



# 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/151/18-19

Date: 16 August 2018

## NOTICE INVITING TENDER

**Subject: Supply & Installation of Speed control of three-phase slip ring induction motor using static rotor resistance control using rectifier & chopper**

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	<b>Supply &amp; Installation of Speed control of three-phase slip ring induction motor using static rotor resistance control using rectifier &amp; chopper</b>	01 No.	At the Earliest

### Tender Schedule

Particulars	Date & Time
Last date and time for submission of tenders	<b>11.09.2018 at 1:00 P.M.</b>
Date and time of opening of tenders	<b>11.09.2018 at 4.00 P.M.</b>

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 GST applicable should be quoted.
- 4) **Educational discount**, if any, should be clearly mentioned.
- 5) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 6) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 7) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **01 Year**.
- 8) *Each page in the bid document must be numbered properly* and duly signed & sealed by the bidder on every page of the bid.
- 9) **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.
- 10) Unloading and installation shall be the complete responsibility of the supplier.
- 11) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 12) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 13) **Advance payment is not admissible**. Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
- 14) 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.
- 15) Please send your 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*.
- 16) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 17) 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 of Supply & Installation of Speed control of three-phase slip ring induction motor using static rotor resistance control using rectifier & chopper

#### **IGBT power module (Voltage Source Inverter)**

- Three phase fully controlled converter and full bridge rectifier
- AC input with power ON/OFF Switch: 3 $\phi$ , 415V, 50Hz
- Rating of IGBT (with proper heat sink): 1200V, 20-30A
- Rating of DIODE (with proper heat sink): 1200V, 20-30A
- PWM isolate IC to isolate all PWM input
- AC output : 3 $\phi$ , 200V & 10A

#### **Gate pulse generator**

- Digital IC based Single phase & 3 Phase PWM generation
- 6 Numbers of PWM Outputs with Frequency & Modulation index variation
- PWM adjustment facility
- LCD is provided to display PWM Details
- Switching frequency: up to 15 KHz
- PWM outputs are terminated by front panel Connector
- 230 V input with power on/off switch

#### **Three Phase induction motor**

- Type: 3 $\phi$ , slip ring induction motor
- Power : 2 hp
- Voltage : 415 V & 220V rotor
- Speed :1500 rpm
- Loading: motor coupled with suitable generator for loading shall be provided with different load selector switch.

**Digital Tachometer:** 20,000 rpm

**Measurement:** 600/300 AC voltmeter and 10/5 ammeter.

**Test Points:-** to be provided for measuring important voltages or Gate pulses using CRO.

#### **Note:**

- Easy and safe wiring by students due to suitable sturdy shrouded banana patch cords and shrouded socket arrangement for high voltage circuits. Moreover, the control board is accessible to user, thereby facilitating quick verification and testing of new ideas.
- Facilitates easy learning about operative characteristics of experiment.
- **Each setup mounted on wooden table** & reqd. Bakelite panel and colorful terminal less overlays showing circuit diagram & its connection tag numbers for easy understanding and connections.
- Set of Instructor Guide & Student Workbook.



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Annexure - II

## Format for Financial Bid

NIT No.: EE/INS/151/18-19

Date: 16 August 2018

Bidders Ref: No.

Date:

GSTIN No.:

**Subject: Supply & Installation of Speed control of three-phase slip ring induction motor using static rotor resistance control using rectifier & chopper**

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

### 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.