and commissioning of the power supply will be done by the vendor.

iv) Two IIT Palakkad engineers will be trained by the vendor for a period of one day for maintenance and service of the DC power supply during installation.

Who can Participate?

Only those bidders fulfilling the following criteria should respond to the tender.

1. Bidder should be either an Original Equipment Manufacturer (OEM) of power supply or static compensator OR a single authorised dealer having direct purchase and support agreement with such an OEM.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership (LLP) OR a registered partnership firm OR a sole-proprietorship entity. Appropriate Registration/ incorporation certificate to be submitted. Bidder must have a registered office in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh/Maharashtra, or Kerala. Certificate of registration for the offices to be provided.
3. Bidder must also have a service center in Karnataka/Tamil Nadu/Telangana/Andhra Pradesh/Maharashtra, or Kerala. Certificate of registration for the centers to be provided.
4. Bidder must be in existence in the business of power supply or allied fields for a minimum period of 2 previous financial years (i.e., before or since 01-April-2015). Documentary evidence of experience must be provided.
5. The bidder should have implemented orders of DC power supply or allied fields worth exceeding INR 5 lakhs during previous two financial years (April 1, 2015 – March 31, 2017). Purchase orders and certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished. IIT Palakkad reserves the right to determine if the field is allied or not and its decision will be final.
6. The bidder should provide documentary evidence of having supplied and installed DC power supply at a Centrally Funded Technical Institution (like IIT, NIT, IISc). Bidder must provide a certificate of satisfactory performance of the installed setup. Contact details of faculty-in-charge of installed setup must also be provided.
7. **Compliance sheet for the specification & OEM Brochure has to be attached along with Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partial filled sheets lead to disqualification.**
8. The bidder should ensure that the DC power supply should be covered by warranty of at least 3 years.Appropriate number of spares for components used in the DC power supply must be supplied by vendor to service the DC power supply within 3 working days.