TENDER DOCUMENT

TERMS AND GENERAL CONDITIONS TOGETHER WITH
SPECIFICATIONS/CONFIGURATIONS TO BE ABIDED BY THE TENDERERS:

01. INTRODUCTION:
The Tender is given in accordance with the Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000 & 2012 as amended from time to time.


B. Designation and Address of the Tender Inviting Authority

The REGISTRAR, University of Madras,
Centenary Building, Chepauk, Chennai – 600 005.

C. Nature of work to be carried out as per specifications/Configurations furnished in ANNEXURE - I

Tender for the supply of “Solar Simulator with Accessories”

D. Supply/work to be carried out at

National Center for Nanoscience and Nanotechnology,
University of Madras, Guindy Campus, Chennai

E. Total Value of the Contract

Rs.21,00,000/- approximately as detailed below:

F. Earnest Money Deposit (EMD) (1% from the total value) as detailed above to be paid

Rs. 21,000/- by way of Demand Drafts drawn in favour of “The Registrar, University of Madras” payable at Chennai and enclosed in the Sealed Technical Bid Cover. [THIS AMOUNT SHOULD NOT EXCEED OR LESSER THAN THE PRESCRIBED AMOUNT AND IT IS FOUND & DD to be taken in nationalized Bank only]

G. Tender Document Terms & General Conditions together with Specifications/Configurations and Technical Bid / Commercial Bid available at

www.unom.ac.in
From 9th Aug. 2021 to 30th Aug. 2021

H. Last date & time for Submission of Tender

31st Aug. 2021 Till 2.00 P.M. at The Registrar’s Secretariat, UNOM, Chepauk, Chennai-5

I. Date, Time & Venue of Opening of Tender

31st Aug. 2021 at 3.00 P.M. at The Registrar’s Secretariat, UNOM, Chepauk, Chennai-5

J. Procedure for submission of Tender:

By way of TWO-COVER SYSTEM as detailed in Sl.No.6 & 7

K. Contact Section for clarification

RSP Purchase Section, University of Madras, Centenary Building, Chepauk, Ch – 600 005 - Phone: 044 - 2539 9572

02. GENERAL INSTRUCTIONS:
The Tender Inviting Authority reserves the right to cancel in full / part of the tender of any item or to make any changes/additions in the Terms and Conditions / Agreement of Contract without consultation with the Firm / Tenderer / Supplier without assigning any reason therefor at any time. Any reasons for not complying the contract furnished by the tenderer shall not be entertained and any failure will be construed as breach of contract and the name of the company will be recommended for listing them under “Blacklisted”. The Tenderer should not have been blacklisted or debarred by any of the Organizations for their deficiency of service in complying the orders entrusted to them (Declaration to this effect is to be furnished), The Tenderer shall bear all costs associated with the preparation and submission of this Tender. The Tender Inviting Authority may amend the tender wherever it is felt that such an amendment is absolutely necessary. The Tender shall remain valid for period of not less than ninety days after the due date for bid submission. A tender valid for a shorter period shall be rejected by the Employer as non-responsive. Tenders with

SIGNATURE OF THE TENDERER WITH SEAL
conditions are liable for rejection. Any amendment to the tender will be uploaded on the website – www.unom.ac.in.

It is the responsibility of the tenderer to verify the amendments, if any. Additional terms and conditions will be incorporated in the Purchase/Supply/Work order, if needed, to safeguard the interests of the University. The Tender document is not transferable under any circumstances. **Tender documents should be downloaded through website www.unom.ac.in ONLY.** The Tenderer shall put their signature and affix Company Seal on all pages of this Tender Document and Annexure – I Specifications / Configurations without fail and submit the same along with the Annexure- II Technical Bid duly filled-in and signed by the Tenderer through Sealed Cover-1–after taking a photo copy for the purpose of Tenderer’s reference.

Tenders are request to inspect the site where the equipment(s) is/are to be installed and the existing one to be taken up by the contractor under buy back scheme before tendering.

03. **ELIGIBILITY CRITERIA :**

The bidders must fulfill the following Eligibility conditions and also submit documentary evidence in support of fulfilling these conditions while submitting the Technical Bid. The University will consider the Commercial Bid of the vendors who qualify in the Technical bid. For those vendors who are not qualified in the Technical Bid, the Commercial bid will not be considered for opening.

1.1. The Bidder should have experience at least three years in the field of manufacturing/supplying of **“Solar Simulator with Accessories”** as on 31.03.2020 and should furnish the work orders for having supplied and installed of similar nature of same obtained from the reputed concerns most preferably from Government Department / Institutions / University / Govt. Undertaking / Organizations (Copy of the work orders received from the Clients for the last three years as on 31.03.2020 should be enclosed).

1.2. The annual turnover of the bidder during the previous three financial years shall not be less than Rs. 63 lakhs. (Attach certificate from the Chartered Accountant along with the audited balance sheet including Profit & Loss statement for the last three financial years).

1.3. The Bidder should have supplied and commissioned at least one no of **equipment** as per the technical specifications prescribed in the tender or similar of **equipment** to any one of the Govt. Departments / Universities / Institutions / Private organizations as on 31st Mar. 2020, during the previous 3 years (Client certificate is to be furnished. The tender will not be considered without the client certificate. The client certificate should indicate the specifications of the system supplied, period of work carried out and the value of the work executed).

1.4. The Bidder should have to furnish Manufacturers Authorisation Form (MAF) from the principal manufacturer of OEM for the proposed **equipment** who has supplied in India over the past three years. (Original MAF should be enclosed).

04. **EARNEST MONEY DEPOSIT (EMD) :**

The Tenderer should submit the Demand Draft of Rs.21,000/- obtained towards above said EMD in the Technical Bid Sealed Cover ONLY. After opening of Technical Bid Sealed Cover, any Tender without the Demand Draft towards EMD shall be considered as NON-RESPONSIVE and shall be SUMMARILY REJECTED without any communication. Only on receipt of the Security Deposit from the successful
tenderer/s and after execution of the Agreement of the said contract, the EMD will be returned to the unsuccessful tenderer/s within a reasonable period. **No interest will be paid on the EMD.** Earnest Money Deposit of the successful Tenderer/s will be returned only after successful completion of the end of the prescribed Warranty period of the ordered/supplied Non-consumable items OR after successful 100% utilization of the ordered/supplied Consumable items without any complaints as per purchase/supply/work order, subject to the satisfaction of the University.

As per the Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000, the Small Scale Industrial (SSI) Units registered with Tamil Nadu Small Industries Development Corporation (SIDCO) or National Small Industries Corporation (NSIC) in respect of those items for which the Registration Certificate has been obtained in respect of tenders called for by Government Departments, State Owned Public Sector Undertakings, Statutory Boards, Local Bodies and Co-operatives are granted exemption from the payment of Earnest Money Deposit.

05. **QUOTING RATE:**

   a. The Tenderer should quote the **RATE** in the Annexure-III Commercial Bid for the supply/work to be carried out as per specifications / configurations with due endorsement of the Tenderer (i.e. Name/Signature/Address of the Tenderer). The Rate includes (exemption from excise duty and custom duty) surcharge, clearing and forwarding charges, freight, octroi, insurance for delivery, delivering upto the point of installation and commissioning of the equipment and such other levies, if applicable.

   b. The rate should be quoted for the item/s with specifications/configurations, if applicable and should be indicated clearly both in words and figures. Any scoring or overwriting should be attested by the Tenderer with full signature. The rate quoted should be firm and should not be subject to any variation clauses.

   c. The rates quoted shall be kept firm for **120 days** from the date of opening of the Tenders for acceptance.

   d. The University shall not pay any increase in duties, taxes and surcharges on account of any revision by the Government after allotment / issue of work order / at the time of supply.

06. **TWO-COVER SYSTEM / SUPERSCRIPTION :**

   “Two-Cover System” means a procedure under which the tenderers are required to submit the tenders simultaneously in two separate sealed covers i.e. Sealed Cover-1-Technical Bid & Sealed Cover-2-Commercial Bid in the following manner:

   **“SEALED COVER-1 – TECHNICAL BID** and shall be superscribed as TENDER FOR THE SUPPLY OF ------------------------------------- ------------” and it should contain the following enclosures **as per the sequence indicated below**:

   | a. | The Demand Draft towards Earnest Money Deposit (EMD) as detailed above should be attached first on the top of Tender Document |
   | b. | Tender Document as prescribed in the order of pages together with ANNEXURE - I Specifications / Configurations should be submitted with Tenderer’s Signature and Company Seal in each and every page |
   | c. | ANNEXURE-II Technical Bid should be duly filled-in and submitted with Tenderer’s Signature and Company Seal. |
   | d. | Copies of proof of evidence (capability to undertake the tender) as sought in the Technical Bid should be attached in the order of Sl.No, wise and it should be numbered page-wise |
   | e. | Specimen copy if any, as per the Specifications / Configurations prescribed in the ANNEXURE - I shall be attached at the end |

   **“SEALED COVER-2 – COMMERCIAL BID** and shall be superscribed as TENDER FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF -----------------------------------
and it should contain the Price Quotation as per the format given in ANNEXURE-II Commercial Bid. The Tenderer should quote the Rate along with his Signature and Company Seal. The tenderer shall not enclose any other document or statement that will influence the price. In such an event, the Tender inviting authority shall summarily reject the tender.

**OUTER BIG SIZE SEALED COVER-3** shall contain SEALED COVER-1 and SEALED COVER-2 and shall be superscribed as “TENDER FOR SUPPLY, INSTALLATION AND COMMISSIONING OF ---------------------------------------”

Tender submitted without following the procedure as mentioned above shall be summarily rejected.

07. **MODE OF SUBMISSION OF SEALED COVERS:**

A OUTER BIG SIZE SEALED COVER-3 after superscribed as “TENDER FOR SUPPLY OF ---------------------------------------” should reach the Registrar, University of Madras, Centenary Building, Chepauk, Chennai-600 005, on or before the last date and time as given in the Tender Notification, by Registered Post with Acknowledgement due or in person. The Tender inviting authority shall not be responsible for any postal delay in receipt of the tender. Delayed / Late Bids shall not be accepted under any circumstances.

The Technical Bid Cover; Commercial Bid Cover and the Outer Big Size Cover should bear the Round Seal or facsimile of the Tenderer / Wax Seal properly fixed on all the opening sides/places of the cover in addition to the affixing of the Tenderer’s from address stamp, pending which the bids will not be opened and summarily rejected.

08. **DUE DATE FOR SUBMISSION OF TENDER:**

The Tender can be submitted on all working days up to the prescribed closing date and time. In the event of the closing date is being declared as a holiday, the tenders can be submitted up to the fixed time on the following next working day. The Tender inviting authority will not be held responsible for any delay in the receipt of the Bank Draft or any delay in the receipt of the documents by the Tenderer including loss of the documents in transit or delay in obtaining any document / certificate or on any other account. No extension of the date and time for the submission of the document will be given for any such delay. The Tender inviting authority may extend the due date for submission of tender by issuing an amendment in which case all the rights and obligations of the Tender Inviting Authority and the Tenderers previously subject to the original due date for submission will then be subject to the new date for submission. Any Tender received after the due date and time will not be considered and will be returned to the Tenderer and no communication in this regard shall be entertained.

09. **ACCEPTANCE AND WITHDRAWALS:**

The final acceptance of the tender is entirely vested with the University of Madras which reserves the right to accept or reject any or all the tenders without assigning any reason whatsoever. There is no obligation on the part of the University to communicate with rejected Tenderers. After acceptance of the tender by the University, the Tenderer shall have no right to withdraw his Tender of claim higher price. The Tenders with incomplete information will be summarily rejected.

10. **OPENING OF TENDERS:**

The OUTER BIG SIZE SEALED COVER-3 of the tender concerned received within the stipulated time & date will be opened first by the Registrar, or any other Officer / Committee authorized by him on his behalf on the opening date and time in the presence of those Tenderers or their representatives with bonafide certificate who may
be present at the time of opening. Immediately, the “SEALED COVER-1 – Technical Bid” which is found in the OUTER BIG SIZE SEALED COVER-3 of the Tenderer concerned, will also be opened and the names of tenderers who have enclosed the EMD will ONLY be read out. The Sealed Cover-2 – Commercial Bid of the Tenderers those who technically qualified alone will be called for to participate in the meeting of the Commercial Bid opening and the meeting date with time and Venue will be intimated. The tenderers who desire to participate may be present at that occasion. The rate quoted in the tender by the Tenderer will remain unchanged till the finalization of the contract. Any subsequent change of rate after opening of tender shall not be entertained.

11. AWARD OF THE TENDER:

The award of the Tender shall be made strictly in accordance with the “Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000” and no deviation will be made. Notwithstanding anything that is said herein, the Tender Accepting Authority reserves the right to accept or reject any tender and to cancel the tendering process and reject all tenders at any time prior to the award of tender, without thereby incurring any liability to the affected tenderer/s on the grounds for the tender accepting authority’s action. The successful Tenderer will be intimated by the Tender Accepting Authority in a usual manner.

12. SECURITY DEPOSIT:

a. The successful Tenderer shall be required to remit 5% of the total value of the contract towards Security Deposit (covered for the Warranty period) within TEN days from the date of receipt of Communication regarding acceptance/approval of the Tender in the form of Demand Draft drawn in favour of “The Registrar, University of Madras, payable at Chennai”. On receipt of the above and execution of the agreement in a Rs.100/- Non-judicial Stamp Paper between The Registrar, University of Madras and the successful Tenderer, the Purchase/Supply/Work order will be released.

b. In the case of successful Tenderer, the Earnest Money Deposit already remitted shall not be adjusted towards Security Deposit to be remitted by the Tenderer. If the successful Tenderer fails to remit the Security Deposit within the prescribed period, the Earnest Money Deposit remitted by him will be forfeited to the University of Madras and his tender will be held void and the Tender accepting authority shall continue the process with other responsive tenderers as per the Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000. The tender inviting authority also reserves the right to take any other action as deemed necessary against such tenderer. No interest will be paid on the Security Deposit.

c. The Security Deposit remitted by the Tenderer in respect of the Tender concerned will not be returned to the Tenderer till the successful completion of the end of the prescribed warranty period of the ordered/supplied Non-consumable items OR after successful 100% utilization of the ordered/supplied Consumable items without any complaints as per purchase/supply/work order, subject to the satisfaction of the University.

d. If the successful Tenderer fails to act according to the Tender conditions or back out when his Tender is accepted, his Security Deposit mentioned above will be forfeited to the University.

13. AGREEMENT:

The successful tenderer should submit Rs.100/- Non-judicial Stamp Paper and the Security Deposit within TEN Days from the date of acceptance of the tender, for fulfilment of the contract for executing the Agreement between the Registrar,
University of Madras and the Successful Tenderer. The agreement should be executed before getting the Purchase/Supply/Work Order from the University.

The expenses incidental to the execution of agreement shall be borne by the successful Tenderer. The Terms and conditions etc. stipulated in the Tender Document / Agreement / Work order should be strictly adhered to and violation of any of them will entail termination of the contract without prejudice to the rights of the University and any consequential loss shall be recovered from the successful Tenderer.

14. **TIME AND SUPPLY:**

The successful Tenderer should supply the Equipment as per the specifications / configurations mentioned in the Annexure-II (Technical Bid) of the Tender Document and also according to the supply / installation schedule as specified in the Tender Document/Agreement of Contract/Printing order/Work order. This should be adhered strictly. The Quantity given in the Commercial Bid is approximate and it may likely to vary. If any defects are found in the supply, the same will have to be rectified or replaced free of cost by the successful tenderer. If the supply of the items are not given effect before the specified period, the University shall have the authority to cancel the order and to take any such action which will be deemed fit in the circumstances. In case of failure by the successful tenderer to deliver the items demanded from them within the period specified for delivery or in case of items being delivered without a correct invoice in duplicate, the Registrar or anyone duly authorized by him shall have power to reject any such items delivered or not delivered unless the supplier shall themselves forthwith supply others that shall be sufficient and satisfactory and any excess of cost so incurred by the Tenderer over and above the value of the contract together with all charges and expenses attending the purchase shall be recoverable by the University from the Supplier/Tenderer.

The University reserves the right to repudiate the contract and entrust the work to any other third party/agency in the event of any breach of terms and conditions of Tender Document / Agreement of contract committed by the Tenderer or failure to perform to contract in part or whole or by any neglect of instructions of the University by the Tenderer and any additional expenditure that may be incurred by the above process shall be recovered from the Tenderer apart from claiming any damages or any loss to the University, besides forfeiture of EMD/Security Deposit/Bank Guarantee in full.

The Tenderer should deliver the items only at the specified premises of the University of Madras within **THIRTY** days from the award of contract.

(i) **SUPPLY AND INSTALLATION OF EQUIPMENT:**

a. The supply and installation of **equipment** should be made strictly in accordance with the specifications given in the Tender document and should successfully fulfill the tests carried out by the University. The supply and installation should be as per the delivery schedule to be sent by the University along with the placement of firm orders. The successful Tenderer should give **warranty** for a period of **three-years** for the **equipment** installed, against breakage or breakdowns due to manufacturing defects. The **warranty** period takes effect from the date of handing over of the Equipment to the University. The Tenderer shall be liable to make good the loss by replacing the **equipment** found defective during the **warranty** period. The **equipment** hardware should be installed in the premises of the University at the cost and risk of the Tenderer.

b. The material or goods are to be **warranty** for a period of three-years after
installation and commissioning against manufacturing defect and bad workmanship. The warranty period specified, will commence from the date of handing over the said equipment after running and carrying out successfully the tests prescribed by the University to its satisfaction.

c. Documents such as operation manuals, user manuals and circuit diagrams and other relevant materials shall be provided by the Tenderer along with equipment, free of cost.

d. If the supply, installation and commissioning of the equipment are not effected before the specified period from the date of purchase order, the University shall have the authority to cancel the order and to take any such action which will be deemed fit in the circumstances.

e. If any manufacturing or other technical defects are found within the specified months from the date of installation, commissioning and handing over the equipment to the University Authorities, the same will have to be rectified or replaced free of cost by the supplier.

f. Training in the operations of the equipment to be procured has to be given at least for 5 persons of the University of Madras at free of cost.

g. During the warranty period, if due to manufacturing and other technical defects of the equipment supplied, the said equipment is down and if it is not restored in working condition within 24 hours, the supplier shall be liable for a penalty of one percent per week during breakdown period on the total contract price.

h. The warranty will cover all the materials and goods supplied by the supplier under this contract irrespective of the fact whether these have been manufactured by the supplier or not.

i. In case of failure by the Tenderer to deliver goods or materials demanded from them within the period specified for delivery or in case of goods or materials being delivered without a correct invoice in duplicate, the Registrar or anyone duly authorized by him shall have power to reject any such goods or materials so rejected or not delivered unless the supplier shall themselves forthwith supply others that shall be sufficient and satisfactory and any excess of cost so incurred by the Tenderer over the contract price together with all charges and expenses attending the purchase shall be recoverable by the University from the supplier.

j. The successful Tenderer shall supply licensed versions of the equipment. The University will not be held responsible for any consequences arising of patent right problems.

(ii) POST WARRANTY:

a. The life cycle for normal performance of equipment is three years. The post warranty Annual Maintenance Charges (AMC) is applicable for the remaining period of the life cycle after the satisfactory completion of the warranty period offered by the vendor.

The AMC payable from the date of completion of warranty in advance against invoices/bill to be preferred by the vendor. The vendor agrees to provide comprehensive maintenance of the equipment, which shall include preventive maintenance and corrective maintenance at the location specified by the University.

The maintenance shall also include replacement of all parts of equipment. The equipment which is down should be restored in good
working condition within 48 hours. Otherwise the supplier shall be liable for a penalty of 1% per week of the breakdown period on the total price of the system. The Department reserves the right to terminate the maintenance contract in the event of unsatisfactory maintenance and claim damages for non-fulfillment of contract.

15. FORFEITURE OF EARNEST MONEY DEPOSIT (EMD):

The EMD is liable to be forfeited,

(a) if the tenderer who withdraw his tender at any stage after the last date and time fixed for the submission of tender.

(b) if the tenderer on becoming successful, fails to furnish the required Security Deposit or Sign the Agreement, within the stipulated time limit.

(c) if the successful Tenderer fails to abide by the tender conditions or withdraws after his tender has been accepted.

(d) if the successful Tenderer shall assign or make over the contract, the benefit of burden thereof to any other person or persons or body corporate.

(e) if the successful Tenderer shall underlet or sublet to any person(s) or body corporate for executing the contract or any part thereof.

16. PENALTY FOR NON-FULFILMENT OF CONDITIONS:

The Supplier shall agree that the penalty at 1% of the Purchase/Supply/Work order shall be imposed by the Purchaser if necessary, for each week of delay in delivery with reference to the delivery period given if the supplier fails to deliver the same within the specified period mentioned in the Purchase/Supply/Work order to maximum extent of 10% subject to force majeure conditions. Besides, such performance may entail black listing of the supplier. The supplier shall also agree that in the event of non fulfilment or non-observance of any of the conditions stipulated in the Tender conditions, the Supplier shall pay as penalty an amount equivalent to 10% of the total value of contract or an amount equal to the actual loss incurred by the purchaser. This provision applies up to the end of the life cycle of the equipments (i.e.) even during the post warranty period.

17. CONTRACT / WARRANTY PERIOD:

The Contract period shall be 30 days from the date of issue of Work order. The warranty period shall be 3 years after installation and commissioning of the equipment and handing over the Equipment to the University.

18. TENDER EVALUATION:

The Tender Inviting Authority shall have the power to constitute Tender Scrutiny Committee for evaluation of Tender as per Tender document and it shall furnish the evaluation report as per tender specifications/configurations contained in the tender conditions.

19. PAYMENT:

A. No payment shall be made in advance for the procured items in general. Advance Payment shall be made in the case of goods, commodities, apparatuses etc., are procured through imports requiring opening of Letter of Credit. However, the decision of the University authorities shall be the final.

B. 90% of the total value of the Contract against Bill/Invoice shall be released only after completion of the contract work or supply as per purchase/supply/work order and fulfilling the Tender specifications/configurations based on the (1) Report of the appropriate Committee constituted by the authorities of the University; or (2) Test Reports of the Govt. approved firms; or (3) Report of the Expert/Personnel concerned. Payment shall be made directly to the supplier only by way of Account Payee Cheque after making proper stock entries / verification / good certification / approval of the authorities concerned / deducting 2% Income Tax.

C. The Balance 10% of the total value of the Contract shall be retained as performance guarantee which shall be released after successful completion of (a)

SIGNATURE OF THE TENDERER WITH SEAL

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100% usage in the case of Consumable items and (b) WARRANTY Period in the case of other than Consumable items. Alternatively, if the supplier gives irrevocable Bank guarantee in lieu of the balance 10% of the Retention Amount during the warranty period, the University shall reserve the Rights to accept or reject the same.

D. Percentage of payment to be withheld for the effective performance of the contract, provided that withheld amounts do not exceed 10% of the total value of contract for the supply of items i.e. Hardware / Software / Material / Equipment, etc.”

20. DISPUTES AND JURISDICTION:

In case of any dispute arising out of any breach of contract pertaining to this tender, the matter will be referred to an Arbitrator under Arbitration and Conciliation Act 1996” The arbitration shall be held in the City of Chennai only and the court at Chennai only shall have jurisdiction in relation thereto.

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<thead>
<tr>
<th>DECLARATION FOR UNDERTAKING THE TENDER</th>
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<tbody>
<tr>
<td>Having gone through / examined carefully the Terms and Conditions with Specifications/Configurations of the Tender Document, I/We hereby undertake to provide the items described in the tender schedules as per the Specifications/Configurations prescribed and at the NET Rates entered in the attached schedule or at the Rates to be approved by the University after negotiation.</td>
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<tr>
<td>I/We do hereby undertake to deliver the item/s within the time specified by the authorities of the University.</td>
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<th>OFFICE SEAL</th>
<th>SIGNATURE OF THE TENDERER</th>
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<td>WITH DATE</td>
<td>NAME</td>
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<td>DESIGNATION</td>
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SIGNATURE OF THE TENDERER WITH SEAL
## ANNEXURE - I
### SPECIFICATIONS / CONFIGURATIONS
TO BE ABIDED STRICTLY BY THE TENDERERS

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of ITEM</th>
<th>Specifications / Configurations</th>
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<tr>
<td>01</td>
<td>“Solar Simulator with Accessories”</td>
<td>Enclosed – Annexure - I</td>
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**DECLARATION FOR UNDERTAKING THE TENDER**

I/We have gone through carefully the Terms and Conditions together with the Specifications / Configurations as given in the ANNEXURE-I of the Tender Document. The Terms and General Conditions together with Specifications / Configurations to be abided by the Tenderers are acceptable to us. Based on the prescribed Specifications / Configurations, I/We hereby undertake to supply the items within the time schedule.

**OFFICE SEAL WITH DATE**

**SIGNATURE OF THE TENDERER**

**NAME**

**DESIGNATION**
National Centre for Nanoscience and Nanotechnology, University of Madras

Solar Simulator and its accessories

Specifications (or superior than specified)

- Solar Simulator: - Class AAA Solar Simulator AM1.5. These solar simulators meet ASTM E927
  (Japanese Standard JIS C8912 and European Standard IEC 60904-9)
- Type of lamp: - Xenon Short Arc
- Lamp Power : - 150 W
- Max. Illuminated area: - 30mm x 30mm
- Light Source: - Steady State
- Air Mass: - AM 1.5G Standard:
- Lamp lifetime: - 1000 Hours with Lamp life display
- Adjustment Range of light intensity: - 100 mW/cm² +/- 15%
- Spectral Match to ASTM E927: - +/-25% or better
- Non-uniformity of irradiance as per ASTM E927: - ≤2% or better
- Temporal Stability as per ASTM E927: - ≤2% or better
- Optimum Working Distance :- 5.8” (147mm)
- Max. Power Consumption (W): - 0.5 KVA
- External lamp alignment with lamp on
- Lamp life display
- Manual / automatic shutter control
- External/Remote shutter control
- Forced air cooling
- Lamp current meter
- Selectable and adjustable constant intensity or constant power mode
- Safety Interlock override LED
- Over Temperature Warning LED
- Shutter Status Indicator

General Techniques on electrochemical accessories

- Cyclic Voltammetry (CV) with simulation/fitting programs
- Linear Swep Voltammetry (LSV) with stripping
- Bulk Electrolysis with Coulometry (BE)

Trace Metal analysis & Pulse Techniques

- Differential Pulse Voltammetry (DPV) with stripping
- Normal Pulse Voltammetry (NPV) with stripping
- Square Wave-Osteryoung Voltammetry (SWV) with stripping

Dr. S. BALAKUMAR, FRSC(UK)
Professor and Director
National Centre For Nanosciences & Nanotechnology
University of Madras
Guindy Campus, Chennai - 600 025

Dr. R. JAYAVEL
DIRECTOR
CEN TRE FOR NANO SCIENCE AND TECHNOLOGY
ANNA UNIVERSITY
CHENNAI - 600 025 INDIA.

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Corrosion

- Tafel Plot (TAFEL), potentiodynamic deactivation, pitting corrosion, corrosion rate, linear Polarisation, Corrosion current etc.

Fuel cell

- Multi-Potential Steps (STEP)
- Multi-Current Steps (ISTEP)
- Amperometric i-t Curve (i-t) – Lifetime testing
- Polarisation I-V curves Linear Sweep
- Open Circuit Potential – Time (OCPT)

Impedance

- AC Impedance (IMP)
- Impedance – Time (IMPT) (Mott-Scottsky)
- Impedance – Potential (IMPE)
- Impedance Simulator with fitting
- Open Circuit Potential – Time (OCPT)

Battery Charge/Discharge

- Galvanostatic Charge discharge single/multiple cycle -Chrono Potentiometry (CP) with potential limits, polarity by potential or time, no. of cycles etc
- Voltage vs current density curves

Deposition Studies

- Single or Multi potential steps with charge limits, single or multi current steps, mixed voltage/current control using macro

Photovoltaic studies

- I-V measurements, I max, Pmax, Fill factor etc

General Useful Techniques

- CA, CC, ACV, DNPV, SHACV, DPA, DDPA, TPA, IAPD, HMV, SSF, CPCR, PSA, SCV, FTACV…Etc.
- Auxiliary Signal Measurement Channel
- RDE control (0-10V output)
- IR Compensation
- External Potential Input

AC Impedance / Impedance Time / Impedance – Potential Plots

Bode : log Z vs log (freq), Bode : Phase , vs log (freq), Bode : log Z" & Z’ vs log (freq)
Bode : log Y vs log (freq), Nyquist ; Z" vs Z’, Interactice 3D Plots, Admittance; Y” vs Y’
Warburg: $Z''$ & $Z'$ vs $w^{1/2}$ w-angular frequency, $Z'$ vs $w Z''$, $Z'$ vs $Z''/w$, $Cot$ (phase) vs $w^{1/2}$

The corresponding Polarographic and stripping modes are required.

**Hardware Specification:**

- Potentiostat / Galvanostat, 2- or 3- or 4-electrode configuration
- Maximum potential: $\pm 10V$, Maximum current: $\pm 250 mA$ & $\pm 350 mA$ peak
- Compliance Voltage: $\geq\pm 13V$, Potentiostat rise time: 0.6 us
- Galvanostat applied current range: 3nA – 250mA, Applied current accuracy: 20pA
- Input bias current: < 20 pA,
- CV and LSV scan rate: 0.000001 to 10,000 V/s
- CA and CC pulse width: 0.0001 to 1000 sec
- Current resolution is 0.3fA
- Bandwidth of our electrometer is 10 MHz
- IMP frequency: 0.00001 to 1MHz (for impedance 10-1000 ohm),
- IMP amplitude: 0.00001V to 0.7V RMS
- Automatic and manual iR compensation, Flash memory for quick software update
- Serial port or USB port selectable for data communication
- Applied Potential accuracy is 1mV.
- Applied & Measured Potential resolution is 0.0015%

**Software Features:** Windows based software for data processing.

a) **Graphic Display**
b) Present data plot, 3D surface plot: Overlay plots: several sets of data overlaid for comparison, add data to overlay adding data files to overlay plot, parallel plots, etc
c) Up-gradation of the software will be done once a year or as and when updated versions of software are available.
d) **Computer:** Desktop Computer with 1 TB Hard Disc, 4GB RAM, 20” TFT Colour Monitor with Standard Configuration.

e) **NREL Cell** : Reference cells are most commonly used to set the intensity of a light source to a particular test condition. Solar cell (typically 2cm x 2cm size) with Calibration certificate.

f) **Warranty:** 3 Years

g) **UPS:** 1KVA with 2 hours backup

**Optional Items (Cell System and NREL Cell)**

Electrochemical Cell System includes,
4 glass cells with One Cell top,
Pt Working Electrode
GC Working Electrode
Ag/AgCl Reference (aq)
Ag/AgCl Reference (non aq)
Calomel Reference Electrode
Pt Wire Counter Electrode
Electrode Polishing Kit & Cell stand

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**Signature:**

Dr. R. Jayavel
Director
Centre for Nanoscience and Technology
Anna University
Chennai - 600 025, India.
## ANNEXURE – II
### TECHNICAL BID

Tender Schedule for the Supply & Installation of “Solar Simulator with Accessories” in the NCNSNT, University of Madras, Guindy Campus, Chennai.

### Profile of the Company and details of the Eligibility Criteria:

The Tenderer should provide the following details.

1. Name of the Organization

2. Nature of the Organization (Govt. / Public / Private / Partnership / Proprietorship)

3. (a) Address of the Registered Office of the firm with Phone Number, Cell No, Fax and E-mail.
   (b) Year of Establishment: (related to Printers business)
   (c) GST Reg No.
   (d) Whether registered with MSME/NSIC. If so, furnish the details.

4. Location of the factory with address

5. Proof for three years experience (01.04.2017 to 31.03.2020) in the field of manufacturing/supplying of the said equipment

   Copy of the work orders received from the Clients for the last three years as on 31.03.2020 should be enclosed

   Yes or No.

6. Annual turnover for the previous financial three years as on **31-03-2020**

   (2017-18 to 2019-20)

   2017-18 ........Rs.
   2018-19 ........Rs.
   2019-20 ........Rs.

   Attach certificate from the Chartered Accountant along with the audited balance sheet including Profit & Loss statement for the last three financial years.

   Yes or No.

7. should have supplied and commissioned at least one no of “Solar Simulator with Accessories” as per the technical specifications prescribed in the tender or similar equipment in any one of the previous 3 years in Govt. Departments/Universities/Institutions/Private organizations as on 31.03.2020.

   (Client certificate is to be furnished. The client certificate should indicate the specifications of the system supplied, period of work carried out and the value of the work executed)

8. Is your Company an original manufacturer of the equipments and related items? If yes, state the specific items (equipments) you Manufacture

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**SIGNATURE OF THE TENDERER WITH SEAL**
9. should have to furnish Manufacturers Authorisation Form (MAF) from the principal manufacturer of equipment who has supplied in India over the past three years. 

(Original MAF should be enclosed). 

10. Maintenance and service centre facilities in Chennai city / other areas and total number of Service Engineers available:

11. Total experience in the related areas

12. What type of maintenance support does your company provide for the spares

13. What are your conditions for up gradation of Equipment after the warranty period?

14. In case of breakdown of the equipment, what will be the mean Downtime? And state whether standby systems will be provided

15. State whether you will agree to supply the manuals Drivers for items supplied.

16. EMD PAYMENT PARTICULARS [The DD should be enclosed in the Technical Bid only]

(1) Number of Demand Drafts enclosed :

(2) Demand draft particulars

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the bank and Branch</th>
<th>DD no. and date</th>
<th>Amount (in Rs.)</th>
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<tbody>
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</tbody>
</table>

**TOTAL**

Signature:
Name of the Firm
Phone/Cell No.
## ANNEXURE III
### COMMERCIAL BID

Supply & Installation of **“Solar Simulator with Accessories”** in the NCNSNT, Guindy Campus, University of Madras, Chennai.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description of Equipment</th>
<th>Quantity</th>
<th>Rate</th>
<th>Amount Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Supply, installation and commissioning of <strong>“Solar Simulator with Accessories”</strong>, as per the technical specification (as prescribed in the Tender Document)</td>
<td>1 No.</td>
<td></td>
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<tr>
<td>02</td>
<td>GST.....% of Rs............</td>
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<td></td>
<td></td>
<td>Grand Total</td>
</tr>
<tr>
<td>03</td>
<td>Annual Maintenance Charges for 4th year.....% of basic equipment cost of Rs.................</td>
<td>1 year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Annual Maintenance Charges for 5th year.....% of basic equipment cost of Rs.................</td>
<td>1 year</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This AGREEMENT made on the....................... day of .........................2021
between The Registrar, University of Madras, Centenary Building, Chepauk, Chennai – 600 005 (herein after called “the Buyer or the Purchaser or the Tender Inviting Authority”) of the one part and....................................... ..........................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
(Name and address of “the Supplier”) (herein after called “the Bidder or the Contractor or the Firm or the Manufacturer or the Seller or the Supplier or the Tenderer”) of the other part.

WHEREAS the said Supplier has agreed with the Registrar, University of Madras for supply of required items to the University of Madras in conformity with the requirements and specifications / configurations.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the following documents referred to, and they shall be deemed to form and be read and construed as part of this agreement:
   a. The Purchase/Supply/Work order issued by the University based on the acceptance letter submitted by the successful Tenderer after price negotiation.
   b. Tender Document (Terms and General Conditions together with Specifications / Configurations to be abided by the Tenderers).
   c. Annexure -I Specifications / Configurations
   d. Annexure-II Technical Bid
   e. Annexure-III Commercial Bid
   f. The Supplier’s Bid including enclosures, annexures, documents, etc.
   g. Any other document listed in the Tender Document.

2. The Supplier agrees to undertake to supply the items as per the requirements as agreed to, in their Acceptance Letter Dated ......................... at the rates quoted by him/them after negotiation. The prices are inclusive of all the taxes, duties and charges etc.

3. The supplier agrees that in the event of non-fulfilment or non-observance of any of the conditions stipulated for supply of required items to and at the appropriate premises of the University of Madras as mentioned in the Tender Document in conformity with the requirements and specifications / configurations, the Supplier shall pay as penalty an amount equivalent to 10% of the total value of contract or an amount equal to the actual loss incurred by the University.

4. Neither the Purchaser nor the Supplier shall be liable for any delay or failure in the performance of their respective obligations due to causes, contingencies beyond their reasonable control such as
   a. Natural phenomena including but not limited to earthquakes, floods and epidemics.
   b. Acts of any Government authority domestic or foreign including limited to declare or undeclared, priorities and quarantine restrictions.

5. Any notice to the Supplier shall be deemed to sufficiently served, if given or left in writing at their usual or last known place of abode or business.

6. The Warranty period shall be three years or as stipulated by the University authorities with effect from the date of completion of the supply/installation of other than
Consumable item/s – i.e. Hardwares / Softwares / Computers / Printers / Photo Copiers / Equipments, etc. **Annual maintenance contract shall be two years after completing warranty period.**

7. The items shall be supplied **within THIRTY days or as stipulated by the authorities from the date of issue of Supply/Work order.**

8. The Supplier shall agree that the **penalty at 1%** of the Purchase/Supply/Work order shall be imposed by the Purchaser if necessary, for each week of delay in delivery with reference to the delivery period given if the supplier fails to deliver the same within the specified period mentioned in the Purchase/Supply/Work order to **maximum extent of 10%**, subject to force majeure conditions. Besides, such performance may entail black listing of the supplier. The supplier shall also agree that in the event of non-fulfilment or non-observance of any of the conditions stipulated in the Tender conditions, the Supplier shall pay as penalty an amount equivalent to **10% of the total value of contract** or an amount equal to the actual loss incurred by the purchaser.

9. **The University shall have the power to make any changes / any other additional conditions as and when found necessary in the Terms and Conditions / Agreement / Work Order without consultation with the Firm / Tenderer / Supplier.**

10. **The University also reserves the right to cancel the transaction and agreement, if and when it is found that the tenderer has failed to supply the items within the period as stipulated in the Agreement / Work Order or violates any of the terms and conditions stipulated in the “Tender Form”.**

For and on behalf of

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**PURCHASER**

**SUPPLIER**

**WITNESSES:**

1.

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