



राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर हमीरपुर 177005-(हि .प्र.)

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)-177005

[An Institute of National Importance under Ministry of Education (शिक्षा मंत्रालय)]

### E-TENDER NOTICE

Sealed online e-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned below.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	Supply and installation of Battery Management System Workbench For detailed specifications etc please refer to SBD	1	20400	60 days

1. Availability of bid document and mode of submission:-The bid document is available online and bid should be submitted in online mode on website <http://www.eprocure.gov.in/> and <http://www.nith.ac.in/>. Bidder would be required to register in the web-site which is free of cost. For submission of bids, the bidder is required to have Digital Signature Certificate (DSC) from one of the authorized certifying authorities (CA).

2. Key dates: (1)

1	Date of online publication	20.08.2024 at 6.00 PM
2	Document download start and end date	20.08.2024 to 12.09.2024 10.30 AM
3	Bid submission start and end date	20.08.2024 to 12.09.2024 10.30 AM
4	Physical submission of EMD, technical documents and cost of tender document etc.	On or before 05.30 PM on 12.09.2024
5	Date of opening of technical bid	13.09.2024 at 11.30 AM

(II) Objections/representation if any against the bidders will be entertained only within three days after publication/uploading of technical bid opening summary on net and thereafter that the date of opening of financial bid of technically qualified bidders will be published /uploaded on net.

3. Tender Details:-The tender Documents shall be uploaded in 2 cover:-

Cover 1:-Shall contain scanned copies of all "Technical Documents/Eligibility information".

Cover 2:- Shall contain "BOQ/Financial Bid", where supplier will quote his offer for each item.

(a) Submission of Original Documents: The bidders are required to submit (a) original demand draft towards the cost of bid document if any and (b) original bid security/Earnest Money deposit (EMD) and other technical documents in the Store & Purchase section, NIT Hamirpur-177005 (HP) as specified in the key dates of **Sr. no.2**

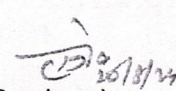
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on tender opening dates & schedule, failing which the bids will be declared non-responsive. EMD in the form of DD/FDR must be attached with in favour of Director, NIT, Hamirpur (H.P) -177 005. The EMD should remain valid for a period of 90 days beyond the final bid validity period. EMD of unsuccessful bidders shall be returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released after successful execution of supply order.

4. BID OPENING DETAIL: - The bids shall be opened as per schedule specified in the key dates of **Sr. no.2.** in the store & Purchase section, NIT, Hamirpur by the authorized officer. In their interest the tenderer are advised to be present along with original documents at the time of opening of tenders. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time & venue.
5. The bids shall remain valid for acceptance for a period of not less than 180 days after the deadline date for bid submission. Other details can be seen in the bidding documents. The officer inviting tender shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt notify the bidder of any bid updates. The Employer shall not be liable for any information not received by the bidder. It is the bidders responsibility to verify the website for the latest information related to the tender.
6. The copy of enlistment order & renewals, Copy of PAN issued by Income tax Department and copy of GST Certificate must accompany in the cover-1
7. The bidder preferably must have successfully supplied similar items in recent years. The bidders shall have to produce supporting documents giving date of award, date of commencement and completion from the concerned competent authority and should be included in cover-1
8. Destination: F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must include the charges for Packing, Forwarding, Freight, etc., if any.
9. Price/Rate: The price of items may be quoted in Indian rupees.
10. GST:- All the firms may invariably mention their GST/PAN numbers on tender failing which quotations may not be considered valid. Further, this Institution does not issue any Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.
11. The bidders/firms have to supply the complete catalogue/brochure of the products to be supplied along with the Technical bid.
12. The technical bids will be evaluated on the basis of terms & conditions of the tender and details of the product to be supplied as per condition 11 of the tender notice. The committee reserves the right to reject any technical bid on the basis of technical specifications/catalogue/brochure submitted.
13. Conditional/ telegraphic tenders shall summarily be rejected.
14. For any clarifications bidders are requested to contact FI (Purchase), NIT Hamirpur at his E-mail ID i.e. [fip@nith.ac.in](mailto:fip@nith.ac.in).
15. The tender/bid shall be kept in a sealed envelope superscribed as "Tender for (Name of work and date of opening\_\_\_\_\_".
16. The jurisdiction of the law of court shall be at Hamirpur (HP).

No: NIT/HMR/DoEE/S&PS/ 2024/2967 — 69

  
FI (Purchase)  
Dated: 20-08-2024

Copy forwarded to the following for information please:-

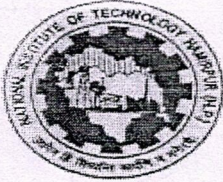
1. The HOD, DoEE, NIT, Hamirpur



2. Dr.Jiwanjot Singh, Assistant professor, DoEE, for information please.
3. The FI (CC), for getting the advertisement displayed in the Institute website for wider publicity under head: - **Supply and installation of Battery Management System Workbench for Electrical Engineering Department of NIT Hamirpur.**

FI (Purchase)





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NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)-177005

[An Institute of National Importance under Ministry of Education (शिक्षा मंत्रालय)]

NIT-SBD

**Subject: - Supply & installation of Battery Management System Workbench for DoEE of NIT Hamirpur.**

Sealed online E-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned in the tender notice.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	<b>Supply and installation of Battery Management System Workbench</b> For detailed specifications etc please see below	1	20400/-	60 days

**Item Name: Battery Management System Workbench for Education & Research**

Sr.	Item Name & Brief Description	Qty.
1	<p><b>Battery, Cell, Smart BMS with CAN Protocol Training Workbench</b></p> <p>Multi-programming BMS with temperature sensor; suitable for Li-ion (3.7V) and LiFePO4 (3.2V) should support both. Maximum continue discharge current - 40A, peak current support - 80A, Size not more than: 165*114.5*30 mm, Balance Max current: 260mA, Connectivity-Bluetooth, UART, CAN. Support for iOS &amp; Android Mobile App. To check various parameters like BMS View, BMS Parameters, cell voltage, temperature, SoC etc. Must have over charge protection, balance protection, over discharge voltage &amp; current protection, out load short cut protection, temperature protection etc. Qty - 01</p> <ul style="list-style-type: none"> <li>Regular / Normal BMS For LFP Cells Compatible – Qty – 01</li> <li>Regular / Normal BMS For NMC Cells Compatible – Qty - 01</li> <li>DIY EV Battery Pack Making Setup Including:</li> <li>Prismatic NMC cell - 20Ah or higher , (Qty. – 20)</li> <li>Prismatic LFPCell –10Ah or higher(Qty. – 20)</li> <li>Silicon wire – (5 mtr or more)</li> <li>PVC Heat Shrink Sleeve: 2 Mtr or more)</li> <li>Barley paper (5 mtr or more)</li> <li>Connecting Bus Bars – 50 or more</li> <li>Tool Kit for DIY Battery Packs with all accessories for battery pack prototyping, with CAN &amp; UART Cable – 01 No.</li> <li>Battery IR Tester 0 to 100 V or more, – Qty.- 01</li> <li>Workstation: Core i5, 12<sup>th</sup> Gen, 8 GB RAM, 512 SSD, Win Pro 11, Keyboard, Mouse, Monitor 22 inch or above.</li> <li>Workbench Dimensions</li> <li>Width: 1500 mm or more</li> <li>Depth: 750 mm or more</li> <li>Height: 5.5 feet or more</li> <li>Drawers / Compartment with lock: : 3</li> <li>With LED down lighting</li> <li>Power Switch Sockets: 15 A – 02 Qty. &amp; 6A: 06 Qty.</li> <li>With Laptop Foldable flap</li> <li>Should be manufactured industrial grade 40x40 mm aluminum profile structure with 25 mm thickness top and Castor Wheel with level adjustment provisioning.</li> </ul> <p><b>Other Features</b></p> <ul style="list-style-type: none"> <li>BMS Thermal Management: Battery Reliability and Battery Safety Operating conditions like driving profiles, high and low atmospheric temperatures, and charging rates all directly</li> </ul>	01

152



impact battery cell temperatures. Accounting for the interplay between all contributing conditions requires sound and efficient thermal management solutions.

- Battery Design for Normal Operating Conditions: Battery architecture design with optimal cooling with the structural specifications feature to check problems faster and to develop reliable product. Tool must be able to work on battery thermal issues under normal & other operating conditions with various electrical analysis and electrothermal analysis feature for reliability and battery life testing. Topology optimization feature for battery pack busbars generated heat, thermal dissipation, and provision to electrical load to equally distribute across all cells within the battery pack.
- Thermal Runaway Testing: Analyzing the optimal balance between energy density and safety is essential. High-density battery packs for making efficient and resistant to thermal runaway. Should be able to perform combined thermal analysis and strength mockup at the system level to account for battery weight and structural integrity, for protecting vehicle occupants and the battery in the event of a crash.
- Temperature evolution for duty cycles, Skin effect visualization, User defined quantities
- Maps, iso values and vector plots, Animations, 2D and 3D curves, Spectral analysis
- Export capabilities, Results preview during solving process, Automatically export results with design data as document
- Battery Management System Design Capability: E-Drive Integration and Controls: Should have battery and e-powertrain system simulation capabilities and should address voltage, current, and temperature as well as efficiency, safety, range, and dependability. Digital Twin for Optimal EV Battery Management Phenomena such as battery aging and other critical electrification challenges, including battery design and performance optimization for thermal management, multiphysics verification, and systems integration. For all stages – from concept design to end-of-life planning
- Rapid Battery Concept Design: Tool should apidly create, test, and compare different battery cell, module, and pack configurations. Tool Should have Energy Storage Library with predefined battery cell and pack models and equivalent circuit models (ECMs) for simplifying complex battery development process.

#### Battery Testing Equipment

Battery Charger, Discharger Equipment, 10-99V 20A 1CH Type Digital, Display Type LCD Suitable For Battery Cell Testing Maximum Voltage 99V 20A 1CH or more

Battery Charger, Discharger Equipment, 10-99V 20A 1CH Type Digital, Display Type LCD Suitable For Battery Cell Testing Maximum Voltage 99V 20A 1CH Battery Tester

- Input Power: AC200V~245V50/60HZ
- Applicable Batteries: Lead-Acid/Lithium batteries
- Charge Con-Voltage: 9V-99V
- Discharge Cut-off Voltage: 9V-99V
- Discharge Current: 0.5A-20A
- Charge Current: 0.5A-10A
- Operation Method: Panel/Online
- Instrument displays by LCD, each index is clear at a glance.
- The parameter setup and parameter switching are set and switched by a "START" switch and a "SET" knob. All parameters (voltage, current, mode) settings have the saving function.
- Intelligent speed fan can run continuously, delay the power-off of the fan, and blow off the remaining heat.
- Polarity protection, anti-reverse connection, and soon.
- Each circuit is the independent module, no influence each other
- Maximum cycle number is 99, which can be used as battery aging equipment.
- Data protection startup: If the connection cables disconnected from the battery during the charging and discharging, after reconnecting the cables with the battery, press and hold the "Start" button to continue working.
- Power-off memory function.
- Modular design, easy maintenance and replacement of accessories.
- Two operation methods: Panel & Software. After installing the specified software, the device can be managed and operated through the computer: charge-discharge setting, data sampling, test report imports and exports, test data analysis, charge-discharge curves drawing.
- One computer can manage multiple devices simultaneously through a switch, make testing more efficient and simpler.
- Input Power: 900 W approx.
- Applicable Batteries: Lithium-ion and lead-acid battery pack
- Basic Functions: Charge, Discharge, Auto cycle charge and discharge
- Data analysis and comparison, Voltage Charge Constant Voltage Range: 9V-99V, 0.1V stepping, Discharge Cut-off Voltage Range: 9V-99V, 0.1V stepping
- Tolerance: <0.03V, Current Charge Current: 0.5 – 10 A adjustable
- Charge Cut-off Current: 0.1 – 5 A adjustable
- Discharge Current: 9V-21V: 0.5-10A adjustable
- 21V-99V: 0.5-20A adjustable, Tolerance: <0.03A
- Data Recording Data Recording Conditions Time interval
- Voltage interval, Current interval, Charge Charge Modes: Constant current & voltage charge, Charge Cut-off Conditions: Voltage, current, time, capacity



<ul style="list-style-type: none"> <li>Discharge Discharge Modes: Constant current discharge, Discharge Cut-off Conditions: Voltage, current, time, capacity, Cycle Cycle Index: 1-16 times</li> <li>Protection Power-down protection, Reverse connection, Over-temperature protection</li> <li>Over-voltage protection, Short-circuit protection, IP Grade IP20, Channel Control Mode Independent control, High Voltage Insulation Between Channels AC1000V/2min Normal</li> <li>Voltage &amp; Current Test Sampling Four-core wires connection</li> <li>Noise &lt; 76 dB</li> <li>Host Computer Communication Method based on TCP/IP protocol</li> <li>Test Report Output Method Excel, Server Disk Configuration &gt;200MB</li> <li>Server Operation System Windows XP, Windows 7/8/10</li> <li>Communication Port LAN</li> <li>Operation Methods Panel/Software</li> <li>Operation Ambient Temperature 0 °C - 40 °C, Storage Temperature -10 °C - 50 °C</li> <li>Operation Ambient Humidity ≤ 70 % RH (No condensation)</li> <li>Storage Ambient Humidity ≤ 80 % RH (No condensation)</li> </ul> <p><b>EV Battery Cell Balancer, Bluetooth Enabled EV Battery Cell Balancer, Bluetooth Enabled</b></p> <p>It is a balanced solution for large-capacity series lithium battery packs Management system. The equalizer uses a super capacitor as a medium to achieve active energy transfer equalization. The equalizer is suitable for 2 to 24 strings of battery packs with voltage acquisition and equalization.</p> <p>Features</p> <ul style="list-style-type: none"> <li>◆Support 2 ~ 24 cells battery packs., Support all battery on the market.</li> <li>◆Active, balanced energy transfer, the delta-voltage between cells of ◆battery ≤ 5mV.</li> <li>◆Cell voltage acquisition range 1V ~ 5V, accuracy ±1mV.</li> <li>◆The balance-current is set independently within the range of 0.3 ~ 4A</li> <li>◆Bluetooth function, equipped with mobile APP, support Android and IOS.</li> <li>◆Balance-Wire resistance detection to find wiring errors in advance.</li> <li>◆Operating power supply: 25V~100V</li> </ul> <p>Operating conditions</p> <p>a) Temperature range: -20°C~70°C., b) Operating power supply: 25~100V, Battery power or external power supply can be used.</p> <p>c) Total current consumption : Work mode 10mA@100V, Idle mode 6mA@100V</p> <p>Active Balancer Equalizer 24s 12-72volt, 4A max - NMC/ LFP - For Lithium Battery Packs</p>	
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**Note:**

- Installation, commissioning & training for all the supplied items should be done and demonstrated onsite at NIT Hamirpur.
- Vendor participating will be responsible for the interfacing of the hardware with software i.e. complete integration & hardware plus software training has to be provided by the vendor.
- Vendor quoting must be the OEM or should have bid-specific OEM authorization for the quoted items.
- All hardware items must have standard one year OEM warranty with free updates, updates & upgrades during the warranty period.
- Software licenses must be fully featured (Industrial Grade) Perpetual Academic Research Licenses, Student Edition licenses with limited capabilities or features will not be considered.
- Vendors participating may be called for online / onsite technical presentation with demo unit for product verification purposes.

**TERMS AND CONDITIONS:-**

1. **Validity:** Minimum validity of the quotation will be 03 months from the date of opening of the quotation/tenders.
2. **Time Limit:** - The firm/supplier has to the supply and install the equipments within 60 days from the date of the award letter.
3. **Guarantee/warranty:** - The supplier has to provide equipment guarantee/warranty supplied for 01 year from the date of successful installation of the equipment supplied. (Certificate of the same to be given by the supplier)
4. **Demonstration & Training:-** The supplier will have to demonstrate and impart training to concerned users at NIT, Hamirpur after successful supply & installation. (Certificate of the same to be given by the concerned user/indenter).
5. **EMD:** EMD in the form of DD/FDR /Bank Guarantee must be attached in favour of Director, NIT, Hamirpur (H.P) -177 005. The EMD should be remained valid for a period of 120 days beyond the final bid validity period. EMD of unsuccessful bidders shall be



returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released only after submission of 3 % **Performance bank Guarantee** which should be valid till expiry of warranty period. EMD/PBG exemption is permissible as per Govt. rules.

6. **Make in India preference:-** NIT Hamirpur shall compare all substantially responsive bids to determine the lowest evaluated bid. The Institute is following and abide with the revised Public Procurement (Preference to Make in India), Order No. P- 45021/2/2017 – PP (BE-II) dated 16.09.20 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India & subsequent instructions of Ministry. Accordingly, preference will be given the make in India products while evaluating the bids. However, it is sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India along with respective documentary evidence in the technical bid itself.
7. **Technical Evaluation:-** Technical evaluation of the participating firms will be done strictly on the basis of catalogues/brochures/literature/technical details of the product to be supplied along with relevant experience & fully complying all the terms & conditions of the SBD & tender notice. **It is mandatorily to physically submit the technical literature/catalogue of the product to be supplied along with make & model no. failing which the technical bid of the participating bidder will be straightforward rejected.** NIT Hamirpur also reserves the right to seek clarification from any of the participating firm during technical evaluation. The participating bidder has to submit undertaking that they fully complies to our above-mentioned technical specifications.
8. **Destination:** F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must be quoted inclusive of all taxes and charges.
9. **Penalty:** In case the firm/vendor fails to supply the equipments within the stipulated period penalty without assigning any reasons @ 1/2% (half percent) of the total value of the item covered in order as penalty per day subject to a maximum of 5% (five percent) will be imposed unless extension is obtained in writing from the office on valid ground before expiry of delivery period
10. **Price/Rate:** The price of equipment/items may be quoted as per BOQ clearly mentioning the Basic rate & GST in the specified columns of BOQ in Indian rupees. **Tender will be awarded to the participating bidder who will be lowest in terms of total of all items**
11. **GST:** - All the firms may invariably mention their GST/PAN numbers on quotation/tender failing which quotations may not be considered valid. Further, this Institution does not issue any C/D Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.
12. **NIT/NIQ Opening:** Representative of the firm may be present at the time of opening of the Quotations, if it wishes.
13. **Payment:** 100% payment shall be made immediately after receipt of material in good condition and successful installation of the same.(Certificate of the same to be given by the indenter/inspection committee NIT, Hamirpur)
14. **Right of Acceptance/Rejection:** Right of acceptance and rejection of any tender/quotation in part or full without assigning any reason are reserved with the institution authorities. The number of items to be purchased could be increased or decreased depending on the requirement of end user.
15. In case of any dispute the jurisdiction of Hamirpur (HP) Courts shall apply. For any clarifications please contact:- Dr.Jiwanjot Singh (Mobile 9872581018)

FI (Purchase)