

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

No. EED/2019/6230/1358

Dated: 13/02/19


M/s Institute website

Sub: INVITATION OF QUOTATIONS FOR 3-DOF GYROSCOPE PLANT/WORKSTATION

1. You are invited to submit your most competitive quotation for the following goods:

Sr. No.	Brief Description & Specifications of Goods	Quantity	Delivery period
1.	3-DOF GYROSCOPE PLANT/WORKSTATION	01 No.	02 weeks or up to 15.03.2019 whichever is earlier

- Necessary literature of the goods may please be sent to facilitate to take decision.
- Payment will be made Online through RTGS/NEFT within 30 days after receipt of material in good condition and according to specifications and installation of the same. The Bank detail for making online payment may be indicated in the quotation.
- The supplier shall deposit Earnest Money along with the Quotation amounting to Rs. 50000 /- in shape of Accounts Payee Demand Draft/Fixed Deposit Receipt/Bankers Cheque or Bank Guarantee from any scheduled commercial Bank in favour of the Director, National Institute of Technology, Kurukshetra. The Quotations without Earnest Money shall be rejected, the EMD will remain valid for a period of 45 days beyond the final validity period of quotation.
- Performance Security @ 5% of the total value of the equipment must be furnished in shape of Demand Draft/Fixed Deposit Receipt or Bank Guarantee from any scheduled Commercial Bank in favour of the Director, NIT Kurukshetra valid up to 60 days after the date of completion of warranty by the successful bidder.
- The items must be supplied within delivery period or delivery period extended by the Institute on the request of the supplier on genuine grounds otherwise the penalty for delayed period @ 0.5% of the amount shall be charged for every week or part thereof and the maximum 10%. The request for extension of delivery period (if any) must be made before the last date of supply as per P.O.
- Vide Notification No.45/2017-Union Territory Tax (Rate) and 47/2017- Integrated Tax Rate dated 14.11.2017 issued by the GoI Ministry of Finance, Department of Revenue towards exemption of GST, NIT Kurukshetra is eligible to get concessional GST (i.e. 5% in all cases) for the items which are supposed to be used in research activities of the Institute.
- The quotation should remain valid for a period not less than 90 days from the date of submission.
- The firm must have got GST No. printed on their quotation
- The right of accepting or rejecting any quotation and to cancel the bidding process and reject all quotations without assigning any reason is reserved with the Institute.
- The supplier must attach copies of two latest purchase orders (preferably from IITs/NITs) indicating the price for the equipment.
- The due date for receipt of quotation is 26.02.2019 and will be opened on next working day at 10:00 AM. Please quote on the top of the envelope our Ref. No. and due date of opening.


13-02-19
Prof-Incharge (Stores)

1. 3-DOF Gyroscope Plant/ Workstation

The 3 DOF Gyroscope is a dynamically diverse experimental platform ideal for study of rotational dynamics principles related to the real-life applications including altitude control, momentum wheel control, navigation, satellite orientation, auto-pilot systems and technical devices with gyroscopic sensors, such as smart phones, tablets or video game controllers.

Students Benefits:

The 3 DOF Gyroscope is a diverse experimental platform that can be used to teach rotational dynamic challenges. With applications in flight control and satellites, this experiment is guaranteed to engage students; and it helps them to analyse, design and implement state feedback controller on the system.

Technical Specifications:

Total mass	27.3 kg
Disc encoder resolution (in quadrature)	4096 count/rev
Gimbal / frame resolution (in quadrature)	4000 count/rev
Disk motor output power	44.5 W
Gimbal / frame motors output power	266 W
Rotor mass	1.91 kg
Rotor diameter	0.152 m
Rotor thickness	0.0127 m

Features:

- 4 DOF sensed and 4 DOF actuated (over-actuated) system
- Mechanically balanced through the entire workspace
- High-resolution optical encoders for accurate measurement
- Slip rings provide infinite continuous motion in each DOF
- Direct drive actuation to achieve negligible friction on all axes
- Precise, stiff and heavy-duty machined components
- Fully compatible with MATLAB®/Simulink® and LabVIEW™
- Fully documented system models and parameters provided for MATLAB®, Simulink® and LabVIEW
- Open architecture design allows users to design their own controller

Special requirement

- Nonlinear modelling of the system using differential equations in MATLAB Simulink and with details in soft and hard copy of manuals
- Provision to replace the controller (provided with the set-up) with some different linear/ nonlinear controllers

Warranty: 1 year