

# Notice Inviting Tender

## Wire EDM Machine

**Tender No: CPDM/ACB/2019-20/05**



INDIAN INSTITUTE OF  
**SCIENCE**

**Centre for Product Design and Manufacturing  
Indian Institute of Science  
Bangalore – 560012**

May 2019

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## SECTION 1 – BID SCHEDULE

1	<b>Tender No</b>	<b>CPDM/ACB/2019-20/05</b>
2	<b>Tender Date</b>	<b>27<sup>th</sup> May 2019</b>
3	<b>Item Description</b>	Supply and Installation of <b>Wire EDM machine</b>
4	<b>Tender Type</b>	Two Bid System a) Technical Bid (Part-A) b) Commercial Bid (Part-B)
5	<b>Place of Submission and tender opening</b>	The Chairman Centre for Product Design and Manufacturing Indian Institute of Science, Bangalore – 560012, India
6	<b>Last Date &amp; Time for submission of tender</b>	<b>14<sup>th</sup> June 2019, 17:00 hrs</b>
7	<b>For further clarifications</b>	The Chairman Centre for Product Design and Manufacturing Indian Institute of Science, Bangalore – 560012, India <b>Email: <i>chair.cpdm@iisc.ac.in</i></b> <b>with copy to <i>venuallam@iisc.ac.in</i></b>

## SECTION 2 – ELIGIBILITY CRITERIA

### Prequalification criteria:

1. The Bidder's firm should have been in existence for a minimum of 1 years.  
(Enclose Company **Registration Certificate**)
2. The Bidder should have qualified technical service personnel with documented and adequate experience in an Indian Office
3. If the Bidder is a local distributor/dealer/Agent, it is mandatory to attach authorization certificate along with the bid from the original equipment manufacturer.
4. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
5. The Bidder must not be blacklisted/banned/suspended or have a record of any service related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

## SECTION 3 – TERMS AND CONDITIONS

### A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
  - a. **Technical Bid (Part-A) –**  
Technical bid consisting of all technical details, check list for conformance to specifications, format in which the price bid is quoted without the actual prices (suppliers who include any indication of prices in the technical bid will be automatically disqualified).
  - b. **Commercial Bid (Part-B) –**  
Commercial bid indicating item wise price for the items mentioned in the technical bid , as per the format of quotation in section 6 provided in tender, and other commercial terms and conditions
3. The technical bid and price bid should each be placed in a sealed cover, superscripting on both the envelopes the tender no. and the due date and Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No & Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach The Chairman, Centre for Product Design and Manufacturing, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day.

**If the quotation cover is not sealed, it will be rejected.**

5. All communications are to be addressed to- The Chairman, Centre for Product Design and Manufacturing, Indian Institute of Science, Bangalore – 560012, India.
6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).
7. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
8. Incomplete bids will be summarily rejected.

### B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the right:

- a. To accept OR reject lowest tender or any other tender or all the tenders.

- b. To accept any tender in full or in part.
- c. To reject the tender offer not confirming to the tender terms.

**C) Validity of the Offer:**

The offer shall be valid 90 Days from the date of opening of the commercial bid.

**D) Evaluation of Offer:**

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).
  - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses of the tender and no further claim will be entertained.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for items section 6

**E) Pre-requisites:**

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

**F) Mode of Shipment:**

In case of foreign bidders, the consignment must be airlifted, insured and transported to the installation site by the bidder. Necessary custom clearance will be done by IISc, Bangalore, at Bangalore International Airport.

**G) Customs clearance:**

The IISc, Bangalore will furnish the necessary papers for the import of items into India, necessary custom duty exemption certificate and other supporting documents to facilitate the import of the items will be provided.

**H) Warranty:**

The complete system is to be under warranty period of 3 years including free supply of spare parts and labour from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

**I) Annual Maintenance Contract:**

An annual maintenance contract cost will be negotiated on completion of warranty period. The bidder shall provide an annual maintenance cost.

**J) Purchase Order:**

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

**K) Delivery and Installation:**

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional within 60 days from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed.

**L) Payment Terms:**

- a. For International bidders the payment 80% will be through a Letter of Credit on receipt of original shipping documents and remaining 20% amount will be paid after installation and acceptance through bank transfer
- b. In case of Indian bidders, the complete 100% amount will be paid after supply, Installation and acceptance.

**M) Statutory Variation:**

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary

evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

**N) Disputes and Jurisdiction:**

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in a court of competent jurisdiction located within the city of Bangalore, India. The purchase shall be governed by the laws of India

**O) General:**

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in Indian Rupees.
5. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

**P) Instructions to bidders:**

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should provide a table summarising compliance or non-compliance of the technical specifications provided in the tender document.

**Q) LIQUIDATED DAMAGES**

1. In the event of a delay to the delivery and Installation Completion Date as per the Purchase order schedule for which supplier/Contractor is solely responsible, Supplier/Contractor shall pay Liquidated Damages to IISc, Bangalore at a rate of a quarter of a percent (0.25%) per day of delay, subject to a maximum of ten percent (10%) of the Initial Contract Price.
2. Such Liquidated Damages shall be deemed to be a genuine pre-estimate of the foreseeable damages incurred by IISc, Bangalore due to delay and shall be IISc, Bangalore sole recourse for late performance by Contractor under the Contract.
3. For the purpose of calculating such Liquidated Damages, a grace period of ten (10) days may be considered only on compassionate grounds, and the Purchase order / Contract Schedule shall be extended by any additional time or delays outside the sole control of supplier/contractor or delay not caused by supplier/ Contractor, including but not limited to suspension by IISc, Bangalore or Contractor in accordance with the purchase order or Contract, weather downtime, delay due to Force Majeure, and any time spent or lost on additional work or standby.



## Section – 4 – Technical Specifications

Technical Specifications of **Wire EDM machine**:

<b>Technical Specifications of Wire EDM Machine</b>			
<b>Sl. No.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Essential/Desirable</b>
<b>1.0 Axes Travel and taper angle</b>			
1.1	X travel	At least 300 mm	Essential
1.2	Y travel	At least 200 mm	Essential
1.3	Z travel	At least 200 mm	Essential
1.4	U travel	At least $\pm 60$ mm	Essential
1.5	V travel	At least $\pm 60$ mm	Essential
1.6	Taper angle	At least $\pm 22^\circ/80$ mm	Essential
1.7	Workpiece dimensions	750x550x200 mm (nominal)	Essential
1.8	Workpiece Weight	At least 300 kg	Essential
1.9	Guide ways	Ball screw type	Essential
		Linear motor	Desirable
1.10	Cutting environment	Submerged	Essential
1.11	Materials that can be machined	Steel, carbide, copper, aluminum, Brass, titanium, polycrystalline diamond (PCD) and graphite	Essential
<b>2.0 Positioning Performance as per VDI DGQ 3441 standard</b>			
2.1	Positioning accuracy in X and Y axes	0.005 mm or better	Essential
2.2	Positioning repeatability in X and Y axes	0.003 mm or better	Essential
2.3	Positioning accuracy in U and V axes	0.005 mm or better	Essential
2.4	Positioning repeatability in U and V axes	0.003 mm or better	Essential
<b>3.0 Wire System</b>			
3.1	Automatic wire threader	-	Essential
3.2	Wire diameter	0.1-0.25 mm	Essential
3.3	Wire spool weight capacity	At least 10 kg	Essential
3.4	Wire Alignment Devices and Gauges	-	Essential
3.5	Wire chopper	-	Essential
3.6	Capacity of container for used wire	At least 20 kg	Essential
<b>4.0 Dielectric fluid reservoir</b>			
4.1	Dielectric type	Water	-
4.2	Tank Capacity	At least 500 L	Essential
4.3	Paper Filter	2/pc	Essential
4.4	Deionizer	-	Essential
4.5	Chiller Unit	-	Essential

<b>5.0 Controller specification</b>			
5.1	Controller System	Windows CE or equivalent	Essential
5.2	Control Device	64-bit Industrial computer	Essential
5.3	Memory Device	At least 1GB CF Card	Essential
5.4	Connectivity	Ethernet-IP or Profinet or Modbus	Essential
		USB	Essential
		Wi-Fi	Desirable
5.5	Remote access	Through LAN (or Wi-Fi desirable)	Essential
5.6	Data formats/protocols	Ability to tap raw data to external computer for realtime analytics. Compliant with OPC-UA standards.	Essential
5.7	Display Screen	At least 15" Colour capacitive Touch Screen	Essential
5.8	No. of Control Axes	5 Axes	Essential
5.9	Standard tools & Essential Accessories	All the tools required for maintenance and configuration must be provided	Essential
<b>6.0 Programming and CAD-CAM integration</b>			
6.1	Programming software for generating machining parameters on online mode (on control unit)		Essential
6.2	Import of CAD data (DXF and IGES) for on-board programming (on control unit)		Essential
6.3	Programming software for generation of 2D - NC wire path on online mode (on control unit)		Essential
6.4	Graphic simulator to simulate 2D - NC wire path on online mode (on control unit)		Desirable
6.5	Graphic simulator to simulate 3D - NC wire path on online mode (on control unit)		Desirable
6.6	Background programming option (Programming for job - 2 while machining Job - 1)		Desirable
6.7	ISO programming in metric / inch		Desirable
6.8	Incremental and absolute programming		Desirable
6.9	Help file on Machine control unit (MCU)		Desirable
<b>7.0 Features</b>			
7.1	Restart after power failure with rethreading feature		Essential
7.2	Inbuilt lighting system for work area visibility		Essential
7.3	Machine warning lights consist of Green, Yellow & Red with necessary mounting materials.		Desirable
7.4	Auto Voltage Stabilizer		Essential

7.5	Programmable flushing system	Desirable
7.6	Dynamic corner control feature for optimizing the machining parameters while machining radius corners	Desirable
7.7	Wire bending control feature for detection and correction of wire bending	Desirable
7.8	Automatic optimization of machining parameters during machining	Desirable
7.9	Short circuit elimination to enable higher machining speeds	Desirable
7.10	Module for defining work piece surface roughness & machining parameters	Desirable
7.11	Anti-electrolysis system	Desirable
7.12	Slots machining - Machining of open slots	Desirable
7.13	Pocket machining - Machining of through pockets	Desirable
7.14	Alarm Messenger	Desirable
7.15	Remote Monitor System/power slide	Desirable
<b>8.0 Safety</b>		
8.1	The machine should be provided with all safety features to protect all parts of the machine and the operator.	Essential
8.2	Safety interlocks for dielectric level and temperature.	Essential
8.3	Machine shall be provided with adequate guarding and doors.	Essential
8.4	Collision protection with warning message.	Essential
8.5	Automatic machine shutoff in case of lubrication failure with warning message	Essential
8.6	Over travel limit for all axes with pop up message.	Essential
8.7	Compliance to any Electro Magnetic Compatibility / Electro Magnetic interference emission standards	Essential

**A) Training and demonstration:**

Training on usage of the machine (hardware and software) must be demonstrated by the successful bidder at bidder's cost of at least two individuals at IISc, Bangalore.

**B) Accessories:**

The bidder shall supply the below items along with the machine:

1. Recommended spare parts with specifications.
2. Integrated computer with the software's pre-installed to run the machine and system Operational manuals and maintenance manuals.
3. Two copies of the operational software (in hard disks) should be made available.
4. Special and essential Infrastructure requirements.

## **Section 5: Technical Bid**

The technical bid should furnish all requirements of the tender along with all annexure in this section and submitted to

**The Chairman  
Centre for Product Design and Manufacturing  
Indian Institute of Science  
Bangalore – 560012, India**

**Annexure-1:****Details of the Bidder**

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

<b>Details of the Bidder</b>		
<b>SI No</b>	<b>Name of the Bidder</b>	
1	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
2	Registration No/ Trade License, (if any attach copy)	
3	Registered Office Address	
4	Address for Communication	
5	Contact person- Name and Designation	
6	Telephone No	
7	Email ID Website	
8	PAN No.(attach copy) -if applicable	
9	GST No.(attach copy) -if applicable	

Signature of the Bidder

Name

Designation, Seal

Date:

**Annexure-2:**

**Declaration regarding experience**

To,

The Chairman  
Centre for Product Design and Manufacturing  
Indian Institute of Science,  
Bangalore – 560012, India

**Ref: Tender No:** XXXXXXXXXX

**Dated:** XXXXX

**Supply and installation of Wire EDM machine**

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has \_\_\_\_ years of experience in supplying and installing **Wire EDM machine** of this class.

(Signature of the Bidder)

Printed Name

Designation, Seal

Date:

**Annexure-3:**

**Declaration regarding track record**

To,

The Chairman  
Centre for Product Design and Manufacturing  
Indian Institute of Science,  
Bangalore – 560012, India

**Ref: Tender No:** XXXXXXXX

**Dated:** XXXXX

**Supply and installation Wire EDM machine**

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No.	Country in which the company is Debarred /blacklisted / case is Pending	Black listed / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long
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(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Sincerely

(Signature of the Bidder)

Name

Designation, Seal

Date:

**Annexure – 4:**

**Declaration for acceptance of terms and conditions**

To,

The Chairman  
Centre for Product Design and Manufacturing  
Indian Institute of Science,  
Bangalore – 560012, India

**Ref: Tender No: XXXXXX**

**Dated: XXXX**

**Supply and installation of Wire EDM machine**

Sir,

I have carefully gone through the Terms & Conditions as mentioned in the above-referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Sincerely,

(Signature of the Bidder)

Name

Designation, Seal

Date:



**Annexure – 5:**

**Details of items quoted:**

<b>Company Name</b>	
<b>Product Name</b>	
<b>Part / Catalogue number</b>	
<b>Product description / main features</b>	
<b>Detailed technical specifications</b>	
<b>Remarks</b>	

## Section 6: COMMERCIAL BID

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

SI No	Description	Catalogue Number	Quantity	Unit Price	Sub Total
1	Instrument price ( Including hardware & software)				
2	Accessories for operation and installation				
3	All safety equipment and protective gear				
4	List and cost of consumables				
5	Warranty (3 years)				
6	Cost of Insurance and Airfreight				
8	CIP IISc, Bengaluru				

Addressed to:

**The Chairman  
Centre for Product Design and Manufacturing  
Indian Institute of Science, Bangalore – 560012, India**

# SECTION 7 – CHECK LIST

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

## 1. Envelope “A”: Technical Bid

- a) Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:

Annexure 1: Bidders details

Annexure 2: Declaration regarding experience

Annexure 3: Declaration regarding clean track record

Annexure 4: Declaration for acceptance of terms and conditions

Annexure 5: Details of items quoted

- b) Copy of this tender document duly signed by the authorized signatory on every page and sealed.

## 2. Envelop “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No. & Due Date.