



भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्व का एक संस्थान)

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION Phone:(0326) 2235678 || Email : purchase@iitism.ac.in || Website : www.iitism.ac.in

No. EE/INS/164/18-19

Date: 21 August 2018

NOTICE INVITING TENDER

Subject: Supply & Installation of Three phase Inverter with different loads.

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in Electrical Engineering Department.

S No	Full Description of items/ store	Qty	Delivery
1	Supply & Installation of Three phase Inverter with different loads.	03 Nos.	At the Earliest

Tender Schedule

Particulars	Date & Time
Last date and time for submission of tenders	17.09.2018 at 1:00 P.M.
Date and time of opening of tenders	17.09.2018 at 4.00 P.M.

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – II)
2. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
3. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

The Deputy Registrar (P&S)

Indian Institute of Technology (Indian School of Mines),

Dhanbad – 826 004 Jharkhand



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Terms & Conditions

- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT, GST applicable should be quoted.
- 4) Since IIT(ISM) Dhanbad is an Indian Institute of Technology and subject item will be used for research, hence benefit of reduced rate of GST should be considered if applicable.
- 5) **Educational discount**, if any, should be clearly mentioned.
- 6) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 7) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 8) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months**.
- 9) Each page in the bid document must be numbered properly and duly signed & sealed by the bidder on every page of the bid.
- 10) **The items/ materials shall be required to be delivered at EE Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad at the risk and cost of the tenderer.**
- 11) Unloading and installation shall be the complete responsibility of the supplier.
- 12) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 13) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 14) **Advance payment is not admissible.** Payment shall normally be made within 30-45 days subject to receipt and acceptance & installation of the ordered materials/items PBG and other documents.
- 15) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 16) Please send your sealed offer by Regd. Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). *Late or delayed tenders shall be summarily rejected.*
- 17) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 18) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

Assistant Registrar



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Annexure-I

Technical Specification for Supply & Installation of Three phase Inverter with different loads.

Parameter	Specification
Input voltage	Single phase 230V, 50Hz
Semiconductor device to be used	MOSFET or IGBT discrete modules with rating 200V, 5A or more.
Output	<p>Step down supply voltage should be 24V or more and output voltage should be controllable using microcontroller.</p> <p>Operating maximum switching frequency should be 2.0 kHz or more</p> <p>R and R-L type load should be included in the setup.</p> <p>Verifiable gate pulse waveform, output waveforms with different loads and provision for observing voltage and current waveforms.</p> <p>120° and 180° mode of operation and sine PWM methods should be provided using a microcontroller.</p>
Important features	<p>Isolation between control and power circuit should be provided.</p> <p>Power circuit should have both single phase half bridge and single phase full bridge configuration for experiment.</p> <p>Tests points should be provided for measurement and observation of important voltages and Gate pulses using multi-meter and oscilloscope.</p> <p>Clear circuit diagram should be provided on the front panel of the kit with test points.</p> <p>Power ON/OFF switch along with suitable protection for the setup (Fuse, Snubber etc.)</p> <p>The circuits inside the box should be either visible from outside or should have clear access through removable/hinged cover.</p>
Accessories	<p>Suitable connectors like patch cord and banana connectors should be provided</p> <p>Spare semiconductor modules of equal numbers as used in the power section of actual setup are to be provided</p> <p>LCD display with keyboard facility should be present for selecting different modes of operation.</p> <p>Laboratory manual with details of circuit diagram should be provided</p>



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Name of the equipment: Three phase Inverter with different loads.

Parameter	Specification	Complied(Yes/No)
Input voltage	Single phase 230V, 50Hz	
Semiconductor device to be used	MOSFET or IGBT discrete modules with rating 200V, 5A or more.	
Output	Step down supply voltage should be 24V or more and output voltage should be controllable using microcontroller.	
	Operating maximum switching frequency should be 2.0 kHz or more	
	R and R-L type load should be included in the setup.	
	Verifiable gate pulse waveform, output waveforms with different loads and provision for observing voltage and current waveforms.	
	120° and 180° mode of operation and sine PWM methods should be provided using a microcontroller.	
Important features	Isolation between control and power circuit should be provided.	
	Power circuit should have both single phase half bridge and single phase full bridge configuration for experiment.	
	Tests points should be provided for measurement and observation of important voltages and Gate pulses using multi-meter and oscilloscope.	
	Clear circuit diagram should be provided on the front panel of the kit with test points.	
	Power ON/OFF switch along with suitable protection for the setup (Fuse, Snubber etc.)	
	The circuits inside the box should be either visible from outside or should have clear access through removable/hinged cover.	
Accessories	Suitable connectors like patch cord and banana connectors should be provided	
	Spare semiconductor modules of equal numbers as used in the power section of actual setup are to be provided	
	LCD display with keyboard facility should be present for selecting different modes of operation.	
	Laboratory manual with details of circuit diagram should be provided	



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Annexure - II

Format for Financial Bid

NIT No.: EE/INS/164/18-19

Date: 21 August 2018

Bidders Ref: No.

Date:

GSTIN No.:

Subject: Supply & Installation of Three phase Inverter with different loads.

Sl. No.	Full Description of Items with (HSN Code/SAC Code)	Qty.	Rate	Amount
		Packing & Forwarding (if any)		
		Total		
		GST		
		Freight (if any)		
		Installation (if any)		
Amount should be in figure as well as word		Grand Total		

Note:

- 1) Price basis must be FOR IIT(ISM) Dhanbad only.
- 2) All the details must be provided as per prescribed format only.
- 3) Prices quoted by the bidders should include all local taxes, VAT, service tax, GST, HSN Code, SAC Code, livies, transportation cost and insurance costs etc. if any
- 4) All the rates must be quoted in Indian Rupees.