



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.: ECE-PRJ-113-18-19

Date: 11.07.2018

NOTICE INVITING TENDER

Subject: Supply and installation of Mach-Zehnder Intensity Modulator, Modulator Driver and Photodetector

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

S. No	Full Description of items/ store	Qty	Delivery
1	Supply & Installation of Mach-Zehnder Intensity Modulator-20GHz, Modulator Driver-20GHz and Photodetector DC-12 GHz (Detailed Specification is given in Annexure – I)	1 Each	At the Earliest

Tender Schedule

Particulars	Date & Time
Bid Security or Earnest money deposit	Rs. 7000.00
Last date and time for submission of tenders	07.08.2018 at 1:00 P.M.
Date and time of opening of tenders	07.08.2018 at 3.00 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.
- 4) Being an IITs and equipment will be used for research purpose. Hence, GST may be charged @ 5% as per Institute's notification.
- 5) **Bid Security or Earnest money deposit (EMD):** should be submitted in form of A/c payee demand draft drawn in favor of Registrar, IIT (ISM) Dhanbad and payable at any other bank/branch located in Dhanbad.
- 6) Successful bidder has to submit performance bank guarantee @ 10% of total purchase order value as per rule.
- 7) **Educational discount**, if any, should be clearly mentioned.
- 8) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 9) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 10) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months**.
- 11) *Each page in the bid document must be numbered properly* and duly signed & sealed by the bidder on every page of the bid.
- 12) **The items/ materials shall be required to be delivered at ECE Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad** at the risk and cost of the tenderer.
- 13) Unloading and installation shall be the complete responsibility of the supplier.
- 14) IIT(ISM), Dhanbad is entitled for Excise Duty Exemption under Govt. of India notifications and is registered with DSIR, Govt. of India for this purpose. This may be taken into consideration while quoting minimum possible rate. Exemption Certificates can be issued in favour of manufacturers only, if it is mentioned in the bid. It will not be issued any Indian Agent/dealer or distributor at any circumstances. IIT(ISM) will provide only custom duty exemption certificate for availing concessional custom duty. IIT(ISM) will not pay any extra custom duty other than duty exemption certificate.
- 15) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 16) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 17) **Advance or part payment is not admissible.** Payment shall normally be made within 4-6 weeks subject to receipt and acceptance & installation of the ordered materials/items and submission of bills, PBG, followed by its verification etc. (as per Purchase Order Terms).
- 18) 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.
- 19) 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.*
- 20) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

Deputy Registrar



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Annexure - I

Technical Specifications:

Specification for Mach-Zehnder Intensity Modulator

Sl. No.	General Specification Parameter	Value
01.	Input optical power	Up to 110 mW
02.	Operating wavelength	C band (1530-1565 nm)
03.	RF input power	Up to 30 dBm
04.	RF port impedance	40 to 50 Ω
05.	Half wave voltage	≤ 6 V DC
06.	RF Amplitude	6 V typical @ 12 GHz
07.	Insertion Loss	< 4 dB
08.	Extinction ratio	> 20 dB
09.	Chirp value	Zero chirp design
10.	Modulator Voltage	7 V typical @ 12 GHz
11.	Operating frequency range	DC to 20 GHz
12.	S21 Bandwidth	3 dB @ 12 GHz
13.	RF return ratio	> 12 dB @ 12 GHz
14.	PD responsivity	25 mA/W
15.	Operating temperature	-25° C to 55° C
16.	Operating Humidity	0 % to 95% relative
17.	Material	LiNbO ₃
18.	Crystal orientation	X-Cut, Y-Propagating
19.	Bias port connector	2 Pin electrode
20.	Input connector	PM FC/UPC, PM FC/APC
21.	Output connector	PM FC/APC



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Specification for Mach-Zehnder Modulator Driver

Sl. No.	General Specification Parameter	Value
01.	S21 bandwidth	20 GHz
02.	Small signal gain	25 dB
03.	RF Gain	20 dB to 30 dB
04.	Gain adjustable range	10 dB typical
05.	Gain ripple	$\leq \pm 0.4$ dB
06.	Input impedance	40 to 50 Ω
07.	Output impedance	40 to 50 Ω
08.	Input output VSWR	2.0:1 typical @ 12 GHz
09.	DC bias adjustment range	0 to 10 V DC
10.	RF bandwidth	20 GHz
11.	Output amplitude	10 V P-P
12.	Input range	100 mV to 1.5 V
13.	Operating temperature	-25 ⁰ C to 55 ⁰ C
14.	Total power dissipation	≤ 5 W
15.	Accessories	12 V , 1 A Power supply and cables
16.	RF input output connectors	SMA
17.	Electrical power connector	4 Pin-Molex



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Specification for Photo Detector

Sl. No.	General Specification Parameter	Value
01.	Photo diode wavelength range	1300 to 1600 nm
02.	Operating bandwidth	0.001 GHz to 12 GHz
03.	Responsivity	1 A/W @ 1550 nm
04.	Optical input level	<2.5dBm
05.	S21 3 dB bandwidth	12 GHz
06.	RF impedance	50 Ω
07.	Ripple over bandwidth	< ± 0.5 dB
08.	Output coupling	AC
09.	Operating temperature	-25 ⁰ C to 65 ⁰ C
10.	Optical return loss	-25 dB typical
11.	Second harmonic distortion	<-15 dB @ 12 GHz
12.	Power supply	± 6 V DC, 1 mA maximum



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Annexure - II

Format for Financial Bid

NIT No.: ECE-PRJ-113-18-19

Date:

Bidders Ref: No.

Date:

GSTIN No.:

Subject: Supply & Installation of Mach-Zehnder Intensity Modulator, Modulator Driver and Photodetector

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) All the details must be provided as per prescribed format only
- 2) Prices quoted by the bidders should include GST, HSN Code, SAC Code, duties, livies, transportation cost and insurance costs etc. if any
- 3) All the rates must be quoted in Indian Rupees.