

# COLLEGE OF ENGINEERING, THALASSERY

(Under Co-operative Academy of Professional Education Est. By Govt. of Kerala)

ERANHOLI, THALASSERY – 670107, KANNUR-DIST, KERALA

e-Procurement

## NOTICE INVITING TENDER

NO.D-993/2021 DATED: 30.06.2021

Competitive tenders are invited for the Purchase of Solar Simulator System with real time FPGA controller for EEE Department of College of Engineering, Thalassery

1	Tender No	:	D-993/2021
2	Name of Work / Description of Item	:	Purchase of Solar Simulator system with Realtime FPGA controller & equipment for EEE Department of the College of Engineering Thalassery.
3	Estimate Amount	:	18,50,000
4	Earnest Money Deposit (EMD)	:	(Quoted amount x 2.5%)
5	Tender Submission Fee	:	.15% + GST 12%
6	Period of completion / Time for supply installation and commissioning	:	45 days
7	Classification of Bidder	:	Original Equipment Manufacturers or their direct authorized dealers only
8	Tender documents	:	Can be downloaded from <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>
9	Document downloaded from date	:	01.07.2021, 5.00 pm onwards
10	Document clarification period if required lastdate	:	05.07.2021, 11.00 am.
11	Online bid submission start date	:	01.07.2021, 5.00 pm onwards
12	Online bid submission closing date	:	15.07.2021, 11.00 AM
13	Last date and time of receipt of relevant documents as mentioned in (NIT) by speed post	:	16.07.2021, 11.00 AM
14	Date and time of opening of tender	:	16.07.2021, 12.00 PM
15	Date up to which the rates are to be firm	:	45 days from the date of tender.
16	Address of the Office to Whom communications are to be sent	:	The Principal, College of Engineering, Thalassery, Eranholi P.O. Kannur - 670107

Tender documents and tender schedule may be downloaded free of cost from [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) and upload the tender documents and tender schedule (BOQ) on or before the date and time specified on the website. A bid submission fee as given above and EMD shall be remitted through online as GO(MS)13/2013/ITD Dated 09.05.2013 or its amendments. All bid/tender documents are to be submitted online on the e-procurement

website. Tenders / bids shall be accepted only through online mode on the e-procurement website and bidders need to send the hardcopies of the document by the specified date.

The attested copies of registration certificate must be duly attested by gazetted officer of government departments and the same scanned and submitted online along with the bid document. The Scanned copy of the preliminary Agreement in Kerala stamp paper worth Rs.200/- duly filled and signed by the bidder shall also be submitted online. No concessions are applicable to labour contract societies/small scale industries. Each of the scanned copy as mentioned above shall be of minimum A4 size. Any alteration of tender documents that downloaded from the e-tenders site other than filling up relevant fields shall be summarily rejected.

There will not be any kind of exemption from remitting EMD admissible on any ground whatsoever as per Government letter No. 10008/B2/15/1D dated 22.09.2015. the hard copies of original preliminary Agreement in Kerala stamp paper worth Rs. 200/- duly filled and signed by the bidder, affidavit, proof of online remittance of bid submission fee, Declaration as appended, attested copy of valid registration certificate and all documents in proof of participating the tender as per prevailing rules shall be submitted in a separate cover super-scribing the name of work/supply shall be sent to the tender inviting authority before the specified date and time by speed post / courier or by hand. More details on EMD & Cost of Tender documents/bid submission fee are mentioned in the bid document. The bids shall be opened online at the office of the Principal, College of Engineering, Thalassery at the time of specified above by the Principal, College of Engineering Thalassery or the person authorised by him, in the presence of bidders or their authorized representatives who are presents at the time and venue. If the tender opening date happens to be on a holiday or non working day at same time and place then it will be postponed to next working day.

Tenders received online and the original as above received by post, without the necessary documents mentioned above will not be considered and shall be summarily rejected. Further details can be had from the NIT of Office of the Principal, College of Engineering Thalassery during working hours. The firm period of the tender shall be 45 days.

The bidders is advised to submit the bids well before the stipulated date & time to avoid any kind of network issues, traffic congestion, etc. In this regard, the department shall not be responsible for any kind of such issues faced by bidder. All other existing conditions related to the tenders of Kerala will be applicable in this tender also.

*[Handwritten Signature]*

PRINCIPAL  
College of Engineering Thalassery.



Principal  
College of Engineering  
Thalassery-670107

(In Bidders Letter Head)

From

(Address of the Bidder)

To

The Principal  
College of Engineering Thalassery  
Eranholi P.O, Kannur – 670107

**Sub: E-tender for the Purchase of equipment for EEE  
Department of College of Engineering Thalassery – Reg.**

**Ref: e-Tender reference No. D-993/2021 dated 30.06.2021 and tender ID:  
..... in the e-tender website: [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)**

In response to your e-tender No. D-993/2021 dated ..... in the e-tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) for purchase of equipment for EEE department of College of Engineering, Thalassery

I/We agree that this offer shall be valid for a period of 45 days from the date of opening of the Technical Bid Online. Earnest Money Deposit (EMD) furnished by me/us shall be forfeited, if I/We fail(s) to honour the tender.

I/We hereby agree to abide by and fulfil all the Terms and conditions of the (Name of products/work) contract attached herewith for supply / execution of ..... which shall be deemed to form an integral part of this offer and I/We return herewith the same duly signed on each page in token of my /our acceptance thereof.

I/We have transferred an amount of Rs...../- (Rupees .....only) through online/NEFT/RTGS towards the EMD & Tender Fee through online SBI payment gateway link in the website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in).

I/We hereby declare that this bid and your acceptance to be communicated by you to Me/us by registered letter or by any means of written communication shall constitute a valid and binding contract between us.

Yours faithfully,

Name & Signature of the Bidder

Encl:

1. Tender Notice, Item specifications, Terms and Conditions of contract duly signed with office seal
2. Technical Bid documents duly signed with office seal.  
(Seal of the Bidder)

# COLLEGE OF ENGINEERING, THALASSERY

(Under Co-operative Academy of Professional Education Est. By Govt. of Kerala)

ERANHOLI, THALASSERY – 670107, KANNUR-DIST, KERALA

## e-Procurement

### General Terms and Conditions

#### General

- i. The undersigned reserves the right to amend or cancel the tender in part or in full without prior notice at any point of time.
- ii. If the undersigned deems it appropriate to revise any part of this NIT or to issue additional data to clarify an interpretation of provisions of this NIT, it may issue supplements to this NIT. Any such supplement shall be deemed to be incorporated by this reference to this NIT.
- iii. The undersigned reserves the right to reject the bid of parties who have failed to provide adequate after sales support for the products supplied against various orders.
- iv. Liquidated damages will be charged for delayed supply. Furthermore, if the delay exceeds 6 weeks after the scheduled date of supply, such suppliers will not be considered for the subsequent tenders.
- v. Special instructions to the contractors/bidders for the e-submission of the bids are given in the bid documents.

#### Specific terms and conditions for e-tender

1. Hard copies of the tender documents shall be submitted before the date of opening of tenders. the bid will be rejected if the bidders fail to produce hard copy of the agreement before the date of opening of tenders. Bidders are requested to quote e-tender reference No. Subject compulsorily in all physical Hard copy forwarded and all correspondences through email/physical mail.
2. The price quoted should be inclusive of all taxes, freight charges, transportation, loading unloading charges, installation etc. The rates are to be firm for 45 days from the date of opening e-tender.
3. The selected agency have to remit a sum equal to 3% of the agreed amount towards performance Guarantee (Security Deposit) as draft drawn on any nationalised banks preferably SBI in favour of the Principal, College of Engineering Thalassery payable at Thalassery along with Kerala Stamp paper worth Rs.200/- for executing agreement should be furnished within a 14 days from the date of receipt of supply order (letter of acceptance).
4. Delivery at the College with prior intimation of delivery to College of Engineering Thalassery.
5. Payment will be made only after the satisfactory supply, installation, and commissioning. Invoice for supply order generated should contain E-tender reference number.
6. A preliminary agreement as per NIT shall be prepared in Kerala Stamp Paper worth Rs.200/- and produced along with Tender documents.
7. All amount payable is through online remittance only.
8. Date of opening if the opening date is declared as a holiday the tenders will be opened on the next working day.

9. Tender documents are to be uploaded through e-tendering system. Tender fee and EMD should be remitted through net banking (Electronics Transfer only)

### **10.SPECIFICATIONS OF THE SYSTEM& EQUIPMENTTENDERED**

<p>FPGA Controller along with the control software specifications and configuration as below:  4 Embedded Voltage Sensor,4 Embedded Current Sensor, 8 PWMs, 2 Encoder, 8 Relay Outputs  <b>Controller:</b></p> <ul style="list-style-type: none"> <li>• ZYNQ-7000 SoC</li> <li>• Dual ARM Cortex-A9 MP Core</li> <li>• NEON Processing/FPU Engines</li> <li>• Artix-7 Programmable FPGA</li> <li>• 512 MB DDR3</li> <li>• 256 MB Quad-SPI Flash</li> </ul> <p><b><u>PWM Outputs:</u></b>  15V PWM Outputs with Galvanic Isolation  8 PWM Outputs. Output Voltage Level is selectable per Card.  Pair of PWM outputs along with +15V Supply output on a DE9 Connector  Configurable PWM generator  User selectable sample time and divider  Carrier wave type: Ramp Positive, Ramp Negative, Triangular Wave, Inverse triangular Wave  Configurable high and low threshold  Switching frequencies up to 2 MHz with minimum 100 steps  PWM Short circuit protection with Master Trip and Error Flag Indication.</p> <p><b><u>Relay Outputs:</u></b>  230V 5A SPDT Relay  Fast Operating Time  8 outputs. Each output available on an individual connector</p> <p><b><u>Encoder Inputs:</u></b>  RS422 Differential Hall Encoder Inputs.  4 Input Signals with +5V Supply Output per Channel  DA15 Connector Interface for direct Encoder connection</p> <p><b><u>Embedded Voltage Sensors:</u></b>  Isolated +/- 1000V AC/DC Measurement.  Dedicated 16-bit Delta-Sigma Analog to Digital Converter per Channel.  Up to 1MSPS Sampling per Channel  Parallel Sampling of all Channels.  Instantaneous Under Voltage Protection with configurable Threshold.  Definite Time Under Voltage Protection with configurable Threshold.  Instantaneous Over Voltage Protection with configurable Threshold.  Definite Time Over Voltage Protection with configurable Threshold.  Fault Indication and configurable action</p> <p><b><u>Embedded Current Sensors:</u></b>  Isolated Closed Loop Fluxgate Current Measurement  Dedicated 16-bit Delta-Sigma Analog to Digital Converter per Channel.</p>	
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<p>Up to 1 MSPS per Channel Sampling rate  Parallel Sampling of all Channels  Instantaneous Under Current Protection with configurable Threshold.  Definite Time Under Current Protection with configurable Threshold.  Instantaneous Over Current Protection with configurable Threshold.  Definite Time Over Current Protection with configurable Threshold.  Fault Indication and configurable action  <b>The Controller with below Software Features:</b>  Real Time Signals Software framework for Remote Programming, Run time Control, Online Signal Analysis and Measurement Functions  32 virtual inputs for run time control commands and online tuning of user selected control parameters.  32 virtual outputs for display, plot and recording of user selected signals (slow rate-10SPS per signal)  64 virtual Probes for display, plot, measurement and recording of user selected signals (fast rate-200KSPS per signal)  Controller Management Functions: Controller discovery, status check, Binary compatibility check, Remote Programming, Firmware update  TCL Script for GUI configuration and scenario script  Instantaneous Time Plot for inputs, outputs, probes and measurement signals.  Offline analysis (Pause &amp; Analyze). Export signal data to CSV format. Up to 16 number of Time Plots with 6 Signals per Plot  XY Plot for X vs Yn signal plot  Power Calculation Panel – Active Power(P), Reactive Power(Q), Apparent Power(S), Power Factor (PF) and Instantaneous Power calculation for Single Phase 2 wire setup, Two Phase 3 wire setup, Three Phase 3 wire setup, Three Phase four wire setup and Four Phase setup.  FFT Measurement – Fundamental Frequency, THD calculation, Distortion Factor, Harmonic components of signal (RMS, Peak)  Power Analyzer – DC, Fundamental and Harmonics measurement-RMS, Peak, Angle, Power and Power Factor, Phasor Diagram, Power Vector Diagram  Energy Panel – Active Energy and Reactive Energy calculation  Multiple Dashboards for easier user interaction.  Error Indication for Protection schemes  Expression panel  MATLAB/Simulink HDL Coder development flow support  Xilinx System Generator development flow support  Controller device library  Example design demonstrating the basic operation of the setup</p>	
Solar Array Simulator 360V/30A, 3000W and accessories that can be integrated with above controller – 1 No	
Inductor for Grid Side Filter 7mH/ phase, 15 A-1No	
Capacitor for Grid Side Filter 3.5uF/phase -1No	
Three Phase Isolation Transformer with 2KVA and other accessories-1No	
IGBT based Power Converter that can be integrated with the controller -2 No's Power Converter Configuration: Rectifier + Boost Converter + Inverter Rectifier: 415VAC Input, 560VDC Output, 45 Amps Chopper: 600VDC Input, 300VDC Output, 30 Amps Inverter: 600V DC Link, 415VAC Output, 30 Amps Switching Frequency: 2 kHz	

<p>Fundamental Frequency: 50 Hz Type of Cooling: Forced Air Ambient Temp: 40 Deg. Power Converter consists of 1 x SKD 160/18 module, 4 x SKM75GB12T4 IGBT modules, MD-P3 heatsink, 4 x SKYPER 32 R drivers, Electrolytic capacitor, Busbar, IGBT snubbers, fan and thermal trip etc. All are encapsulated in polycarbonate box with Elcom knobs, on it etc. Warranty of one year for the entire system</p>	
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*Principality*  
**PRINCIPAL**



**Principal**  
**College of Engineering**  
**Thalassery-670107**

## GENERAL CONDITIONS OF CONTRACT

### 1. Introduction

The terms and conditions given below shall form a part of the accompanying detailed technical specifications. The contract to be entered into shall be governed by these conditions and amendments thereto, if any.

### 2. Definitions

- a. **College:** Means ("College of Engineering Thalassery, Eranholi P.O, Kannur 670107") which shall include the Principal of the College duly authorized to act and sign on behalf of the college.
- b. **Principal:** Means the Principal of the College of Engineering Thalassery, Eranholi P.O, Kannur 670107. All letters & other communications sent to the College in connection with the contract shall be addressed to the Principal.
- c. **Site:** College of Engineering Thalassery, Eranholi P.O, Kannur 670107.
- d. **Tenderer/Supplier/Contractor:** Means the manufacturer or the person or firm authorised by the manufacturer who is submitting the proposal/ tender.

### 3. Scope of Work

Supply, installation, testing and commissioning of the equipment as schedule attached to the tender notice or on other terms as agreed in the tender documents and subsequent orders/agreements issued/executed in this regard.

### 4. TENDER FORM

Tenders must be submitted online and hard copy of it fully signed by an authorized signatory of the company/Firm making the tender and stamped with company/firm seal shall be submitted to the tender inviting authority in sealed covers super scribing the name of work/ supply so as to reach the Principal, College of Engineering Thalassery, Eranholi P.O, Kannur 670107 on or before the last date & time as indicate in the Notice Inviting Tender (NIT). Hard copies of the required documents received after the due date and time will not be accepted on any reason. Relevant authority of the signatories should be attached with the tender. The quoted price shall be valid (firm) for minimum 45 days from the date of tender opening and shall include all taxes, duties and levies including cost of transportation and installation.

After the submission of bid online in the e-tender portal, the hard copies of the following are to be submitted to The Tender Inviting Authority before the opening date of the bid by speed post/ Registered Post.

1. Copy of remittance towards bid submission fee and Bid Security (EMD).
2. Copy of confirmation of bid submission in the e-tenders portal.
3. Self-attached copy of the bidder's valid Registration Certificate / authorization from the original manufacturer for signing.
4. Duly filled and signed copy of preliminary agreement as given in this bid document in original.
5. Duly filled and signed copy of requisition for e-payment form as given in this bid document in original.
6. Copy of GST Registration Certificate.
7. Copy of PAN

This whole set of certificates and documents shall be sent to the Tender Inviting Authority's office address (as given in the NIT) by registered post/Speed post of India Post/by hand in such a way that it shall be delivered to the Tender Inviting Authority before the deadline specified. The



tender inviting Authority reserves the right to reject any bid, for which the above details are not received before the date of opening of bid.

**5. Earnest Money Deposit (EMD) / Bid Security**

The EMD as specified shall be submitted online and the copy of which shall be submitted along with the hard copy of the bid documents. If the successfully tenderer fails to produce Security Deposit and sign the agreement within 10 days from the date of the purchase order or within a reasonable time as agreed by the Principal, his EMD will be forfeited. The EMD submitted by tenderers are liable to be forfeited in case the tenderer withdraws his tender or request for enhancement of the prices during the firm period.

**6. Acceptance**

The authority for the acceptance of the tender rests exclusively with the Principal. The Principal does not undertake to accept the lowest or any tender or to assign any reason for the rejection of any tender.

**7. Security Deposit (Performance Guarantee)**

The successful tenderer shall, within two weeks from the date of intimation of the acceptance of his/their tender, submit a Security Deposit for an amount equivalent to 3% of the value of the contract for the faithful performance of the contract and for guaranteeing the performance of the equipment in the form of demand draft drawn on any nationalised banks preferred SBI in favour of the Principal College of Engineering Thalassery payable at Thalassery. This amount will be returned after the fulfilment of the contract. The EMD of the successful tenderer will be adjusted against the Security Deposit.

**8. Agreement**

The successful tenderer shall, execute an agreement within 14 (Fourteen) days of issue of letter of acceptance with the Principal for the proper fulfilment of the contract. The accepted tender with all the enclosed schedules, copy of tender notice, conditions of contract and technical specification, letter of award and purchase order shall form part of this agreement. The cost of all stamp papers for executing the agreement and legal expenses incident thereto shall be borne by the successful tenderer. The Bid Security Deposited with the Employer will not carry any interest.

**9. Subcontract**

The supplier shall not assign/sublet to any person or persons the execution of the supply or any part thereof without the consent of the Principal, who shall have absolute power to refuse such consent and or to cancel the contract at any time if not satisfied with the manner in which contract is being executed.

**10. Failure to supply.**

In case the tenderer/supplier fails to supply any of the items ordered within the time provided for delivery, or the supplier commits any breach of the contract, it shall be lawful for the society to arrange for the purchase of the said items and things from elsewhere or to cancel the contract at the risk and cost of the supplier.

**11. Enhancement of Rates**

No representation of enhancement or rates once accepted will be considered. The contractor/Supplier shall be responsible to make good any loss/damage of the equipment which has occurred during transportation without any extra cost to the college.

**12. Cancellation of the Order**

The college reserves the right to cancel the order in part or in full by giving one week advance notice by registered post if:

- a. The supplier fails to comply with any of the terms of the order.
- b. The supplier becomes bankrupt or goes into liquidation of the creditor.

c. Any receiver is appointed for the property owned by the supplier.

**13. Conformity with the specification**

If upon delivery at site, it is found that the equipment/components (inspected and approved earlier or otherwise) are not in conformity with the specification, the same shall be rejected by the College and notification to this effect shall be issued to the supplier. The supplier shall arrange removal of the rejected items within 15 days failing which the college shall be at liberty to dispose of such rejected items in any manner as it may think fit. All expense incurred by the Society in disposing off the rejected items including money paid to the supplier shall be recoverable from the supplier.

**14. Guarantee / Warranty (on-site warranty)**

The supplier shall ensure that all equipment/components/services supplied, or services rendered under the contract shall conform to therequirements and specification. The supplier shall provide warranty for the equipment/system supplied under the order for a minimum period of 1 year from the date of installation. In case the equipment supplied and commissioned by the contractor does not meet the performance requirements as per specifications and documents, the contractor shall be liable to pay COLLEGE, actual damages or compensation as assessed by it.

**15. Dispute**

All disputes regarding this tender shall be settled by a process of mutual negotiation.

**16. Acceptance of Terms & Conditions**

The supplier must confirm their acceptance of the terms and conditions mentioned herein above.



*[Handwritten Signature]*  
PRINCIPAL  
Principal  
College of Engineering  
Thalassery-670107

### SPECIAL CONDITIONS OF CONTRACT

1. Bidders shall submit their offer as per the technical specification appended through online.
2. If there is any deviation in the technical specification of the offered system in comparison with the technical specification required by us, the same should be clearly brought to the notice of this office before the time clarification period, so that any change if required could be made online.
3. Price quoted should include all taxes, transport, loading and unloading, installation and commissioning charges etc.
4. Supply shall be made as mentioned in the specifications.
5. The supply will be supervised by the Principal or any other person designated by the Principal and on the basis of the certificates of satisfactorily completion of supply only the final payment to the supplier shall be effected.
6. The supply and installation shall be completed within 45 days of issue of purchase order.
7. **QUALIFYING REQUIREMENT FOR BIDDERS:**
  - a. Bids will be accepted from the manufacturer or their direct authorized dealers only who have supplied similar system or equipment worth Rs 10 lakh or more on a single order to Govt./Quasi Govt. agencies. If the bidder is the original manufacturer, he should be sourcing the components/part systems. If dealer, the valid authorization/dealership certificate should be produced. The decision of COLLEGE regarding the acceptability of the firm based on the documents submitted with the offer will be final and no correspondence will be entertained in this regard.
  - b. The Vendor should be original equipment manufacturer or authorized dealer of the equipment quoted. Proof of the same must be provided along with the tender.
  - c. The Purchase order copies of the similar system/equipment supplied in past 2 years should be provided.
  - d. The bidder needs to provide the entire system and equipment and cannot bid for individual components of the system. The bidder needs to integrate the all the equipment and demonstrate and train on the entire system.
  - e. The vendor should also submit an undertaking that all the components/ parts/ assembly/ etc. used in the equipment are original new components from the respective manufacturer and that no refurbished/duplicate/secondhand components/ parts/ assembly/etc. are used. If any of this is found during the contract period, the contractor shall remit the money received by him back to College of Engineering Thalassery



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### Terms and Conditions

1. **Taxes and Duties**  
The price shall be inclusive of all taxes, duties, and levies. No additional amount on account of change in the rate of taxes, duties and levies will be allowed.
2. **Freight and insurance**  
Including the price. The transit insurance up to destination is covered under the open insurance policy with State Insurance Scheme by the supplier.
3. **Unloading**  
Unloading of the items to be arranged by the firm.
4. **Delivery**  
Items as mentioned in the supply order shall be delivered within 45 days from the date of technically and commercially clear order.
5. **Warranty**  
The items supplied shall be warranted for a period of one year.
6. **Documents**  
One set each of the catalogues of the items shall be supplied along with Items.
7. **GST**  
The rate quoted must be inclusive of all taxes inclusive of GST, IT, Work contract Tax etc. In case of any variation in the rates of taxes at the time of delivery/ execution, the same shall not be borne by the Principal.



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