



**ICAR - CENTRAL INLAND FISHERIES RESEARCH INSTITUTE**

**AN ISO 9000 : 2008 Certified Organization**

**Barrackpore, Kolkata-700 120, West Bengal**

**☎ 2592-1190/1191 Fax : 033-2592-0388**

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**GST NO.19AAAGC0090D1ZX**

F. No. Capital (NASF Biosensors)-117(2/A)/2019-Stores

Dated:-5<sup>th</sup> March, 2020

**NOTICE INVITING OPEN TENDER THROUGH E-PROCUREMENT**

**E-tender Id:- "2020\_DARE\_549896\_1"**

Online Bids are invited from interested firms under two bid systems for **Procurement of three equipments viz. 1) Multimode Multi plate Reader, 2) Electrochemical Potentiostat (Cyclic Voltmeter) and 3) Spectrophotometer at ICAR-CIFRI, Barrackpore, Kolkata – 700120, West Bengal on F.O.R. basis.** Tender documents may be downloaded from e-Procurement website of CPPP <https://eprocure.gov.in/eprocure/app> as per the schedule as given in CRITICAL DATE SHEET as under.

**CRITICAL DATE SHEET**

Tender No.	Capital (NASF Biosensors)- 117(2/A)/2019-Stores
Name of Organization	ICAR-Central Inland Fisheries Research Institute, Barrackpore, Kolkata - 700120
Date and Time for Issue/Publishing	11.00 AM on 05.03.2020
Document Download/Sale Start Date and Time	11.30 AM on 05.03.2020
Bid Submission start Date and Time	01.00 PM on 05.03.2020
Bid Submission End Date and Time	2.00 PM on 14.03.2020
Date and Time for Opening of Bids	2.00 PM on 16.03.2020
Address for Communication	Asstt.Adm.Officer(Stores), ICAR-CIFRI, Barrackpore, Kolkata – 700120 E-mail: storeseccifri@gmail.com

Asstt. Adm. Officer (Stores)

**INSTRUCTIONS FOR BIDDER**

1. The tender form/bidder documents may be downloaded from the website: <https://eprocure.gov.in/eprocure/app> . Online submission of Bids through Central Public Procurement Portal (<https://eprocure.gov.in/eprocure/app>) is mandatory. Manual/Offline bids shall not be accepted under any circumstances.
2. Tenderers/bidders are requested to visit the website <https://eprocure.gov.in/eprocure/app> regularly. Any changes/modifications in tender enquiry will be intimated by corrigendum through this website only.
3. In case, any holiday is declared by the Government on the day of opening, the tenders will be opened on the next working day at the same time. The Council reserves the right to accept or reject any or all the tenders.
4. **The interested Firms are not required to deposit EMD.**
5. The firm should send the original brochures of the product as well as complete tender documents in a sealed envelope addressed to **Asstt. Adm.Officer(Stores), ICAR-CIFRI, Barrackpore, Kolkata - 700120** on or before bid opening date and time as mentioned in the Critical Date Sheet. Original brochures should also be available on the website of the firm.
6. Bidder need not to come at the time of Technical as well as financial bid opening at CIFRI. They can view live bid opening after login on CPPP e-Procurement Portal at their remote end. If bidder wants to join bid opening event at CIFRI then they have to come with bid acknowledgement slip that is generated after successfully submission of online bid.

The Firms are also required to upload copies of the following documents:-

**Technical Bid**

- (a) Scanned copy of Firm's registration, Pan Card, GST No., Tender Acceptance Letter (Annexure-V).
- (b) Scanned copy of Manufacturers authorization certificate issued by Principal Manufacturer only.
- (c) Scanned Copy of Annexure-II and IV duly signed and stamped by the bidder.
- (d) Scanned copy of User List/Purchase Orders of its satisfactory installation.
- (e) Scanned Copy of Make/Model/Brand/Catalogue of all systems, sub systems and additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups.

**Financial Bid**

Price Bid as BoQ\_XXXX.xls (For original Instrument) and PDF copy for other for optional items. Evaluation shall be based on the price quotation for original instrument.

Sd/-  
**Asstt. Adm. Officer (Stores)**

**Terms & Conditions**

1. The tenderer shall quote rates, which will include the delivery & other incidental charges on F.O.R basis either in INR or in Foreign Currency.
2. The rates should be quoted as per the BOQ uploaded on the CPP Portal in xls format (reference may be obtained from Annexure-III). It must be noted that the contract shall be awarded to the firm which fulfills all the required terms and conditions. Financial bids shall be evaluated item-wise.
3. The firm must also possess valid PAN No., GST registration number and a copy of the same must also be enclosed with the tender document.
4. The equipment quoted should be of latest technology. The spare parts of the equipment quoted should be available for next 10 years.
5. Modification in the tender documents after the closing date is not permissible.
6. The successful firm shall have to supply the **Scientific Equipment** within 6 weeks from the date of confirmed supply order or confirmed Letter of Credit and if the materials are not supplied in time than the purchase order may be cancelled and the performance guarantee may be forfeited, if time extension has not been granted by the Institute. The successful bidder should supply Commercial Invoice for preparation of Letter of Credit within 7 days of uploading of Purchase Order.
7. **The validity of the Tender will be at least for 120 days from the date of opening of the Tender.**
8. No variation in rates, terms and conditions and specifications shall be entertained.
9. The Director, ICAR-CIFRI shall have the right to reject all or any of the offers without giving any reasons whatsoever.
10. Merely quoting of lowest rates does not mean that order shall be given to that firm. The decision of the competent authority will be final.
11. In case of foreign currency, conversion rates in INR will be taken on that day when financial bid is opened, to work out the cost of equipment, for comparative evaluation of the rates.
12. In case, the successful bidder shows inability to execute the contract at any stage, after the contract is awarded, for whatsoever reason(s), the performance security deposited would be forfeited.
13. The Director, ICAR-CIFRI reserves the right to cancel the contract at any time during the currency period of the contract without giving any reason.
14. The firm, to whom the tender will be awarded, will have to deposit the performance security equal to 10% of the total amount within 10 (ten) days after notification of award of contract/issue of purchase order to the Firm. The formal purchase order will be issued only after receiving the performance security. The Performance security should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations. If the services are not found to be satisfactory, the performance security is liable to be forfeited. No interest will be paid on performance security.
15. If any dispute(s) arises between ICAR-CIFRI and the firm with reference to the contract, ICAR-CIFRI will decide it and its decision will be binding on the firms.
16. Neither any official of a procuring entity nor a bidder shall act in contravention of the Integrity codes specified under Rule 175 of General Financial Rules 2017 which includes making offer, solicitation or acceptance of bribe, rewards or gift or any material benefits, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process.
17. This Institute is registered with DSIR and is exempted from Customs Duty. In case of imported goods, CDEC/DSIR will be provided to the firm only if it is imported in the name of Institute against the purchase order.
18. **Payment-**  
**(A) In case of imported goods:-**

- (a) On shipment 90% of the contract price (CIP+CIP to FOR) and air/sea freight, insurance, custom duty against CDEC, Custom Clearance charges, agency commission, taxes & transportation charges on FOR up to ICAR-CIFRI shall be paid through irrevocable **LETTER OF CREDIT** upon submission of documents detailed in L/C.
- (b) The balance 10% of the contract price (CIP+CIP to FOR) and air/sea freight, insurance, custom duty against CDEC, Custom Clearance charges, agency commission, taxes & transportation charges on FOR up to CIFRI will be released after satisfactory installation/commissioning, training and other contractual obligations.

**OR**

- (c) 100% of contract price through a direct Bank Transfer after receipt of prescribed documents and satisfactory installation/commissioning.

**Note:- The bidder may choose only one mode of payment either L.C. or Direct Bank Transfer. The mode of payment once opted in the bid shall not be changed after opening of tender. In case, no option for mode of payment is given in the bid, payment will be made through L.C.**

**(B) In case of indigenous goods:**

- (i) 100% of the contract price on receipt of goods by the consignee after satisfactory installation/commissioning, training and other contractual obligations. The GST @ 5% should be separately quoted as per Govt. of India Notification No. 45/2017-Central Tax (Rate), dated 14<sup>th</sup> November, 2017 and No. 47/2017-Central Tax (Rate), dated 14<sup>th</sup> November, 2017 for research Institutes. Certificate shall be issued by the Head of the Institute as per Sl. No. 3 of the aforementioned Notifications, no separate DSIR Certificate shall be issued.

**19. Installation:-**

Within 30 days from the date of receipt of equipment in the Institute failing which Liquidated Damage clause shall be applicable.

20. **Liquidated damage clause:** It would be charged @ 0.5% (half per cent) of the base price (excluding taxes) of the delayed goods for each week of delay in supply and/or installation subject to a maximum of 10%.

**21. Prices –**

**(A) In case of imported goods**

- i. **The rates should be quoted in foreign currency/INR on FOR basis including all charges from CIP international port/Airport to FOR CIFRI, Barrackpore (like; air/sea freight, insurance, custom duty against CDEC, Custom Clearance charges, taxes & transportation charges upto ICAR-CIFRI). Full conversion from Foreign currency to INR is incorporated in BOQ.**
- ii. The **Indian Agency Commission** should also be indicated separately in BOQ which will be paid in **Foreign Currency/INR** to Indian Agent of Principal Manufacturer after satisfactory installation of the equipment and after completion of all contractual obligations.

**(B) In case of Indigenous goods**

- i. The rates should be quoted in INR.
- ii. The GST amount should be mentioned separately.

**22. IN CASE OF IMPORTED/INDIGENEOUS GOODS:**

**THE TENDERING FIRM/AGENT MUST ENCLOSE THE AUTHORIZATION CERTIFICATE FROM ITS PRINCIPAL MANUFACTURER. IN CASE OF NON-COMPLIANCE OF THIS CONDITON, TENDER WILL BE REJECTED.**

23. **Warranty:-** Warranty period should be as specified in Annexure VIII.

24. Annual Maintenance Charges and Optional items:- **As per** Annexure VIII or to be decided by the Institute at a later stage.

**Dated :**

**‘Terms & conditions are acceptable’  
(Authorized signatory of the firm)**



ANNEXURE – III

**(Reference for BOQ in XLS) (To be quoted in format provided on CPP Portal)  
Price bid for the Three Equipments with Complete Accessories at ICAR-CIFRI,  
Barrackpore, Kolkata – 700120**

**1. Price to be quoted for the three equipments as mentioned in Annexure-VII (Specifications) from Sl. No. 1 to 3**

Sl. No.	Item	No. of Unit	Unit Rate/CIP Rate on International Port (Seaport/Airport) In Figures To be entered by the Bidder in Foreign currency/INR (For Global/Domestic Vendors both)	Charges from CIP to FOR Destination Rates in Foreign currency/INR	Indian Agency Commission in Foreign currency /INR	GST in INR on UNIT Rate (where vender quote in INR)
a	b	c	d	e	f	g
1	Multimode Multi plate Reader (As per Sl. No. 1 of Annexure-VIII of NIT Document)	1	Bidder to quote	Bidder to quote	Bidder to quote	Bidder to quote
2	Electrochemical Potentiostat (Cyclic Voltameter) (As per Sl. No. 2 of Annexure-VIII of NIT Document)	1	Bidder to quote	Bidder to quote	Bidder to quote	Bidder to quote
3	Spectrophotometer (As per Sl. No. 3 of Annexure-VIII of NIT Document)	1	Bidder to quote	Bidder to quote	Bidder to quote	Bidder to quote

- \* Items should be of reputed make and suitable for high end elite users.
- \* Financial evaluation will be made item-wise.
- \* Tax extra as applicable should be indicated separately in the column provided.
- \* Bid submitted in foreign currency will be converted to INR on the date of opening of Price Bid.

**Note:** The above mentioned Financial Proposal/Commercial bid format is provided as BOQ\_xxx.xls (along with this tender document at <https://eprocure.gov.in/eprocure/app>). Bidders are advised to download this BoQ\_XXXX.xls as it is and quote their offer/rates in the permitted column and upload the same in the financial bid. **Bidder shall not tamper/modify downloaded price bid in .xls format in any manner.** In case the same is found to be tempered/modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with ICAR-CIFRI.



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**GST NO.19AAAGC0090DIZX**

**Annexure– IV**

Name of the Firm \_\_\_\_\_

Registered / Postal Address \_\_\_\_\_

1.	Permanent Account Number (PAN) No.	
2.	Service Tax Registration No., if applicable	
3.	Bank Details:-	
	a) Bank Name	
	b) Branch Address	
	c) Account No.	
	d) Type of Account (Current/Savings)	
	e) MICR NO.	
	f) RTGS/NEFT code	

**Date:.....**

**Place:.....**

**Name of the Authorized Signatory  
Stamp and Sinature**

Annexure-V  
**TENDER ACCEPTANCE LETTER**  
(To be given on Company Letter Head)

Date:

To,  
The Director,  
ICAR-Central Inland Fisheries Research Institute,  
Barrackpore, Kolkata - 700120

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: \_\_\_\_\_

Name of Tender / Work: -

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Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the website(s) namely:

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as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like annexure(s), schedule(s), etc .,), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organization too have also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefor, summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said Performance Security absolutely. We also undertake that, since EMDs are not being submitted with the tender as bid security, in the event of failure to comply the supply order or failure to submit the Performance Security as mentioned in the NIT document, your department/ organization shall have the right to suspend me / us from bidding for the Institute's tenders for the period as your department/ organisation may deem appropriate.

Yours Faithfully,  
(Signature of the Bidder, with Official Seal)



## **Annexure-VI**

### **Instructions for Online Bid Submission:**

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:

<https://eprocure.gov.in/eprocure/app> .

### **REGISTRATION**

Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrollment**” on the CPP Portal which is free of charge.

As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.

Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

### **SEARCHING FOR TENDER DOCUMENTS**

There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

### **PREPARATION OF BIDS**

Bidder should take into account any corrigendum published on the tender document before submitting their bids.

Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

## **SUBMISSION OF BIDS**

Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

Bidder has to select the payment option as “offline” to pay the EMD as applicable and enter details of the instrument.

Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.

Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric

encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

Upon the successful and timely submission of bids (ie after Clicking “Freeze Bid Submission” in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

### **ASSISTANCE TO BIDDERS**

Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

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Specifications for the three equipments

**1. Specifications of Multimode Multi plate Reader**

Advanced high end Multimode microplate reader for measurement of Fluorescence, Luminescence, UV-Vis absorbance and onsite upgradable to TRF-TRFET, FP and other detection modes

**General Specification:**

Detection Modes	<ul style="list-style-type: none"><li>• Fluorescence Intensity &amp; FRET</li><li>• UV/Vis Absorbance with Spectral Scanning</li><li>• Luminescence (flash and glow) - including BRET</li><li>• 2x Built-in reagent injector for time critical assays</li><li>• Any other</li></ul>
Upgradable option	<ul style="list-style-type: none"><li>• TRF &amp; TR-FRET</li><li>• Fluorescence Polarization / Anisotropy</li><li>• Low volume DNA/RNA measurements using additional adapter</li><li>• Any other</li></ul>
Measurement type	<ul style="list-style-type: none"><li>• Top and Bottom reading</li><li>• Endpoint and Kinetic measurements</li><li>• Spectral Scanning</li><li>• Well Scanning</li></ul>
Others	<ul style="list-style-type: none"><li>• Microplate Formats: 6 to 1536-well plates</li><li>• Shaking: Linear, orbital, and double-orbital</li><li>• Incubation temperature: + 4°C to + 65°C</li><li>• Automated focal height adjustment</li></ul>
Fluorescence and FRET measurement	<ul style="list-style-type: none"><li>• Light Source: High energy xenon flash lamp</li><li>• Detector: Photomultiplier Tube (PMT) / cooled CCD</li><li>• Wavelength range: 240 – 850 nm</li><li>• Sensitivity: Top: &lt; 0.5 pM fluorescein, Bottom: &lt; 1.0 pM fluorescein, FP: &lt; 1 mP SD at 1 nM fluorescein, TRF: &lt; 50 fM</li></ul>

	Europium, 384 well plate
Luminescence Measurement	<ul style="list-style-type: none"> <li>• Detector: Photomultiplier Tubes</li> <li>• Wavelength range: 300-800 nm</li> <li>• Sensitivity: &lt; 10 a mol/well of ATP</li> <li>• Dynamic range: 8</li> </ul>
Absorbance Measurement	<ul style="list-style-type: none"> <li>• Wavelength range: 230 – 1000 nm</li> <li>• Detector: CCD Array / Photodiode</li> <li>• Accuracy: &lt; 1% at 2 OD</li> <li>• Dynamic Range: 0 - 4 OD</li> </ul>
Software, PC and others	Compatible latest version software and Data Analysis Software, Should be supplied with desktop i7 Processor (7/8 the generation), 8GB RAM, Graphics card, 1TB SSD Hard drive, Monitor Full HD (> 20”), Keyboard, Mouse & Windows 10 OS, Table to rest the instrument and computer, UPS, Printer (Laserjet with scanner)

## **2. Specifications of Electrochemical Potentiostat (Cyclic Voltmeter)**

Advanced high end Electrochemical workstation able to perform Cyclic Voltammetry, Linear Sweep Voltammetry, Staircase Voltammetry, Tafel Plot (TAFEL) potentiodynamic deactivation, Chrono Amperometry, Chrono Coulometry, Differential Pulse Voltammetry, Normal Pulse Voltammetry, AC Voltammetry, Amperometric i-t Curve, Differential Pulse Amperometry, Double Differential Pulse Amperometry, Triple Pulse Amperometry, Integrated Pulse Amperometry Detection, Bulk Electrolysis with Coulometry, Hydrodynamic Modulation Voltammetry, Multi-Potential Steps, AC Impedance, Impedance – Time, Impedance – Potential, Chrono Potentiometry, Chronopotentiometry with Current Ramp, Potentiometric Stripping Analysis, Electrochemical Noise Measurement, Open Circuit Potential – Time, Galvanostat, Bode and Nyquist & Mott-Scottsky plot

<b>Parameter</b>	<b>Specification</b>
System specification	<ul style="list-style-type: none"> <li>• 2, 3 and 4 electrode configuration</li> <li>• Maximum potential: <math>\pm 10</math> V or better</li> <li>• Maximum current: <math>\pm 250</math>mA or Better</li> <li>• Compliance voltage: <math>\pm 12</math> V or better</li> </ul>

	<ul style="list-style-type: none"> <li>• Galvanostat applied current range: 10pA - 250 mA or better</li> <li>• Applied potential resolution: 150 <math>\mu</math>V or better</li> <li>• Applied current resolution: 0.03% of current range</li> <li>• IMP frequency range: 10uHz to 1MHz or better</li> <li>• Reference electrode input impedance: <math>\geq 1</math> TO</li> <li>• Reference electrode input bias current: <math>\leq 10</math> pA or better</li> <li>• Measured current resolution: 750 fA or better</li> <li>• Potentiostat rise time: <math>&lt; 1</math> <math>\mu</math>s (250mA) or better</li> <li>• Scan Rate: 10 <math>\mu</math>V/s to 9,000 V/s (Two channels simultaneously) or better</li> </ul>
Electrochemical cell system	<ul style="list-style-type: none"> <li>• Cell includes 4 glass cells with one cell top &amp; Cell stand</li> <li>• GC working electrode-3nos</li> <li>• Ag/AgCl reference (aq)-2no</li> <li>• Pt wire counter electrode- 5no</li> <li>• Screen printed electrode (100 pieces) with holder</li> </ul>
Application Software	Compatible full version of software/s for all the function and procedures mentioned
Warranty	3 year
PC and Others	Compatible latest version software and Data Analysis Software, Should be supplied with desktop i3/i5 Processor (7/8 th generation), 4 GB RAM, 1TB SSD Hard drive, Monitor Full HD ( $> 20$ " ), Keyboard, Mouse & Windows 10 OS, UPS, Printer

### 3. Specifications of Spectrophotometer

- **OPERATIONAL MODE:** Scan, fixed, quantitative, raking.
- System must have provision for operation manually without PC, and must be enabling to PC mode.
- Optical system : Should be Czerny-Turner mount, Double beam monochromator
- Wavelength range : 190 to 1,100 nm
- Spectral band width : 1 nm or less
- Stray light 198 nm (KCl) : 1.0 % or less 220 nm (NaI) : 0.05 % or less 340 nm (NaNO<sub>2</sub>) 0.05 % or less
- Wavelength accuracy : ±0.3 nm (Xe : 260.6, 484.3, 881.9 nm, Hg : 253.7, 435.8, 546.1 nm)
- Wavelength repeatability : ±0.1 nm
- Resolution : 1 nm
- Absorbance ratio : 2.04
- Photometric range Abs : -3.3 to 3.3 % T : 0 to 300
- Photometric accuracy : ±0.002 Abs (0 to 0.5 Abs)  
±0.004 Abs (0.5 to 1.0 Abs)
- Photometric repeatability : ±0.002 Abs (0 to 1.0 Abs)
- Scan speed : up to 6,000 nm/min
- Baseline stability : 0.0005 Abs/h
- Noise level : 0.0001 Abs (RMS, 260 nm, 0 Abs)
- Baseline flatness : ±0.0009 Abs (200 to 950 nm)
- Light source : Xenon flash lamp. (warranty for xenon lamp must be 7 years )
- Display : System must have a touch screen display.
- Detector : Silicon photodiode / PMT
- Cell holder : Should be at least automatic 6-cell turret should have auto start mode. Separate 10 cm cuvette holder
- Printer output : PC-compatible printer connection
- Interface : LAN port : connected to a router or PC



- Ambient temperature : 15 to 35 °C
- : USB port : connected to USB memory for use when transferring CSV-format files

### **SOFTWARE FUNCTIONS:**

- ✓ 6-Cell turret, operating software with latest configuration, automatic monitor power-off time setting function, Intelligent start function etc.

### **DATA PROCESSING FUNCTIONS**

- ✓ Scale changing, Trace, Statistical calculation, Spectrum overwriting, Peak detection, Smoothing, Differentiation, Area calculation, Rate calculating, nucleic acid purity, protein concentration, kinetics etc.
- ✓ File or report output should in CSV format Data/measurement condition saving functions, file search function.

### **MAINTENANCE FUNCTIONS**

- ✓ Wavelength calibration, Lamp usage time monitoring, Sample chamber opening/closing detection, Performance evaluation. Performance evaluation using mercury lamps, Maintenance history storage
- ✓ Warranty for xenon lamp must be 7 years to be provided.
- ✓ Standard warranty of two years for whole instrument shall be provided.
- ✓ Compatible computer (Desktop i7 Processor, 4GB RAM, 1TB SSD Hard drive, Monitor Full HD (> 20"), Keyboard, Mouse & Windows 10 OS, UPS, printer to be provided with the spectrophotometer.