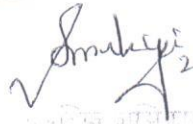



<p>NATIONAL INSTITUTE OF NATURAL FIBRE ENGINEERING & TECHNOLOGY NINFET (MI), Kolkata 12, Regent Park Kolkata, West Bengal, India Pincode- 700040 Ph.: Fax: 2421215/16/17</p>	<p>PURCHASE ORDER</p>	<p>Vendor Name : M/s Deep Microsystem Address : 3 Point Crossing, Bhanderdaha, P.O. Antisara, Singur, Hooghly-712223 Hooghly, West-712223 Vendor No. : 119043 GST Number :</p>
<p>P.O.No. : 40620400151 PO CREATED BY: Ms. Swarnali Mukerjee CREATION DATE: 22-FEB-20 DELIVERY DATE: 23-MAR-20 GSTIN Number: 19AAA6N0020J2ZM</p>	<p>Status: <input checked="" type="checkbox"/> COMPLETE Date: -</p>	<p>QUOTE No : COM/19-20/FEB/06 INDENTER : DR. D. P. RAY, PS & IN DENT No. : PI, CRP-02</p>
<p>Project Number : Project Code : Project Title :</p>		<p>Major Category : Minor Category : Source of Funds : 801 - Deposit Schemes - Domestic - Projects Scheme Code : 98100 - Consortium Research Platform(CRP) on Conservation Agriculture Division Name : 10186 - Purchase Section</p>

Subject-Manufacturing service of one Integrated Grading Instrument for Banana Fibre in respect of fibre strength and fineness as grading parameters under CRP NIRJAFT 02 project reg-

Dear Sir/Ma'am,
Please supply the following items subject to terms and conditions mentioned below and overleaf.

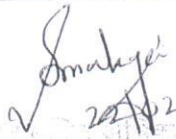
Sr. No.	Item Code	Item Description	Quantity	Unit	Unit Rate (INR)	Base Amount	Buy Back Amt	Tax	Tax Amount	Total Amount
1	CONSUM0025	Motors, Vice Units, Blocks, Gear, Pulley, Structural Base, Limit Switch etc	1	Number s	55000	55000	0			55000
2	CONSUM0025	Load Cell Sensor Amplifier, Motor Drivers, Connectors & Switches	1	Number s	45000	45000	0			45000
3	CONSUM0025	Air Pump, Air Chamber, Fibre Holder, Orifice, Connectors	1	Number s	39500	39500	0			39500
4	CONSUM0025	Schematic & PCB Development, User Interface	1	Number s	70000	70000	0			70000


 22/02/20

 ASST. COM. MANAGER
 भारत सरकार
 ICAR National Institute of Natural Fibre Engineering and Technology
 12, Regent Park, Kolkata - 700 040

प्रेषित / Despatched
 दिनांक / Date... 22/2/2020
 हस्ताक्षर / Sig.....

OFFICE COPY

5	CONSUM0025	Mother Controller, Integrated Display Unit	1	Number s	95000	95000	0			95000	
6	CONSUM0025	PC Interface & Firmware	1	Number s	52000	52000	0			52000	
7	CONSUM0025	Encasing & Assembly	1	Number s	15000	15000	0			15000	
8	CONSUM0025	Electronic calibration system for the instrument	1	Number s	20500	20500	0			20500	
9	CONSUM0025	Laptop as data collection terminal	1	Number s	55000	55000	0			55000	
10	CONSUM0007	GST@5%	1	Number s	22350	22350	0			22350	
GRAND TOTAL (In Words)		INR Four lakh sixty-nine thousand three hundred fifty Only								Grand Total	INR 469350
Ship To: Purchase Section-NINFET (MI), Kolkata 12, Regent Park Kolkata, West Bengal, India Pincode- Ph., Fax: LC Number: Free On Board: Freight Terms: EMD Type : EMD Amount :					Bill To: Director/Head-NINFET (MI), Kolkata 12, Regent Park Kolkata, West Bengal, India Pincode- Ph., Fax: Division: Purchase Section Purchasing Officer's Contact No.: Payment Terms: Immediate						
IMPORTANT : - Please mention our Purchase Order Number on Challans / Invoices. - Raise Separate Challan/Invoice for separate P.O. - Item Description in Invoice should be as per P.O. - You shall be responsible to meet all regulatory requirements which may arise from time to time											
										Authorized Signatory	

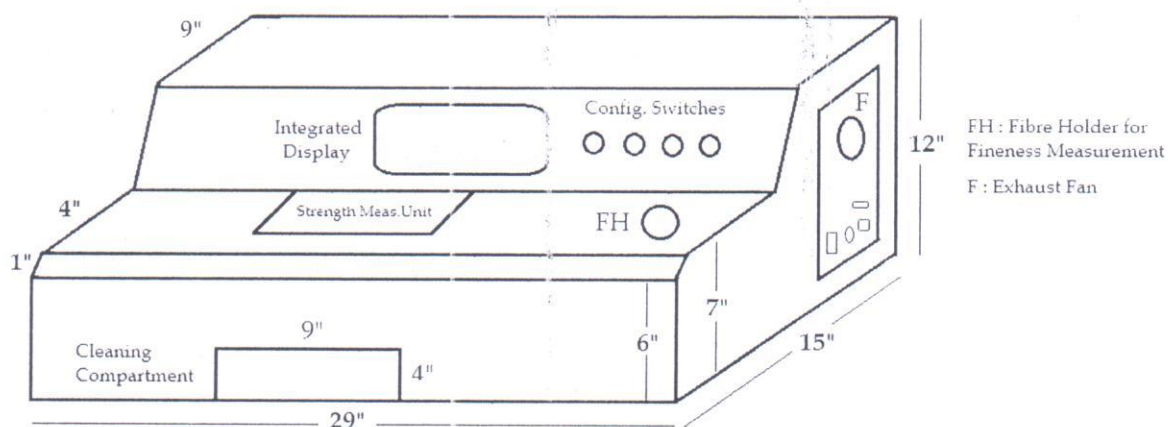

 20/10/2022
 Anil Kumar, Director
 National Institute of Engineering and Technology
 ICAR, 12, Regent Park, Kolkata - 700012

Description of Item:

Manufacturing service of one Integrated Grading Instrument for Banana Fibre in respect of fibre strength and fineness as grading parameters.

General Features and Functional Description:

The integrated grading instrument will consist of a strength measurement unit for fibre of length 12.5cm in bundled form having variable weight and a fineness measurement unit for fibre of 5cm in length in bundled form having variable weight. The instrument will be compact in form with powdered coated metal cabinet having all mechanical and electronic items fitted inside properly. The estimated external drawing of grading instrument is as under. The dimensions and displayed components may slightly vary depending on manufacturing process tolerances.



The whole work may be divided into two sections as under.

Section-A : Strength measurement unit

This section will measure the breaking strength of the fibre of length 12.5cm in bundled form having variable weight. The mechanical part will consist of motorized vice units which will automatically grip the fibre sample and apply strength in horizontal direction. The electronic part will consist of microcontroller based embedded unit which will measure the peak breaking strength in g/tex with the help of load cell sensors & amplifiers and record the same for calculation of grading index.

Section-B : Fineness measurement unit

This section will measure fineness for fibre of 5cm in length in bundled form having variable weight incorporating airflow method of measurement. The mechanical part will consist of air pump, air chamber, fibre holder, orifice to achieve fineness in tex through airflow method. The electronic part will consist of microcontroller based embedded unit having interface with differential pressure sensors for measurement.

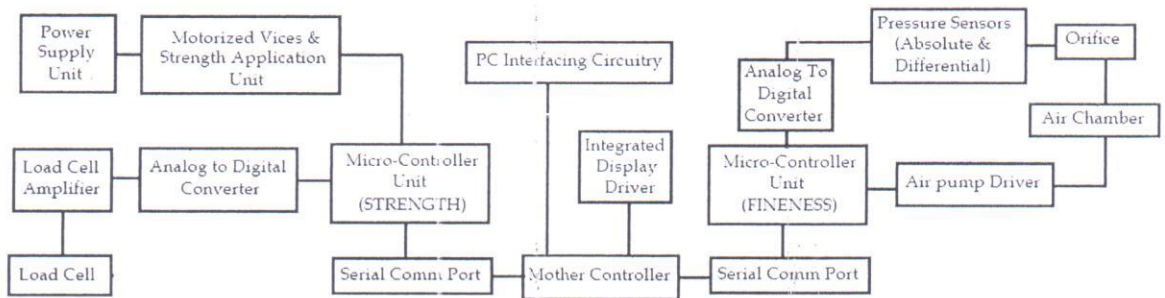
The facility of electronic calibration method will apply on the instrument for both strength and fineness part. In electronic part the printed circuit boards will have to be high quality double sided through-hole in nature for best result. The front panel will consist of integrated display along with necessary configuration switches for operation. The instrument should have necessary firmware for computer interfacing through USB port of preferably laptop which may be required in future for operation and data collection purpose. The instrument must have both manual and computer operation facility.

S. Mukherjee
22/02/2024
Project Officer
ICAR
International Institute of Natural Fibre Engineering and Technology
12, Regent Park, Kolkata - 700 000

The deliverable components:

1. Motors, Vice Units, Blocks, Gear, Pulley, Structural Base, Limit Switch etc
2. Load Cell Sensor Amplifier, Motor Drivers, Connectors & Switches
3. Air Pump, Air Chamber, Fibre Holder, Orifice, Connectors
4. Schematic & PCB Development, User Interface
5. Mother Controller, Integrated Display Unit
6. PC Interface & Firmware
7. Encasing & Assembly
8. Electronic calibration system for the instrument
9. Laptop as data collection terminal

Details of electrical/electronic parts in terms of block diagrams and its required specifications



Specifications of electrical/electronic blocks :

Power supply : 12V DC 10A, +/-12V DC 500mA, 5V DC 500mA
Motors : 12V, 100 RPM Fwd/Rev
Analog to digital IC : 16 bit
Load cell 200Kg 2mV/V
Load cell amplifier : Differential type
Microcontroller : 8 bit 11.0592 MHz
Serial Comm : TTL 5V level

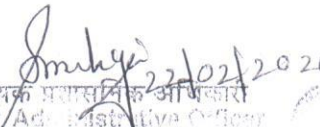
Integrated display : LCD multiline type
Switches : Rugged panel type
Air pump driver : Push pull 230V AC
Pressure sensor : Absolute 0.1-4.5psi 0.2-4.7V output
Differential 0.3 to +0.3psi 0.5-4.5V output
PC Interface : USB port type

The facilities and the inputs which will be provided to the contractor by ICAR NINFET

- (i) The contractor will have to complete manufacturing process in their own premises
- (ii) The flow chart for the firmware development in electronic controller will be provided by ICAR NINFET
- (iii) The block diagram and necessary specifications will be provided by ICAR NINFET

Terms & Conditions

1. Payment will made after the complete delivery and installation of item and on presentation of pre-receipt bill (tax invoice) along with challan by means of electronic transfer mode only. Bank Account No, Account Holders Name, Branch Name and IFSC code of the bank must be given in NEFT mandate form, failing of which your payment will not be released. Tax will be deducted at source as per rule, if applicable.
2. Price is inclusive of all taxes and FOR delivery at ICAR NINFET. Delivery should be done within 30 days from the date of issue of the order.
3. Your bill must include our order reference no., GSTIN No. and contact details of the firm/person. However the GST rate and amount should be mentioned separately in your invoice. Bill should be addressed to "The Director, ICAR NINFET, 12 Regent Park, Kolkata-700040".
4. Warranty- The supplied instrument must have one year warranty on mechanical and electronic components starting from date of installation against manufacturing defects. The free technical support should be given during sample testing during initial phase of operation of instrument within 2 months from date of installation


सहायक प्रशासक अधिकारी
Asst. Administrative Officer
22/02/2020

5. The Schematic diagram, Circuit diagram, Software or Firmware code or any other relevant documents for development of equipment will be the sole property of ICAR NINFET and to be handed over to ICAR NINFET on or before installation of the equipment. The IPR knowhow, of the developed equipment will be the commercial secret and to be remained with ICAR NINFET.
6. The Operating & Service Manual and valid calibration Certificate, if any (in English Language) should be handed over during the time of delivery. Training should be imparted to the personnel of ICAR NINFET by the supplier for operation and maintenance of instrument **free of cost** after delivery.
7. Installation/Fitting of the item should be done by your technical/service person at ICAR NINFET free of cost, only after which the bill will be processed for payment. No TA/DA will be given for technician(s) employed for the purpose.
8. Item delivered will be inspected at the Purchaser's office and will be rejected if they do not conform to the standard, specifications and drawings mentioned in the tender/order. Inspection of the goods or demonstration/test/trial-run of the equipment shall be done by the Purchaser at his end. Stores rejected on inspection/Test will have to be replaced by your firm free of cost and on any such occasion, if arises, all the charges for packing, forwarding/handling, shipping/transportation must be borne by your firm.
9. Contractor shall be responsible for the faithful compliance of scope of work mentioned in the tender/order. Any authorized person may inspect the work carried out by the agency. Shortfall, if any, will be communicated to the agency/ firm in writing/ email by ICAR NINFET. In the event of any shortfall or services found unsatisfactory, Liquidated Damage clause will be invoked by levying a penalty @Rs. 500/- per day. The Liquidated Damage amount will be deducted from the bill of the firm.
10. Performance security at the rate of 10%(ten percent) of the ordered value (incl of GST) should be deposited by your firm within 10 days from the receipt of Purchase Order along with a formal acknowledgement of acceptance of the order. **Performance Security should be in shape of Demand Draft in favour of ICAR NINFET or bank guarantee and must be made valid till the end of 60 days beyond the expiry of the all contractual obligations including the Warranty obligations calculated from the date of installation.**
11. The concessional GST certificate for GST @5% as per Ministry of Finance Notification No. 45/2017-Central Tax (Rate) dated 14th November, 2017 is attached herewith for further onward action at your end.
12. Delay in completion of delivery/installation will attract penalty @0.5% of the order value per week.
13. Other T&C mentioned in our Tender and your quotation will invariably be applicable with this order.

The item(s) along with bills in duplicate should be handed over to Dr. D.P. Ray, Pr Scientist, QE&I Division and PI, CRP NIRJAFT 02 of ICAR NINFET.

[Signature] 22/02/2020
Asstt. Administrative Officer (Adm III)

Copy to

1. AAO, Adm II-Sanction of Director dated 21/02/2020 for Rs 469350/- is hereby conveyed and expenditure to be met out from Project/CRP-2/Res Exp/2019-20/201/1007188/510025/04
2. FAO, ICAR NINFET
3. Dr. D.P. Ray, Pr Scientist, QE&I Division & PI, CRP NIRJAFT 02 for information
4. Dr. Biplab Saha, Vig Officer for information