

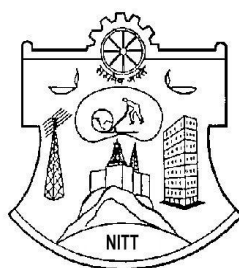
# NATIONAL INSTITUTE OF TECHNOLOGY

## TIRUCHIRAPPALLI – 15

### Department of Mechanical Engineering

Web : [www.nitt.edu](http://www.nitt.edu)

Phone : 0431 - 2503412



# TENDER DOCUMENT

(Last date of submission of quotation extended from 3<sup>rd</sup> March 2011 to 15<sup>th</sup> March 2011)

Tender Notification No.: NITT/MECH/KPS Dated : 17<sup>th</sup> February 2011

Name of the items : Dynamics Lab equipment and Automobile Lab equipment

EMD Amount : **NIL**

Delivery : **two months**

Last Date of submission of Tender **Date extended up to 15<sup>th</sup> March 2011 3.00 pm instead of 3<sup>rd</sup> March 2011**

Address for submission of Tender : Professor & Head  
Dept. of Mechanical Engineering  
National Institute of Technology  
Tiruchirappalli – 620 015  
E-mail : [pannir@nitt.edu](mailto:pannir@nitt.edu)  
Phone No: 0431- 2503412

Date of opening of bid : **16<sup>th</sup> March 2011 at 10.00 a.m**



**NATIONAL INSTITUTE OF TECHNOLOGY  
TIRUCHIRAPPALLI – 15**

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**DEPARTMENT OF MECHANICAL ENGINEERING**

**Tender Notification No.: NITT/MECH/KPS**

**Dated: 17<sup>th</sup> February 2011**

**NOTICE INVITING TENDER**

The National Institute of Technology, Tiruchirappalli (NITT) is an autonomous body under MHRD, GOI, imparting Technical Education and engaged in Research Activities. It is proposed to procure the following component for the departmental academic/research activities.

Sealed Quotations are invited for the following items subject to the following terms and conditions, from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time. The quotations will be opened in the presence of bidders or their authorized agents who may choose to be present.

Name of the components : Lab equipment and Measuring Instruments

Last Date of submission of Tender : **15th March 2011 upto 3.00 p.m.**

Tender to be submitted at the following address : Professor & Head  
Dept. of Mechanical Engineering  
National Institute of Technology  
Tiruchirappalli – 620 015  
Tamil Nadu, India

***Place, Date and time of opening of bid*** :

**Date: 16<sup>th</sup> March 2011 at 10.00 a.m      Time: 10.00 a.m**

**Note :** The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee.

## SECTION: 1 INSTRUCTION TO BIDDER

1. The bidders should provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments/Undertakings/public sectors with contact details. The details of the bidder/profile should be furnished along with the copy of all related documents.

### 1.1 **Documents to be submitted in the Bid:**

- (i) The bidder should furnish copy of licence certificate for manufacture/supply of the item.
  - (ii) The bidder should furnish Income Tax PAN number
  - (iii) Catalogue of the product with detailed product specifications
2. The bidder should submit their rate as per the format given in Section 4 of the Notice Quotation in this cover. Rate should be quoted in Indian Rupee. The rate should be quoted both in words and figures. All the pages of the bid should be signed affixing the seal. All corrections and overwriting should be initialed.

***The bid cover should be duly superscribed with the following details.***

***(1) Quotation Notification Number (2) Quotation for the supply of Dynamics Lab equipment and Automobile Lab equipment (3) Last Date of submission 15th March 2011.***

3. The quotation will be acceptable only from the manufacturers or its authorized supplier.
  4. The bid shall be in the format of price schedule given in Section 4. The contract form as per format given in section 5 shall be submitted. Incomplete or conditional quotation will be rejected.
  5. Details of quantity and the specifications are mentioned in Section 3 appended to this quotation Notice.
  6. The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities.
  7. The Institute reserves the right to cancel or reduce the quantity included in the schedule of requirements at any time after acceptance of the quotation with a notice. The Contractor/Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work/supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
10. **Validity of bids:** The rate quote should be valid for a minimum of 60 days. No claim for escalation of rate will be considered after opening the Quotation.

11. **Imports:** In case, goods are to be imported, the Indian agent should furnish authorization certificate by the principles abroad for submission of the bid in response to this Quotation Notice.
12. **Clarification of Quotation Document:** A prospective bidder requiring any clarification of the Quotation document may communicate to the contact person given in this notice inviting quotation.
13. **Amendment of quotation document:** At any time prior to the last date of receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the Quotation document by an amendment.
14. ***The Institute may at its own discretion extend the last date for the receipt of bids.***
15. The bids shall be written in English language and any information printed in other language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid, the English translation shall govern.
16. The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Institute Purchase Committee is final in all matters of quotation and purchase.
17. The bidder should give the following declaration while submitting the Quotation.

**DECLARATION**

I/we have not tampered/modified the quotation forms in any manner. In case, if the same is found to be tampered/modified, I/we understand that my/our quotation will be summarily rejected and full Earnest Money Deposit (EMD) will be forfeited and I/we am/are liable to be banned from doing business with NIT, Trichy and /or prosecuted.

**Signature of the Bidder** : .....

**Name and Designation** : .....

**Business Address** : .....  
.....  
.....

**Place :**

**Date :**

**Seal of the Bidder's Firm**

18. Any other details required may be obtained from the contact person given in the notice inviting quotation during the office hours.

## SECTION : 2 CONDITIONS OF CONTRACT

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1. The rates should be quoted in Indian Rupee FOR NIT, Trichy for supply within India.
2. In case of import both CIF and / or FOB rate should be quoted. All components of expenditure to arrive at Chennai need to be explicitly specified.
3. The bidder shall indicate the excise duty exemption for the goods if applicable
4. The Institute is eligible for customs duty and excise duty exemption.
5. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any.
6. Rate quoted should be inclusive of Testing, commissioning and installation of equipment and training.
7. **Payment**: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier. In case of imports, the payment will be made through LC after installation and performance security need to be submitted at the time of LC commitment.
8. Guarantee and Warrantee period should be specified for the complete period conforming to the section 3 of this quotation document.
9. Period required for the supply and installation of item should be specified conforming to the section 3 of this quotation document.
10. In case of dispute, the matter will be subject to Tiruchirappalli, Tamil Nadu Jurisdiction only.

## SECTION : 3 SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

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### Specifications:

#### **1.Super Precision Gyroscope and accessories**

Gyroscope made from SOLID brass and aluminum with miniature high-grade bearings. The gyroscope can be configured into a number of positions to perform scientific experiments.

A detachable electric starter, to spin the gyroscope up to a speed of 12,000 rpm. The Gyroscope should be capable of spinning up to 4 minutes after initial spin.

The gyroscope is supplied with stainless steel extension rods, that can be screwed in other positions to create gimbals etc. There are 7 places on the frame of gyroscope that the attachments can be screwed into.

#### **Accessories**

##### **(i) Rate Kit to convert the super precision gyroscope to convert the same in to rate gyroscope**

A kit that turns the super gyroscope and gimbals kit into a rate gyroscope. It can also be used for showing the gyroscopic couple.

##### **(ii) Gimbal**

The parts that come with the gyroscope can be used with this kit to expand the number of experiments that can be carried out with the gyroscope.

Platform has rubber feet to stop slipping

Kit can be used to link two gyroscopes together

Allows the gyroscope to be used with gimbals or on an arm

Very high precision manufacture

##### **(iii) Gyroscope replacement part kit**

A kit consists of 2 new stainless steel bearings, 2 rubber O rings and a custom made tool to remove the bearings

#### **2. Lecture Gyroscope**

A rubber starter wheel is connected to a small electric drill to get the gyroscope up to speed 7,000 rpm. Leaving you to do experiments with the high speed spinning gyroscope that spins effortlessly for over 20 minutes.

'Spin time' has been increased to 20 minutes +

Inner gimbal can be removed

High speed stainless steel bearings

The gyroscope and gimbal positions are adjustable

Made from SOLID brass

Started with rubber friction starter (supplied)

#### **Accessory**

(i) **High speed electric Drill** : A high quality, high speed drill general purpose drill, for starting the lecture gyroscope. It has a no load speed of upto 30,000 rpm, 30 watt DC motor, 0-

18Volt and three chucks. Chuck sizes are 1.0, 1.5 and 3.0.  
The drill comes with a power supply 240v.

### **3. Metal flip over top**

These are highly polished solid metal flip over tops. They have a chrome like finish and are excellently machined. Simply spin it as normal and watch it suddenly flip over and then continue to spin upside-down.

### **4.Vortex tube**

Powered by compressed air, that produces hot air and cold air. No moving parts. Volume of air required 4cfm and operating pressure 100 psi.

### **5. Solar Powered Stirling Engine**

A solar powered Stirling engine for demonstration of energy conversion. A Stirling engine with its parabolic mirror, that can be attached to any conventional camera tripod. When aimed at the sun, incoming solar energy is focused on the heat cap of the engine and is converted to rotary motion.

### **6.Gas powered single cylinder engine**

This single cylinder engine runs on butane or propane (or a mix of both) which is stored in a gas tank on the baseplate. This is refilled in between runs. With the help of the flywheel the engine can be started easily using hand. A simple turn of a knob on the gas tank and flick the flywheel, then adjust the knob for the correct speed and to rev the engine.

The baseplate and engine are made from polished and anodized aluminum. The cylinder liner and pistons consist of hardened steel which ensures a long life span. The flywheel is polished brass. The ignition system uses Piezo crystal which requires no batteries.

The model engine comes complete and ready to run.

|                       |  |
|-----------------------|--|
| Speed regulation:     | valve on the gas tank                  |
| Crankshaft            | two-way running in ball bearings       |
| Capacity              | approx.. 1.5 cc                        |
| Number of revolutions | approx.. 200 - 2500 rpm                |
| Running time          | approx. 15 min per standard gas refill |

### **7.Gravimetric Weighing Balance**

#### **Technical Details :**

Platform Size 600x800

Minimum Platform Height 130mm min & 155mm max

Material of Construction: Base Frame : MS Black powder coated

Material of Construction: Load Plate SS - Chrome Nickel Steel

Weighing Range 0 ~ 150 Kg

Readability 1 gm

Repeatability 0.5 gm

Linearity typical +/- 2 gm

Taring Range, 0 to Maximum Load (150 Kg)

#### **Pre Load Range**

Zero Setting range +/- 3kg

Pre Load range typical 64kg



Temperature range °C - 10 to + 40

Relative Humidity (%) 40 ~ 70

**Maximum Static Load**

With Central Load 500Kg

With Side Load 300Kg

With Corner Load 150Kg

**Indicator**

Protection IP 69 K

Interfaces Standard 1 x Rs232 C

Optional

Com2 ~ Com9, which includes ethernet, profibus Wlan, Blue Tooth

Display

Active bright Dot Matrix.

**8.Pendulum with recorder connection**

Pendulum with potentiometer to measure the amplitude and period of oscillation Pendulum mass : 1 kg, Mass of pendulum rod: 100 g, Pendulum length: 1 m, Length variation:  $\pm 20$  mm, Angle variation:  $\pm 90$  degree, Oscillation time: 1.96...2.04 s, Input-resistance: 5 kOhm, Maximum input-voltage: 20 V DC.

Output: 4 mm sockets for connecting to a PC-interface or a 2 channel recorder.

**Accessory:** 0-12V DC Power supply

**9 Hand tool kit for installing self-clinching fasteners:**

Hand tool kit contains one hand tool, one flat punch, seven punches and dies, one punch adapter bushing, one edge-depth guide, five fastener anvils to install nuts (S,CLS and CLA) ranging from M2 thru M5 thread sizes.

**SPECIFICATIONS:**

Force:1.134 kg ,Throat Depth:4.45 cm,Weight:1.25 kg

**10.Used /condemned Maruthi 800 car**

Used/condemned Maruthi 800 vehicle for performing dismantling and assembling student exercises in the Automobile Lab class.

**11. Electric Power steering**

Used Electric Power steering for demonstration in the Automobile Lab class.

**SECTION: 4 PRICE SCHEDULE**

[To be used by the bidder for submission of the bid]

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- 1. Component Name :
- 2. Specifications (confirming to Section 3 of Quotation document-enclose additional sheets if necessary) :
- 3. Currency and Unit Price :
- 4. Quantity :
- 5. Item cost (Sl.No.3 & Sl.No.4) (in Indian Rupee) :
- 6. Taxes and other charges :
  - (i) Specify the type of taxes and duties in percentages and also in figures
  - (ii) Specify other charges in figures :
- 7. Warranty period (confirming to the Section 3 of Quotation document. This should be mentioned in Technical bid also in order to get qualified for Financial bid) :
- 8. Delivery Schedule (confirming to the Section 3 of Quotation document) :
- 9. Name and address of the firm for placing purchase order :
- 10. Name and address of Indian authorized agent (in case of imports only) :

**Signature of the Bidder** : .....

**Name and Designation** : .....

**Business Address** : .....  
.....  
.....

**Place :**

**Date :**

**Seal of the Bidder's Firm**

**SECTION : 5 CONTRACT FORM**

[ To be provided by the bidder in the business letter head ]

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1. {Name of the Supplier's Firm) hereby abide to deliver the .....by the delivery schedule mentioned in the Section 3 quotation document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the quotation document without any defect and deviations.
3. Warranty will be given for the period mentioned in the quotation document and service will be rendered to the satisfaction of NIT, Trichy during this period.

**Signature of the Bidder** : .....

**Name and Designation** : .....

**Business Address** : .....  
.....  
.....

**Place :**

**Date :**

**Seal of the Bidder's Firm**