



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

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Website: Department: www.iitj.ac.in/enauto | IITJ: www.iitj.ac.in

INDIAN INSTITUTE OF TECHNOLOGY JODHPUR

Request For Technical Information and Pro Forma Quotations

For Procurement of Particle Image Velocimetry (PIV) + Planar Laser Induced Fluorescence (PLIF) + Accessories

1. Introduction

The Indian Institute of Technology Jodhpur (IIT Jodhpur) intends to procure a **Particle Image Velocimetry (PIV) + Planar Laser Induced Fluorescence (PLIF) + Accessories** for academic research, combustion studies.

Before initiating the formal procurement process, the Institute invites Technical Information and Indicative Pro Forma Quotations from eligible Original Equipment Manufacturers (OEMs) or their authorised representatives.

2. Purpose

- The objectives are to:
- Obtain technical information from prospective OEMs/authorised representatives.
- Obtain indicative Pro Forma Quotations for estimating the procurement cost.
- Identify suitable systems for engine emission measurement and combustion research.
- Evaluate available technologies for integration with planned optical engine testing facilities.

3. Disclaimer

This document is issued **only for obtaining technical information and indicative Pro Forma quotations.**

Submission of information under this proposal:

- shall **not** be treated as a financial bid;
- shall **not** constitute any commitment on the part of IIT Jodhpur to procure the equipment;
- shall **not** confer any right upon the participating firm for award of any future contract;
- shall **not** automatically qualify the responding firm for participation in any future tender.

The Institute reserves the right to modify the technical specifications, estimated cost, procurement methodology, or procurement timeline based on its requirements.



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4. Equipment Details

- Name of Equipment: **Particle Image Velocimetry (PIV) + Planar Laser Induced Fluorescence (PLIF) + Accessories**
 - Quantity: **01+01+Accessories**
 - Broad Functional Requirements:
Attached
-

(The above requirements are indicative and may be revised after evaluation of the responses.)

5. Eligibility Criteria

Interested firms should:

- Be an Original Equipment Manufacturer (OEM) or an authorised distributor/dealer.
- Have experience in supplying similar equipment.
- Have adequate installation and after-sales service support in India.

6. Information/Documents to be Submitted

The interested firms shall submit the following (*Annexure-I*):

1. Company Profile.
2. Details of the OEM.
3. Product Brochure/Catalogue.
4. Detailed Technical Specifications.
5. Compliance with the Broad Functional Requirements.
6. List of previous users/clients with installation reports
7. Details of Warranty.
8. Details of After-Sales Service Support.
9. Authorization Letter from OEM (where applicable).
10. Any additional technical information relevant to the offered equipment.

7. Pro forma Quotation

- Interested firms are requested to submit a Pro forma Quotation (*Annexure-II*) along with their Request for Technical Information and Pro Forma Quotations response. Indicative **Pro Forma** quotation in Indian Rupees (INR), including the cost of the equipment, essential accessories, taxes, duties, freight, insurance, installation, commissioning, training, and any other associated charges. Wherever applicable, the Annual Maintenance Contract (AMC) and/or Comprehensive Maintenance Contract (CMC) charges and spare parts shall be quoted separately as additional charges.
- Expected delivery schedule and other relevant technical and commercial information.

Important Note:



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- The **Pro Forma** quotation is required only for cost estimation and budget planning purposes.
- The prices quoted shall be indicative/non-binding.
- The Pro Forma quotation shall not be treated as a financial bid.
- Submission of a **Pro Forma** quotation shall not confer any right or preference in the subsequent procurement process.

8. Presentation/Demonstration

The Institute may invite for a technical presentation or product demonstration. The date and venue shall be communicated separately.

9. Submission:

Interested firms may submit their Proforma Quotations on or before the due date in sealed cover or through email (as applicable).

The envelope/email should be superscribed as:

"Request For Technical Information and Pro forma Quotations for Procurement of Particle Image Velocimetry (PIV) + Planar Laser Induced Fluorescence (PLIF) + Accessories "

8. Important Dates

Activity	Date
Publication	24-07-2026
Last Date for Submission	04-08-2026
Technical Presentation (if required)	To be informed
Clarification Meeting (if required)	To be informed

10. General Terms & Conditions

1. This **Request for Technical Information and Pro forma Quotations** is issued only for obtaining technical information and **Pro Forma** estimates.
2. The Institute reserves the right to accept or reject any or all responses without assigning any reason.
3. Submission of a **Request for Technical Information and Pro forma Quotations** does not create any contractual obligation.
4. The Institute may seek additional information, technical clarifications, demonstrations, or presentations from any participant.
5. The Institute may modify the technical requirements based on the responses received.



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6. The final technical specifications may be prepared by the User Committee after evaluating all **Request for Technical Information and Pro forma Quotations** responses.
7. The subsequent procurement, if any, shall be carried out through an appropriate procurement method in accordance with the GFR 2017 and applicable procurement rules.
8. Participation in this **Request for Technical Information and Pro forma Quotations** does not automatically entitle any firm to participate in or receive any preference during the subsequent tender process.

11. Contact Details

Name: Dr Srijit Biswas

Designation: Assistant Professor

Department: Energy and Automotive Engineering

Email: sbiswas@iitj.ac.in



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Annexure-I

Request For Technical Information and Pro forma Quotations Response Format

1. Name of the Firm:
2. Registered Address:
3. Name of OEM (if applicable):
4. Contact Person:
5. Email:
6. Phone:
7. Product Name and Model:
8. Brief Technical Description:
9. Compliance with Broad Functional Requirements:
10. List of previous users/clients with installation reports:
11. After-Sales Service Details:
12. Any Additional Features:
13. Remarks (if any).



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Annexure-II

Format for Pro forma Quotation

Sl. No.	Description	Amount (INR)
1	Indicative Pro forma quotation in Indian Rupees (INR), including the cost of the equipment, essential accessories, taxes, duties, freight, insurance, installation, commissioning, training, and any other associated charges.	

Warranty Period: _____

AMC/CMC Charges (after warranty): _____

Delivery Period: _____

Authorized Signatory

Name: _____

Designation: _____

Company Seal & Signature



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Technical Specifications – Particle Image Velocimetry (PIV)

Sl. No.	Equipment / Component	Technical Specification
1	Double-Cavity High-Speed Laser System	Double-cavity DPSS laser with pulse energy 2×10 mJ at 10 kHz. Wavelength 527 nm, maximum repetition rate 30 kHz per cavity, Laser Class 4 compliant. A maintenance kit for the laser and chiller, including particle filter, corrosion inhibitor and desiccants.
2	High-Speed Camera System	Scientific high-speed CMOS monochrome camera with 1280×800 pixel resolution, maximum frame rate 24,270 fps at full resolution and 100,000 fps at reduced resolution, binning mode for enhanced light sensitivity, 12-bit digital output, 64 GB internal memory, and 10 Gigabit Ethernet interface. Includes accessory package comprising camera box, network card, cables and adapters for software, 532 nm camera filter, 50 mm f/1.8 camera lens,
3	Light-Sheet Optics	Light-sheet optics compatible with the above laser, Sheet height about 60 mm, thickness about 1 mm.
4	Laser Guiding Optics	Compatible mirrors and mirror mounts
5	Synchronization System	Programmable Timing Unit with external housing, including all trigger cables required for synchronisation of camera and laser operation together for high-speed applications.
6	Software and PIV Processing Package	Image acquisition and processing software with a lifetime floating license installable on unlimited institute computers. Supports Windows 11 and modular applications, including PIV, LIF and DIC. Features include image acquisition, cross-/auto-correlation, second-order correlation, window deformation, online data analysis, advanced vector processing, adaptive PIV optimisation, Stereo-PIV and Tomographic PIV expandability, uncertainty quantification, synchronised movie generation, import/export of BMP, PNG, JPG, TIFF, RAW and movie formats, plus MATLAB plug-in and Python library.
7	Particle Seeding System	Particle generator with maximum operating pressure of 5 bar and minimum flow rate of 50



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		L/h, supplied with 0.5 kg Titanium Dioxide (TiO ₂) particles and 1 L Aerosil seeding material. Preferably 1 micron or less.
8	System Computer	High-performance workstation equipped with a latest-generation 10-core processor, 4 TB SSD, DVD writer, mouse, Windows operating system, English documentation and 27-inch 4K monitor.



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Technical Specifications -Planar Laser Induced Fluorescence (PLIF) + Accessories

Sl. No.	Parameter	Technical Specification
1	System Type	Tunable Planar Laser Induced Fluorescence (PLIF) system for quantitative visualisation of OH, NO, CH, HCHO combustion radicals using planar laser-induced fluorescence.
2	Laser System	Tunable dye laser, frequency doubling unit, pulse energy around 400 mJ, beam diameter <10 mm, repetition rate 10 Hz, Class 4 laser compliant with software control.
3	Dye Laser Accessories	Dye starter kit, pump optics with high-reflectivity mirrors, laser cradle with optical rail and movable platform, beam delivery package with three prisms, collimator upgrade, Light-sheet optics compatible with the above laser, Sheet height about 60 mm, thickness about 1 mm.
4	Laser Diagnostics	UV/Visible laser power and energy meter with two measurement heads, continuous measurement up to 10 W, wavelength range beginning at 190 nm.
5	Scientific Camera	Imager camera, 2464 × 2064 pixels, pixel size 2.7 μm, noise 2e ⁻ , QE >65%, 8/10/12-bit output.
6	Image Intensifier	Image intensifier, 25 mm input diameter, S20 photocathode, P43 phosphor, ≥55 ns gate width, external gate/delay controller, relay optics, compatible with CCD/CMOS cameras.
7	Imaging Optics	UV camera lens (85 mm, f/2.8, F-mount), chromatic correction, locking screws, storage case.
8	Optical Filters	As per species requirement.
9	Synchronization System	Programmable timing unit with high-speed synchronization cables for laser and camera triggering.
10	Software	Lifetime floating license with image acquisition, calibration, processing, visualization, export, project management, MATLAB interface, hardware control and expandable architecture.
11	LIF Analysis Software	Post Processing Software



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12	Calibration Equipment	Calibration burner and accessories
13	System Computer	High-performance workstation with 10-core processor, 4 TB SSD, Windows 11, 27-inch 4K monitor and English documentation.
14	Factory Testing	Complete factory integration, end test, inspection and system performance verification.
15	Installation & Training	Complete installation, commissioning and four-day on-site training.
16	Warranty	Minimum one-year comprehensive warranty.