



Indian Institute of Technology Jodhpur

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

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website: Department: <https://www.iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

INDIAN INSTITUTE OF TECHNOLOGY JODHPUR

Request For Technical Information and Pro Forma Quotations

For Procurement of Special Electrical Machines/Drives Set-ups with Controllers, DAQs (SRM, SyRM, Stepper, BLDC, and PMSM)

1. Introduction

The Indian Institute of Technology Jodhpur (IIT Jodhpur) intends to procure **Special Electrical Machines/Drives Set-ups with Controllers, DAQs (SRM, SyRM, Stepper, BLDC, PMSM)** for academic and research purposes.

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

2. Purpose

The objectives are to:

- Obtain technical information from prospective OEMs/authorized representatives.
- Obtain indicative Pro forma quotations for estimating the procurement cost.

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.

4. Equipment Details

- Name of Equipment: Special Electrical Machines/Drives Set-ups with Controllers, DAQs (SRM, SyRM, Stepper, BLDC, PMSM)
- Quantity: 05 nos.



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- **Broad Functional Requirements (The essential functions or capabilities that the equipment should have, without mentioning a specific make, model, or brand):**

The Indian Institute of Technology Jodhpur intends to procure five independent Special Electrical Machine/Drive research set-ups comprising Switched Reluctance Motor (SRM), Synchronous Reluctance Motor (SyRM), Permanent Magnet Synchronous Motor (PMSM), Brushless DC Motor (BLDC), and Hybrid Stepper Motor for teaching, laboratory instruction, student projects, doctoral research, and advanced research in modern electric drives, power electronics and intelligent motor control.

Each set-up shall consist of a laboratory-scale electrical machine, suitable loading arrangement, power electronic converter, real-time controller, integrated data acquisition system (DAQ), sensors, software platform, engineering workstation, and all accessories required for experimental validation of advanced drive control algorithms.

The laboratory shall support undergraduate and postgraduate teaching, sponsored research, industrial consultancy and advanced research in electric drives, intelligent control, renewable energy integration, robotics, industrial automation, electric mobility and Hardware-in-the-Loop (HIL) applications.

The proposed system should preferably be modular, expandable and user programmable to facilitate future integration with renewable energy systems, digital twins, AI-based controllers, FPGA-based real-time systems and microgrid research platforms. This description is directly aligned with the research-oriented capabilities described in the technical specification document..

The broad functional requirements are indicative and may be modified by the Institute after evaluation of the technical information received from prospective suppliers.

Sl. No.	Parameter	Broad Functional Requirement
1	System Configuration	<u>Five independent Special Electrical Machine research platforms</u> comprising SRM, SyRM, PMSM, BLDC and Hybrid Stepper Motor complete with controllers, drives and DAQs.
2	Machine Systems	Laboratory-scale motors (1–5 kW or suitable research rating) supporting continuous operation and advanced experimentation.
3	Mechanical Loading	Suitable eddy-current or regenerative dynamometer with torque and speed measurement for each setup.



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4	Power Electronic Drive System	MOSFET/IGBT/SiC converter-based drives supporting variable-speed operation, regenerative braking, torque control and advanced switching techniques.
5	Control Platform	DSP/FPGA/ARM based real-time controller supporting user-programmable control algorithms including FOC, DTC, MTPA, MPC, sensorless control and AI-based control. One (01) OEM-recommended Engineering Workstation/PC suitable for controller programming, real-time monitoring, data acquisition, software development, simulation (MATLAB/Simulink, LabVIEW, Python), experiment execution, and engineering analysis. The PC shall be fully compatible with the supplied controllers, DAQs, and software tools.
6	Data Acquisition System	Integrated high-speed DAQ having minimum 16-bit resolution, high sampling rate, analog/digital I/O and real-time data logging.
7	Sensors & Instrumentation	Voltage, current, encoder/resolver, Hall sensors, torque, temperature and position sensors with signal conditioning.
8	Software Platform	MATLAB/Simulink, LabVIEW, Python and C/C++ compatible software with real-time monitoring, visualization and automatic code generation wherever applicable.
9	Communication Interfaces	USB, Ethernet, CAN, RS-485 and preferably EtherCAT communication support.
10	Engineering Workstations	OEM-recommended engineering workstation(s) for controller programming, DAQ, data analysis and experimentation.
11	Research Capability	Support for torque ripple analysis, efficiency mapping, sensorless control, field weakening, regenerative braking, AI-based control, fault diagnosis, motion control and parameter estimation.
12	Safety Features	Emergency stop, over-current, over-voltage, over-temperature, earth fault, short-circuit and motor-stall protection.
13	Expandability	Provision for future integration with HIL platforms, renewable energy systems, microgrids, robotics and industrial automation.
14	Installation & Support	Complete supply, installation, testing, commissioning, onsite training, manuals, API documentation and minimum three-year comprehensive onsite warranty.



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5. Eligibility Criteria

Interested firms should:

- Be an Original Equipment Manufacturer (OEM) or an authorized 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:

- 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.



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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 Solar Array Simulator"

8. Important Dates

Activity	Date
Publication	29 th July 2026
Last Date for Submission	15 th August 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.
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. Nishant Kumar

Designation: Associate Professor

Department: Electrical Engineering

Email: nishantkumar@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).

Note: In *Brief Technical Description*, It should contain five separate subsections:

- Switched Reluctance Motor (SRM) Research Setup
- Synchronous Reluctance Motor (SyRM) Research Setup
- Permanent Magnet Synchronous Motor (PMSM) Research Setup
- Brushless DC Motor (BLDC) Research Setup
- Hybrid Stepper Motor Research Setup

Each subsection can include:

- Motor
- Converter
- Controller
- Sensors
- DAQ
- Software
- Research Experiments



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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