



INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
KHARAGPUR – 721 302, INDIA

NOTICE INVITING TENDER

Tender No. IIT/CHE/GD/ENQ/2018-19/75

Date: 24.12.2018

Sub: Procurement of Time Resolved Micro-PIV System

Indian Institute of Technology, Kharagpur, invites sealed bids from reputed manufacturer or their authorised Distributor/Dealer (foreign firms or their Indian Representative company) or suppliers who have adequate credential for supply, installation and commissioning of “**Time Resolved Micro-PIV System**”, required for dedicated use in relevant research purposes, as per Annexure–I for **Department of Chemical Engineering, Indian Institute of Technology, Kharagpur, India.**

Interested parties may submit their sealed bids under Two-Cover system as per **Technical Specifications** given at **Annexure I**, and **General Terms & Conditions and Special instructions** given at **Annexure II and Annexure III**. Bidders are required to submit their **Details** in the format given at **Annexure IV** along with their technical bids. They are also required to submit a signed **Declaration** in format given at **Annexure V**. A **Checklist and Compliance statement** against each item of Annexures I thereon severally and individually shall also be submitted. Kindly refer to the Institute website **www.iitkgp.ac.in** [link: Tenders] for complete tender document. The same is also available in the CPP Portal [<https://eprocure.gov.in/epublish/app>]. If there is any corrigendum/addendum, it shall only be published on Institute’s Website and Central Public Procurement Portal.

The tender is to be submitted in a sealed packet, containing two separate sealed envelopes (one each for **Technical Bid and Price Bid**) along with prescribed **Tender fee and EMD** to the Office of **Department of Chemical Engineering, Indian Institute of Technology Kharagpur, P.O. Kharagpur Technology, PIN 721302, West Bengal, India.**

The technical bid will be evaluated first and price bids will be opened in respect of those bidders, who are found technically qualified after evaluation of Technical bids. Date for opening price bids will be intimated later.

Head of Department
Department of Chemical Engineering
IIT Kharagpur

Copy to:-

- 1. Head, Institute Information Cell**
 - 2. Institute Website**
 - 3. CPP Portal**
 - 4. Notice Board**
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SCHEDULE OF EVENTS

Tender Reference	IIT/CHE/GD/ENQ/2018-19/75, dated 24.12.2018
Tender fee	Rs. 1000/- (Rupees One thousand only)
Earnest Money Deposit (EMD)	Rs. 3,00,000/- (Rupees Three lakh only)
Last Date and Time for submitting the tender document	16 th January, 2019 at 3 PM
Time and Date of Opening of Technical Bids	16 th January, 2019 at 4 PM
Place of Opening tender offers	Department of Chemical Engineering Indian Institute of Technology Kharagpur, West Bengal, INDIA, PIN- 721302
Contact Telephone Numbers	91-3222-82250

NOTE:

- a. IIT Kharagpur will give exemption for submission of Tender Fee and EMD who are registered with MSME or Central Purchase Organization or startups as recognised by DIPP as per revised rule 170 of GFR -2017 only. However proper and valid document in this regard must be submitted by the bidders in support of their claim.
- b. In case the due date for submitting and opening tender happens to be a holiday, the same will be happened on the next working day. The timings will however remain unchanged. Please note that the Institute remains closed during Saturdays & Sundays.

Technical Specifications of “Time Resolved Micro-PIV System”

Sl. No.	Item Description	Quantity
1.	<p><u>Dual Cavity Nd:YAG PIV Laser:</u></p> <ul style="list-style-type: none"> • Wavelength: 532 nm • Repetition Rate per Cavity: up to 100 Hz or better • Pulse energy per Cavity: 50 mJ (or better) at wavelength 532 nm & 100 Hz frequency • Pulse - Pulse Energy Stability: $\leq 2\%$ • Beam Diameter: 4 mm or better • Beam Divergence: ≤ 2 mrad • Pulse Width @ 1064 nm: 5-8 ns • Pointing Stability: ≤ 100 μrad • Timing Jitter: ≤ 0.5 ns • Flash Lamp Life: 50 Million Shots or better • Ambient Temperature: 5-35°C • External Cooling Water Chiller required, if any. 	1 each
2.	<p><u>Divergent Light sheet optics:</u></p> <ul style="list-style-type: none"> • Light sheet optics with continuously adjustable focal length. • Focal length range: between 300 mm to 3500 mm (or better) • 3 different Cylindrical lenses having focal length between -10 mm to -50 mm for sheet divergence. • Optics/lenses used should be compatible to the Laser Wavelength and Energy. 	1 each
3.	<p><u>Parallel Light Sheet Optics:</u></p> <ul style="list-style-type: none"> • Collimated Light Sheet Optics to generate 100 mm (or better) high parallel light sheet • Optics/lenses used should be compatible to the Laser Wavelength and Energy. 	1 each
4.	<p><u>Long Laser Guiding Arm and Accessories:</u></p> <ul style="list-style-type: none"> • Length: 1.8 meters approx. • Spherical Lens: 10m • Laser feet & compatible breadboard. • Inclusive of all mounting accessories & alignment kit • Optics/lenses used should be compatible to the Laser Wavelength and Energy. 	1 each
5.	<p><u>High Speed Monochrome Camera:</u></p> <ul style="list-style-type: none"> • Sensor Type: CMOS • Minimum resolution: 2560 x 1600 pixels (4MP) or better • Capture Rate at 4MP Resolution: 800 Frames/Sec or better. • Memory: 18GB or higher 	1 each

	<ul style="list-style-type: none"> • Pixel Size: 10 μm or better • Sensor Size: 25.6 mm x 16.0 mm or better • Global Electronic Shutter • Camera Lenses: 50mm/F1.8, • Interface: Ethernet based • Operating Temperature: -10°C to +50°C or better • Suitable Tripod 	
6.	<p><u>Inverted Microscope and Accessories</u> Research grade, high end inverted microscope with high contract optics for Micro-PIV measurements, light guide and halogen input module, F-mount camera adaptor and 2x relay lens.</p> <ul style="list-style-type: none"> • Objective Lens: 10X, 20X, 40X • Transverse/focus mode: manual • Light Source: Both Laser and Halogen. User selectable • Liquid light guide assembly and coupling accessories to be used with microscope and YAG laser • Manual X-Y stage • Necessary filters/ attenuators 	1 each
7.	<p><u>Long Distance Microscope:</u> Long Distance Microscope with Objective Lenses to execute velocity measurements in sections of the order of $\sim 2 \text{ mm} \times 2 \text{ mm}$. Provide suitable FOV estimates with its working distance for various objective lens options compatible with the above 4MP camera</p>	1 each
8.	<p><u>Synchronization Unit:</u></p> <ul style="list-style-type: none"> • Front panel control with digital display • 8 or more independent output channels, 2 or more input channels • Resolution: $\leq 0.5 \text{ ns}$ • Trigger: External • Communication ports: USB/ RS-232. 	1 each
9.	<p><u>Software:</u></p> <ul style="list-style-type: none"> • Image acquisition, processing and analysis software for 2D PIV measurements and Shape Size Analysis in Multiphase Flows. • Cross or auto-correlation technique for high accuracy velocity and velocity gradient calculations. • Velocity, vorticity and derivative analysis modules • Analysis of uncertainty of PIV Processing • Dynamic masking of object in the image field captured by PIV • Integrated Tecplot link for data presentation. • All hardware components of the PIV system would be controlled using this software. 	1 each

	<ul style="list-style-type: none"> • Easy upgrade to Stereo PIV, LIF and Volumetric PIV measurements in future. • Other preferred features are: PIV routines for optimization of recording and processing parameters, export/ import of images in varied formats, integrated movie generator etc. 	
10.	<p><u>Seed Particles (Water based Studies):</u></p> <p>A. Hollow Glass:</p> <ul style="list-style-type: none"> • Mean diameters: 10 microns approx. • Quantity: 1 Kg. <p>B. Silver coated Hollow glass:</p> <ul style="list-style-type: none"> • Mean diameter: 14 microns approx. • Quantity: 150 gm. 	1 each
11.	<p><u>Fluorescent Seed Particles:</u></p> <ul style="list-style-type: none"> • 1 micron – 10 ml • 3 micron – 10 ml • 10 micron – 10 ml 	1 each
12.	<p><u>Suitable laser safety goggles:</u></p>	1 each
13.	<p><u>Supplier’s Capability:</u></p> <ul style="list-style-type: none"> • Availability of after sales service and support in India. • Supplier should compulsorily indicate details of facilities / expertise/ qualification / research publications / job experience of support staff in India. • Factory trained engineer/s & competency should be available in India for complete product support. 	
14.	<p><u>Warranty and Application support:</u></p> <ul style="list-style-type: none"> • Warranty: 3 years • Application support: Factory trained engineers (Direct from the principal company is preferred) to visit TWO times in ONE year within the warranty period for application support. • This visit is not inclusive of initial installation and Training. 	
15.	<p><u>Workstation:</u></p> <ul style="list-style-type: none"> • Dual Intel Xeon Silver 4110, 2.1GHz processor or better, • RAM: 128 GB DDR3 RAM or better, • Storage: Minimum 2 TB HDD, 512 GB Solid State Drive • O/S: Windows 7, 64 bit OS or higher. • 22" monitor, keyboard, mouse. 	1 each
16.	<p><u>Optional items:</u> Any other suitable accessories and components can be quoted separately under separate head “optional items”.</p>	

Technical Terms and Conditions:

1. The system must be completed in all respects and the manufacturer or representative must ensure complete integration of all sub-system with cables, connectors as required and take responsibility of service and supply spares.
 2. The equipment should be provided with a **COMPREHENSIVE WARRANTY** period of Three (3) Years from the date of Installation & Commissioning and date of acceptance against all manufacturing defects and faulty workmanship.
 3. The firm should have supplied a minimum of 5 nos of **PIV Systems** to the reputed institutes/R&D laboratories in India in the last five years. List of the consumers in INDIA along with User Satisfaction letters of similar systems and their correspondence address (with e-mail ID, phone and fax numbers), along with Technical Bid has to be provided by the vendor.
 4. The vendor should undertake to service and supply the necessary spares for the **Time Resolved Micro-PIV System** for a period of seven years beyond the warranty period.
 5. Spare parts and optional accessories may be quoted separately.
 6. Compliance of all the listed specifications/terms and conditions sheet should be indicated on a separate sheet
 7. Firm must have an Indian based service support structure.
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GENERAL TERMS AND CONDITIONS

- 1) **Last Date of Submission of Sealed Bids (both technical and price bids, separately):**
16.01. 2019 up to 3.00 P.M.

The Technical bids will be opened on 16.01.2019 at 4.00 P.M. in the Office of Department of Chemical Engineering, I.I.T. Kharagpur, India.

- 2) **Payment Terms & Performance Bank Guarantee (PBG):** 90% payment will be made on submission of shipping documents and balance 10% payment will be made on installation, commissioning and submission of PBG for performance period if the payment is made by LC, otherwise 90% will be released after receipt of stores and 10% after successful installation and submission of PBG for the performance period. The security deposit so retained may be refunded on submission of Bank Guarantee towards Performance Guarantee valid for **3 years throughout comprehensive warranty period plus sixty days** drawn on any commercial bank.

No advance/mobilization support, is payable against supply of stores.

In the event of failure to deliver the stores beyond the specified date, liquidated damages @ 1% per month or part thereof in respect of the value of stores will be deducted, subject to a maximum of 5%; alternately the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of the vendor.

- 3) **Warranty/Guarantee & On-site skill support:** **Three years** onsite comprehensive OEM warranty from the date of successful installation and commissioning. The firm has to guarantee supply of spares for a minimum period of 10 years. **The OEMs/Authorized Distributors and Dealers must attach certificate about their after sales and service facilities with Technical Bids**, escalation support for on-call service or station engineer etc.
- 4) **Earnest Money Deposit (EMD):** An amount of **Rs. 3,00,000/-**(Rupees Three lakh only) in the form of Demand Draft drawn in favour of “**IIT Kharagpur**”, payable at Kharagpur.

E.M.D. should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing EMD. The validity of the EMD should be 3 (three) months from the date of issue. **Any bid without EMD will summarily be rejected. No interest is payable on EMD.** EMD will be refunded to the unsuccessful bidder after finalization of the tender process. No interest is payable on Security Deposit. Security Deposit shall be forfeited if the selected vendor after award of contract, fails to execute the same.

- 5) **Tender Fee:** An amount of **INR 1,000** (Rupees One thousand only) as tender fee (non-refundable) is to be paid. The payment shall be made by Demand Draft from any Nationalized Bank /Commercial Bank and paid in favour of “**Indian Institute of Technology Kharagpur**”, payable at Kharagpur. **Bids without Tender Fee will not be accepted. This should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing Tender fee.**

Note : Exemption of submission of Tender fee and Earnest Money Deposit (EMD) will be considered as per Government of India rule.

6) **Delivery of Stores:** The store items are to be supplied within 30 days from the date of receipt of the Purchase Order or from opening of LC whichever is later.

7) **Price :**

PRICE may be quoted either in INR or in foreign currency.

Where tenderer intends to quote in Indian Rupees (INR), the price should be quoted “FOR IIT Kharagpur “ basis. The price should be all inclusive including GST.

IIT Kharagpur is registered DSIR, Govt. of India. GST rate for scientific goods is 5% as per the Notification No. 47/2017-Integrated Tax (Rate) dated 14th November, 2017. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder. Where tenderer intends to quote in foreign currency FCA/FOB source port price by Air/Sea to be quoted. In case of comparison between FOR IIT Kharagpur (quoted in INR) and FOB/FCA price (quoted in foreign currency) 20% will be added on FOB/FCA price after conversion to INR.

IIT Kharagpur is registered DSIR, Govt. of India and eligible for exemption for payment of Customs Duties in Terms of Government of India Notification No.51/96-Customs dated 23.07.96. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder.

- (i) Agency Commission, if any will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances.
- (ii) The unit prices should be for the same unit as indicated in the Schedule to tender enquiry and not for any other unit.
- (iii) Prices quoted should be for supply, installation and commissioning at I.I.T. Kharagpur.
- (iv) Discount, if any, should be indicated separately/prominently.
- (v) Offers should normally be on fixed and firm price basis. Any clause making price variation will not be acceptable.

8) **Bid:** Technical Bid and Price Bid should be submitted in two separate sealed envelopes quoting reference number on the top of the envelope. Tender Fee and EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents. The OEMs may either bid directly or Country/Regional/State Distributors /Dealers/Vendors, to quote authorized with valid authorization certificate, capability to sale and service of the products.

9) **Acceptance of Tender:** The Authority of IIT Kharagpur does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof.

10) The addendum/corrigendum if any shall be published on Institute’s Website i.e. www.iitkgp.ac.in and on CPP Portal.

11) The Bidders are requested to submit the bids after issue of clarifications only considering the changes made if any. Bidders are totally responsible for incorporating/complying the changes/amendments issued if any, in their bid.

12) **Extra Features:** If the bidder provides any other extra features on the Hardware or Software which are not mentioned in the tender product specifications, then that shall be highlighted in clear terms, with documentary evidence/literature.

- 13) **Compliance List:** The proposal should be properly indexed and a compliance list against the technical specifications should be provided.
 - 14) **Service:** Response to ensure quality of services, the deputed Engineer from the OEM/Vendor shall have a minimum of 2 years of experience in the relevant field and must be in the payroll of the OEM/Vendor.
 - 15) **Installation and Commissioning:** Free of cost at IIT, Kharagpur. The OEM must ensure timely installation of **Time Resolved Micro-PIV System** with necessary support to the indenters, as per details and lists to be made available by the Stores & Purchase Section or the indenting Departments/Centres/Schools.
 - 16) **Validity of licenses:** Software's licensing price or policy (if any) shall be clearly mentioned.
 - a) All licenses should be perpetual
 - b) All the accessories shall be from the same OEM
 - 15) The OEM should be an ISO-9000 and ISO-14001 certified company with due credits to energy conservation and green earth compliance.
 - 16) **Relevant documents of the OEM shall be enclosed, along with the Technical Bid. Any explanation on this account shall be supported with documentary evidence from the principals.**
 - 17) **Conditional Offer** will not be accepted.
 - 18) **Period of Validity:** Bids shall remain valid for acceptance for a **period of 90 days** from the date of opening of the price bid.
 - 19) The benefit of any downward price revision (revision on account of budget/financial policy, tax revision, EPZ etc.) is to be given to IIT Kharagpur by the selected OEM/vendor.
 - 20) **Past Performance of the Vendors will be judged at the time of Technical Evaluation.**
 - 21) **The Institute does not bind** itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.
 - 22) **Bidders should** enclose the following documents:
 - i. Certificate of Registration / Trade License
 - ii. Copy of PAN card and GST registration papers
 - iii. Name and address of past satisfactory supplies to whom such items/stores have been supplied should be mentioned in the technical bid.
 - iv. Copy of product literature, for which the prices have been quoted.
 - v. Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration should be provided.
 - vi. **Port of Shipment and Country of origin: Should be mentioned in the quotation (in case of shipment from Foreign).**
 - vii. **Purchase order to be placed on: Should be mentioned in the quotation with full address.**
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viii. The OEMs/Vendors need to submit a certificate that they are not currently debarred or blacklisted in IIT Kharagpur or in any national organization or educational institute / university for any supplies, products or services.

23) **All tenders are to** be handed over in a sealed box in the **Office of Department of Chemical Engineering, IIT Kharagpur-721302**. The bids (technical and price bids) once submitted shall be the property of the Institute and shall not be returned to the vendor in future. **For speed post, the Postal Address is “Office of the Department of Chemical Engineering, IIT Kharagpur-721302”**

24) **Opening of Price Bids:** The Price Bid(s) of only those vendor(s) who are found technically qualified will be opened and the same will be opened before the technically qualified vendor(s). **The date for opening of price bids will be notified separately.**

25) Tenderer or his/her authorized representative (with proper authorization letter for attending opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.

26) **IMPORTANT**

I. Director may accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid. The Institute at its discretion may change the quantity/upgrade the criteria/drop any item or part thereof at any time before placing the Purchase Order.

II. A bid submitted with false information will not only be rejected but also the OEM/vendor will be debarred from participation in future tendering process.

III. In case of any dispute, the decision of the Director of this Institute shall be final and binding on the bidders.

IV. For any query pertaining to this bid document, correspondence is to be addressed to the End user:

Department of Chemical Engineering
Indian Institute of Technology Kharagpur
Kharagpur - 721302 [Ph.: 91-3222-82250]

V. In case the due date for opening tender happens to be a holiday, the same will be opened on the next working day. The timings will however remain unchanged. Please Note that the Institute remains closed on Saturday & Sunday.

Annexure-III

INSTRUCTIONS & SPECIAL CONDITIONS

(To be returned by Tenderer along with the Tender duly signed)

1. **GENERAL:** Tenderer(s), who are Indian Agents of OEMs should furnish a clear declaration as follows: We declare that I am/we are Accredited Agents of the suppliers aboard. DGS&D enlistment certificate needs to be attached (applicable only for the Indian Agents)
 2. **DEVIATION FROM SPECIFICATIONS:** It is in the interest of the tenderer to study the specifications in the tender schedule thoroughly before quoting so that, if the tenderer makes any deviations, the same are prominently brought out in the body of the tender. If you need to add any optional items to your system in order to meet our specifications, you are requested to quote for the total including the option required to suit our requirements. Otherwise, your tender will not be considered at all.
 3. **TENDERERS SHALL SUBMIT ALONG WITH THEIR TENDER:**
 - (i) Complete address and tele links for contact persons of principals and Indian agent offices dealing with this purchase.
 - (ii) Name and full address of the OEM's Banker and their swift code.
 - (iii) Port of shipment and Country of origin is to be provided for each item.
 - (iv) Purchase order to be placed on: Should be mentioned in the quotation with full address
 4. **PERFORMANCE BANK GUARANTEE:** On behalf of the Principal, Indian Agent must be able to provide Performance Bank Guarantee of the amount equivalent to the 10% of the cost of equipment from any Nationalized Bank. The Performance Bank Guarantee is required for the entire period of Warranty. Performance Bank Guarantee must remain valid for a period sixty days beyond the expiry of the Warranty Period. Bid security will be refunded back on submission of performance Security.
 5. **GUARANTEE:** The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications.
 6. **JURISDICTION:** All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued i.e. Jurisdiction of KOLKATA HIGH COURT. Acceptance to this effect is also necessary at the time of opening of Technical Bid.
 7. **ACKNOWLEDGMENT:** It is hereby acknowledged that we have gone through all the points listed under "Instructions & Special Conditions" outlined above, and those in the accompanying note on "Important Conditions", and we agree to abide by them under the penalty of permanent disqualification for Tender participation and for related penal actions for non-abidance of the conditions.
 8. Interested vendors must be able to supply adequate spares and consumable during **three years of comprehensive warranty**. Vendor should also ensure trouble free service and performance for another **seven years beyond three years Comprehensive Warranty Period** with adequate spares and accessories.
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TECHNICAL BID DOCUMENT

FORMAT TO BE FILLED BY THE MANUFACTURERS/ INDIAN AGENTS (ON BEHALF OF THEIR FOREIGN PRINCIPALS) OR THEIR AUTHORIZED COUNTRY DISTRIBUTORS/ REPRESENTING DEALERS/ REGIONAL AGENCIES, SUBMITTING TENDER FOR SUPPLY OF TIME RESOLVED MICRO-PIV SYSTEM FOR IIT KHARAGPUR (DEPARTMENT OF CHEMICAL ENGINEERING)

1. Name of the Tenderer :
2. Status of the Tenderer: (attach documents, if registered company/partnership/proprietyship)
3. Whether OEM/representing foreign principle :
(attach copy of certificate/authorization)
4. Details of key top official/authorized official:
(attach details)
5. Details of tie-ups for supply/services, if any:
(Attach details, agreements, escalation matrix)
6. Income Tax returns of previous three assessment year (copy) :
7. Current list/address of clients where similar material has been supplied and successfully working:
8. Income Tax Permanent A/c No.(attach copy):
9. GST registration No.(attach copy):
10. Details of Tender Fee:
11. Details of EMD:
12. Compliance statement of the equipment:

Certified that all above informations are correct to the best of my/our information, knowledge and belief.

-----Dated
Signature & Seal of the Authorized person of OEM/Vendor

NOTE: This is to be submitted in a separate sealed envelope super scribing “TECHNICAL BID”, Notice inviting Tender No. **IIT/CHE/GD/ENQ/2018-19/75 dated 24.12.2018** and name of the bidder. All technical documents like literature, catalogues,etc., are to be put in the same envelope. Price bid of that company/firm only will be opened which do technically qualify, for further consideration. **Attach all relevant documents in the same serial order as above, properly indexed, duly signed and sealed.**

DECLARATION

1. I, -----Son /Daughter of Shri -----
-----Proprietor/Partner/CEO/MD/Director/ Authorized
Signatory of M/s.-----am competent to sign
this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief.
4. I/we am/are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
5. Each page of the tender document and papers submitted by my Company is authenticated, sealed and signed, and I take full responsibility for the entire documents submitted.

----- Signature of the Authorized

Person Date: ----- Full Name: -----

Place: ----- Company Seal: -----
