



भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली
मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित
सैक्टर 81, नॉलेजसिटी, प॰ओ॰ मनोली, ए॰ ए॰ ए॰ नगर, मोहाली, पंजाब 140306
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Established by Ministry of Human Resource Development, Govt. of India)
Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab
PAN No. - AAAAI1781K GST: 03AAAAI1781K2ZS

• Phone : +91-172-2240086 & 2240121 • Fax : +91-172-2240124, 2240266 • <http://www.iisermohali.ac.in> • Email: stores@iisermohali.ac.in

CPPP/Institute Website

IISERM(1083)18/19-Pur

Dated : 22.11.2018

NOTICE INVITING E-TENDER

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** for **Supply and installation of Meteorological Station with Tripod, mast and independent power supply (Solar Panel & Battery) for field deployment including sensors** from reputed companies/firms/ individuals/ societies etc. those are in the similar business at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app>& Institute website www.iisermohali.ac.in.

-sd-

(Mukesh Kumar)
Assistant Registrar (S&P)



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E-TENDER NOTICE

Tender Ref.- IISERM(1083)18/19-Pur

Dated :- 22nd November, 2018

Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	22 nd November, 2018	6:00pm
2.	Tender Document download start Date & Time	22 nd November, 2018	6:00pm
3.	Bid Submission start Date & Time	22 nd November, 2018	6:00pm
4.	Bid Submission End date and Time	06 th December, 2018	Upto 11:00am
5.	Tender opening Date and Time	07 th December, 2018	At 11.30 am

Online tenders are invited on behalf of the Director, IISER Mohali in **TWO BID SYSTEM** for following item(s) from the original manufacturer/supplier at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app> & Institute website www.iisermohali.ac.in. Tender fee in shape of DD/Banker Cheque of Rs 590/- (Non-refundable) and EMD of Rs.25000- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali. However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summarily.

The Original EMD and Tender Fee should be sent to:

Assistant Registrar (S&P)
Indian Institute of Science Education and Research,
Mohali Sector 81, SAS Nagar, Mohali, Punjab,
India, Pin: 140306

Non-receipt of original EMD and Tender Fee will lead to rejection of tender.

Item Details:

S. No.	Details of Specifications of the Stores	Qty.
1.	<u>Supply and installation of Meteorological Station with Tripod, mast and independent power supply (Solar Panel & Battery) for field deployment including sensors</u> <u>Technical Specifications:</u> As per Annexure-A	---
a)	Air temperature and humidity sensors	1 Nos.
b)	Air temperature and humidity sensors	1 No.
c)	Barometric pressure sensor	1 No.
d)	Soil moisture EC and Temperature sensor	1 No.
e)	Rain Gauge	1 No.
f)	Pyranometer	1 No.
g)	PAR Quantum sensor	1 No.
h)	2D-ultrasonic anemometer	1 No.
i)	Power Supply	1 No.
J)	Mounting Structure	1 No.
k)	Data Logger	1 No.

SUBMISSION OF TENDER

- I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. <https://eprocure.gov.in/eprocure/app> only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and EMD. Late tenders will not be accepted.
- II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.
- III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.
- IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped.
- V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

INSTRUCTIONS

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.
2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID.
3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. Conditional tenders will be summarily rejected.
4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.
5. THE INSTITUTE IS EXEMPTED FROM EXCISE AND CUSTOM DUTY under notification no-TU/V/RG/-CDE(1062)/201 CUSTOM DT.30.08.2016.
6. Tax: This Institute is not exempted from the payment of GST. The current rate (i.e. percentage of GST should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, GST number duly self-attested.
7. Concessional GST is applicable for all the items purchased for Research labs vide Ministry of Finance, notification no. 45/22017 dated 14.11.2017 and 47/2017 dated 14.11.2017.
8. Bidder/s quoting in currency other than **Indian Rupee (INR)** should explicitly mention the currency in which tender quoted wherever applicable in Technical Bid along the tender documents.
9. The delivery period should be specifically stated. Earlier delivery will be preferred.
10. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.
11. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms.
12. The right to reject all or any of the quotation and to split up the requirements or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website <https://eprocure.gov.in/eprocure/app> and <http://www.iisermohali.ac.in>
13. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

–sd/-
(Mukesh Kumar)
Assistant Registrar (S&P)

Annexure -A

<p>Meteorological station with tripod, mast and independent power supply (Solar panel & battery) for field deployment including the listed sensors</p>	<p>Air temperature and humidity sensors (2) Barometric pressure sensor (1) Soil moisture EC and Temperature sensor (1) Rain Gauge (1) Pyranometer (1) PAR Quantum sensor (1) 2D-ultrasonic anemometer (1) Data logger with enclosure (1) Tripod and Mast (1) Solar panel & Battery (1)</p>
<p>Air Temperature & Humidity sensor with radiation shield – sensor 1 Temperature range: Output resolution of Temperature sensor: Accuracy: of Temperature sensor Response time of Temperature sensor: Relative Humidity measurement range: Output resolution of RH sensor: Accuracy of RH sensor: Short term Hysteresis of RH sensor: Temperature dependence of RH sensor: Stability of RH sensor: Response time of RH sensor: Calibration traceability: Cable length: Radiation shield: Mounting structure:</p>	<p>-30°C to + 60°C or larger 0.1°C or better ± 0.5 °C or better between +5 and +40 ±1.0°C for -30°C to +5°C and +40°C to +60°C 120 s or less 0 to 100% at -20°C to 50°C or larger 0.1% or better ±2% from 10% to 90% RH ±4% at <10% RH and >90% RH <1% RH ±2% or less from -20°C to 50°C ±1% per year 1 minute or less NIST and NPL standards ≥10 m 6-Plate radiation shield with U-bolts for attachment to cross arm or mast Cross arm of minimum 2 ft length</p>
<p>Air Temperature & Humidity sensor with radiation shield – sensor 2 Temperature range: Output resolution of Temperature sensor: Accuracy of Temperature sensor: Response time of Temperature sensor: Relative Humidity measurement range: Output resolution of RH sensor: Accuracy of RH sensor: Short term Hysteresis of RH sensor: Temperature dependence of RH sensor: Stability of RH sensor: Response time of RH sensor: Calibration traceability: Cable length: Radiation shield & Mounting structure:</p>	<p>-30°C to + 60°C or larger 0.1°C or better ± 0.5 °C or better between +5 and +40 ±1.0°C for -30°C to +5°C and +40°C to +60°C 120 s or less 0 to 100% at -20°C to 50°C or larger 0.1% or better ±2% from 10% to 90% RH ±4% at <10% RH and >90% RH <1% RH ±2% or less from -20°C to 50°C ±1% per year 1 minute or less NIST and NPL standards ≥10 m 6-Plate radiation shield with band clamp for attachment to pole</p>
<p>Barometric pressure sensor: Accuracy: Linearity: Hysteresis: Repeatability: Resolution:</p>	<p>±1 mb or better from 0°C to 40°C ±2 mb or better from -30°C to 0°C and 40°C to 60°C ±0.5 mb or better ±0.05 mb or less ±0.03 mb or better ±0.01 mb or better</p>

Long term stability:	± 0.1 mb per year
Response time:	< 120 s
Cable length:	≥ 10 m
Soil Moisture, EC and Temperature Sensor:	With rod insertion accessory
Sensing volume:	Minimum 3500 cm^3
Soil temperature measurement range:	-10° to $+ 70^\circ\text{C}$
Soil temperature measurement accuracy:	$\pm 0.5^\circ\text{C}$ or better
Soil temperature measurement precision:	$\pm 0.1^\circ\text{C}$ or better
Soil volumetric water content range:	5% to 50%
Soil volumetric water content precision:	$\pm 0.1\%$ or better
Soil volumetric water content accuracy:	$\pm 3\%$ or better where solution EC $\leq 10 \text{ dS m}^{-1}$
Soil electrical conductivity measurement range:	0 to 8 dS m^{-1} for both solution EC and bulk EC
Soil electrical conductivity measurement precision:	$\pm 1\%$ of EC
Soil electrical conductivity measurement accuracy:	$\pm 6\%$ of reading or better
Relative dielectric permittivity measurement range:	1 to 80 or more
Relative dielectric permittivity measurement precision:	$\pm 5\%$ of reading or better
Relative dielectric permittivity measurement accuracy:	$\pm 0.05 \text{ dS m}^{-1}$ or better
Cable length:	≥ 10 m
Rain Gauge:	Tipping bucket with magnetic momentary contact reed switch
Switch ratings:	Closure time: 150 ms or less Bounce settling time 1 ms or less
Operating temperature range:	0°C to 50°C
Rainfall per tip:	0.01 inch (0.254 mm) or less
Accuracy:	1% for less than 50 mm per hour
Cable length:	≥ 10 m
Pyranometer:	
Spectral range (50% points)	285-2800 nm
Spectral selectivity (350 nm – 1500 m)	$< 3\%$
Sensitivity:	7-14 $\mu\text{V/W/m}^2$ or better
Maximum operational irradiance:	$4,000 \text{ W/m}^2$
Zero offsets:	$< 7 \text{ W/m}^2$ (due to thermal radiation of 200 W/m^2) $< 2 \text{ W/m}^2$ (due to temperature change o 5K/hour)
Non-stability (change/year):	$< 0.5\%$ per year
Non-linearity (100 to $1,000 \text{ W/m}^2$):	$< 0.5\%$
Directional response (up to 80° with 1000 W/m^2 beam):	$< 10 \text{ W/m}^2$
Tilt response (0° to 90° 1000 W/m^2):	$< 0.5\%$
Field of view:	180°
Operational temperature range:	-30°C to $+ 60^\circ\text{C}$ or larger
Temperature dependence of response:	$\leq \pm 1\%/^\circ\text{C}$ between -10°C and $+40^\circ\text{C}$
Humidity range:	0-100%
Ingress protection rating:	67 or better
Accuracy of bubble level:	0.2° or better
Mounting structure:	Mounting with bubble level and adjustment screws and mounting plate for fixing to mast
Cable length:	≥ 10 m
PAR Quantum Sensor:	
Spectral range (50% points)	$400\text{-}700 \text{ nm} \pm 5 \text{ nm}$
Sensitivity:	$4\text{-}10 \mu\text{V}/\mu\text{mol/m}^2 \cdot \text{s}$ or better
Maximum operational irradiance:	$10,000 \mu\text{mol/m}^2 \cdot \text{s}$
Non-stability (change/year):	$< 2\%$ per year
Non-linearity (0 to $10,000 \mu\text{mol/m}^2 \cdot \text{s}$):	$< 1\%$
Directional response (up to 80° with $1000 \mu\text{mol/m}^2 \cdot \text{s}$ beam):	$< 30 \mu\text{mol/m}^2 \cdot \text{s}$
Field of view:	180°
Operational temperature range:	-30°C to $+ 60^\circ\text{C}$ or larger
Temperature dependence of response:	$\leq \pm 0.2\%/^\circ\text{C}$

Humidity range: Ingress protection rating: Accuracy of bubble level: Mounting structure: Cable length:	0-100% 67 or better 0.2° Mounting flange with bubble level and adjustment screws and screw in mounting rod for fixing to mast ≥ 10 m
2D-ultrasonic anemometer for measuring wind speed and wind direction: Operating temperature range: Measurement frequency: Output options: Wind speed range: Wind speed resolution: Wind speed accuracy Wind direction range: Wind direction resolution: Wind direction accuracy: Cable length:	-30°C to + 60°C or larger 40 Hz or better block averaged to an output of 1 Hz Polar (direction and speed) or orthogonal (Ux and Uy wind) 0 to 60 m/s 0.1 m/s or better ±2 % or better at 12 m/s 0° to 359° (no dead band) 1° ±3° ≥ 10 m
Power Supply	Solar panel with minimum 20W (more if required by the sensors & data logger), charge controller with 26 Ah SMF Battery
Mounting structure:	Tripod and Mast of minimum 3 m height with all necessary accessories to mount and keep the mast stable in the field at wind speeds up to 20 m/s Enclosure for data logger with accessories for mounting
Data Logger	<ol style="list-style-type: none"> 1. Must be suitable to supply power and record data from all the sensors specified above. 2. Must support serial sensors with RS-232 and RS-485 native 3. Must have surge and over-voltage protection on all terminals 4. Must be suitable for flexible power input from solar panel, dc power supply and 12 V battery 5. Must have OS and must be programmable with CR Basic or SCWin program generator and must be PakBus compatible 6. Must be supplied with internal storage and should have option to expand storage (e.g. Micro SD card) to store 16 GB data 7. Clock Accuracy must be ±3 minutes per yer and should have the option of GPS correction 8. Must have USB or USB micro slot for connection with PC. If slot for connecting to USB is different, then it must be supplied with suitable cable.