



भारत सरकार/ GOVERNMENT OF INDIA  
अंतरिक्ष विभाग/ DEPARTMENT OF SPACE  
भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान/ INDIAN INSTITUTE OF SPACE SCIENCE & TECHNOLOGY  
क्रय एवं भंडार विभाग/ PURCHASE AND STORES DEPARTMENT  
वलियमला पीओ., तिरुवनंतपुरम 695 547/ VALIAMALA P.O, THIRUVANANTHAPURAM 695 547  
केरल, भारत/ KERALA, INDIA  
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**निविदा आमंत्रण/ INVITATION TO TENDER**

**Date : 11.06.2018**

Tender Due on : **26.07.2018 at 14.00 Hrs**

Tender opening on: **27.07.2018 at 10.30 Hrs**

Dear Sirs,

**Sealed tenders** are invited from accredited manufacturers / suppliers / agents for the supply, installation and commissioning of the following equipment:

Sl. No.	Tender No.	Item Description		Qty/ Nos.	Cost of Tender (₹)							
1.	2018005539	<b>MICRO PIV SYSTEM</b>  <b>Specifications :</b> <table><tr><td>1.</td><td>Nd:YAG dual cavity pulsed laser</td><td>Each not less than 70 mj/pulse and not more than 120 mj/pulse at 15 Hz (adjustable pulse rate) at wavelength 532 nm (green). Laser source should be capable of emitting stable circular beams with uniform intensity level (top hat profile). Flash lamp lifetime: &gt;20millionshots. Suitable cooling facility for the above mentioned configuration. Energy stability @ 532 nm Operating temperature (18-30 deg) Relative humidity (60-80 %) Voltage: 110-250 VAC Frequency: 45-65 Hz With alignment kits  <b>Optional</b> Power meter and display unit: 2 channel, suitable for the laser supplied.</td></tr><tr><td>2.</td><td>CCD Camera:</td><td>Not less than 8 Mega pixel resolution and frames per second not less than 8. 50 mm/F 1.8 camera lens Including Digital Camera Link Frame Grabber</td></tr></table>			1.	Nd:YAG dual cavity pulsed laser	Each not less than 70 mj/pulse and not more than 120 mj/pulse at 15 Hz (adjustable pulse rate) at wavelength 532 nm (green). Laser source should be capable of emitting stable circular beams with uniform intensity level (top hat profile). Flash lamp lifetime: >20millionshots. Suitable cooling facility for the above mentioned configuration. Energy stability @ 532 nm Operating temperature (18-30 deg) Relative humidity (60-80 %) Voltage: 110-250 VAC Frequency: 45-65 Hz With alignment kits  <b>Optional</b> Power meter and display unit: 2 channel, suitable for the laser supplied.	2.	CCD Camera:	Not less than 8 Mega pixel resolution and frames per second not less than 8. 50 mm/F 1.8 camera lens Including Digital Camera Link Frame Grabber	1 No.	₹500+GST @12% (₹560/-)
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2.	CCD Camera:	Not less than 8 Mega pixel resolution and frames per second not less than 8. 50 mm/F 1.8 camera lens Including Digital Camera Link Frame Grabber										

			<p>Camera control: internal, external trigger modes</p> <p>Camera Lens: 50 mm f/1.4</p> <p>High performance frame grabber &amp; camera link cables</p> <p>High performance filter for 532 nm with &gt; 80 % transmission upto 20 deg angle of incidence 3D calibration</p> <p>Tripod for camera, adjustable height &amp; 3-way swiveling head.</p>		
		3.	<p>Microscope and accessories</p> <p>Includes mounts, guides, cables&amp; adaptors, light assembly and other mandatory accessories to meet the resolution of resolve 100 <math>\mu</math>m (Wide) X 500<math>\mu</math>m (long) .</p> <p>Supporting lenses 10x, 20x and 40x to be included.</p> <p>Tripod for the camera</p>		
		4.	<p>The laser sheet optics</p> <p>Beam guiding arm and other accessories required for micro piv applications</p>		
		5.	<p>Synchronizer</p> <p>Programmable Timing Unit including trigger cables for cameras and laser</p> <p>Resolution: &lt; 0.5 ns</p> <p>Trigger: External</p> <p>No: of input channel: 4 or more</p> <p>Front panel control with digital display</p> <p>Communication through USB or RS-232</p>		
		6.	<p>Seeding particles for micro PIV</p> <p>(1) Fluorescent seed particles ( approx. 1 micron mean diameter) for Micro PIV water flow applications</p> <p>(2) Multiple seed particles of sizes between 1 <math>\mu</math> m to 20 <math>\mu</math> m (mean diameter) to be included as mandatory supply.</p>		
		7.	<p>Micro Calibration Plate</p> <p>Calibration plate for micro piv applications</p>		
		8.	<p>System computer</p> <p>Computer and Interface :</p> <p>Intel i7 configuration with 16GB RAM , 2TB hard drive and 22 inch monitor and keyboard</p> <p>LED monitor</p> <p>Windows 10 Professional 64 bit</p>		
		9.	<p>PIV software</p> <p>PIV software for calibration, image acquisition and post processing</p>		
		10.	<p>Optional accessories</p> <p>Appropriate optics and mountings for vertical and inclined micro channel flow visualizations.</p>		

**General Terms**

1. Delivery period: Less than or equal to 16 weeks after receiving the order.
2. Warranty terms: Should be clearly mentioned. Cost should be inclusive of first year comprehensive warranty from the date of commissioning. Cost of Service warranty should also be mentioned for additional 2 years after the completion of first year comprehensive warranty.
3. Should be easily upgradable to 3D (stereoscopic) PIV system in the future.
4. Price for the optional items should be quoted separately.
5. Installation and training should be provided on site.
6. After sale services: Vendor should provide details of the Indian agent or equivalent counterpart and also the details of the service engineers for maintenance support. There should be immediate availability of authorized service support from the manufacturer/vendor. Warranty period services and annual maintenance charges should be clearly mentioned in the quotation.
7. Spare parts should be available for a minimum period of 10 years after the warranty period.
8. Appropriate safety goggles should be included.
9. External Triggering of both laser and camera should be independently possible with commercially available delay generators.

**Commercial terms and Conditions Tender No. 201800553901 dated 11.06.2018**

**1. SPECIAL INSTRUCTIONS TO TENDERERS**

- 1.1 The bidder is required to submit quotation for the entire scope in *TWO PART* viz, Technical and commercial bid and price bid separately. The first cover shall contain the technical and commercial details along with the format of price quotation without the price superscribing in the cover *“Technical and Commercial-Tender No. 2018005539, Due on 26.07.2018”*. ***The second cover shall contain the prices superscribing in the cover “price bid- Tender No. 2017005539, Due on 26.07.2018”. All the covers to be sealed and insert in another cover super scribing the “Tender No. 2018005539, Due on 26.07.2018” and submit immediately but not later than the due date mentioned against each tender. If the tender is received after the due date and time, the same shall be summarily rejected.***
- 1.2 The cost of tender ₹560/- (inclusive of GST) shall be submitted ***along with Technical & Commercial bid by Demand Draft*** drawn in the favour of the Sr. Accounts Officer, IIST and payable at State Bank of India, Valiamala Trivandrum-695 547. ***In case the Demand Draft is not enclosed with the quotation, the bid shall be summarily rejected.***
- 1.3 **Payment:** Our normal payment term shall be E-Transfer for imports/ within 30 days after supply/installation and acceptance for indigenous respectively.
- 1.4 **The Installation and Commissioning of equipment to be done at our campus, Valiamala, Thiruvananthapuram-695 547. All pre-requisites such as foundation drawing, grouting and any consumables needed for carrying out the installation, if applicable, shall be separately mentioned in the technical bid.**
- 1.5 Delivery terms shall be Ex-works/FOB/FCA for imports and FOR, Valiamala for indigenous.
- 1.6 For import cargoes, the purchase order shall be drawn directly to the foreign supplier through agents in India. We have our own freight forwarder and customs clearance at Trivandrum shall be done by us.
- 1.7 All duties and taxes, if applicable shall be quoted separately.
- 1.8 Accreditation documents such as current income tax/sales tax clearance certificate, clientele list with previous experience in the similar lines of supply must be provided with documentary evidence), Performance Certificate, authorization for import, after sales support in India etc. shall be explained in detail with proof.
- 1.9 **Guarantee & Replacement:**
  - a) The supplier shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
  - b) For a period of One year (12 months) from the date of commissioning of the item. If any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of commissioning thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.

- 1.10 Earnest Money Deposit (EMD):** Interest free EMD to ensure the earnestness of the vendor in the participation of the procurement process to the tune of ₹1,20,000/- ( Rupees One Lakh Twenty Thousand only) by Demand Draft drawn in favour of the Sr. Accounts Officer, IIST, Valiamala, Trivandrum may be enclosed with Technical & Commercial bid sealed cover. The EMD will be refunded to the unsuccessful tenderers within 30 days after placement of Purchase Order. EMD will be forfeited in case the vendor withdrawn from the quotation. The tender not accompanied with EMD shall be treated as invalid tender and summarily rejected. For direct offers from NSIC, MSMEs, etc. EMD is not applicable.
- 1.10 Security Deposit:** Interest free Security Deposit @ 10% of the value of Purchase Order shall be payable by successful vendor for satisfactory execution of the Purchase Order.
- 1.11 Performance Bank Guarantee:** 10% of order value shall be submitted by the Vendor for Warranty obligation (12+2 Months).
- 1.12 Liquidated Damages:** The period of completion indicated shall be the essence of the contract. In the event of delayed date of delivery & Installation, the liquidated damages @ 0.5% per week or part thereof subject to a maximum of 10% of the contract value shall be recovered.
- 1.13 Force Majeure:** During the continuance of the contract, should a part or whole of the items covered by this contract be delayed in delivery due to reasons of force majeure condition which shall include lockouts, strikes, riots, civil commotions, fire, flood, windstorm, explosion, labour disturbance, act of any Govt. or any agency, judicial action, sabotage act of civil disobedience, act of public enemy, technical failure, accidents, acts of God and war, stoppage of deliveries by Govt. etc, each party undertakes to advise the other as soon as it becomes a way of the circumstance of such force majeure, so that action under the provisions of this contract can be mutually reviewed and agreed upon between contractor and IIST. If the force majeure condition extended over a period of six months, both the parties of the contract shall mutually discussed and arrived at an agreement for the continuation/ termination of the contract forthwith.
- 1.14 Arbitration:** Dispute if any shall be settled mutually, failing which, it will be referred to a one-man arbitrator appointed by Director, IIST in accordance with the Arbitration and Conciliation Act, 1996 and any alteration/modifications thereof, whose decision shall be final and binding on both the parties
- 1.15** IIST reserves the right to either accept/reject any tender/s without assigning any reason/s whatsoever.
- 2. Terms & Conditions of Tender Form No. DOS PM:20, Form No. DOS PM:22 & Form No. DOS PM:23 as per attachment.**

Sd/-  
(M.B Subash Chandran)  
Sr. Purchase & Stores Officer  
for and on behalf of Director, IIST