भौतिकी संस्थान
भुवनेश्वर
Institute of Physics
Bhubaneswar - 751005, India
(परमाणु ऊर्जा विभाग, भारत सरकार का एक स्वायत्त अनुसंधान संख्यान)
(An autonomous research institution of Dept. of Atomic Energy, Govt. of India)

Notice Inviting E-Tender No.:
NIT/IOP/54/2023-24

SUPPLY AND INSTALLATION OF ARC PLASMA DEPOSITION SYSTEM

INSTITUTE OF PHYSICS

PO-SAINIK SCHOOL

BHUBANESWAR

Notice Inviting E-Tender

For

Supply and installation of Arc Plasma Deposition System

E- Tenders with two bid system are invited on behalf of the Director, Institute of Physics, Bhubaneswar from the manufacturers(Indian or Foreign) and their authorized reseller/Indian agent only for supply and Installation of the following items:-

Sl. No.	*Name of the Items*	*Tender No.*	*Qnty. No.*	*Estimated Cost in INR*	*Tender Fee in INR*	*EMD in INR*
1.	Supply and installation of Arc Plasma deposition System	NIT/IOP/54/ 2023-24	1 Set	Rs.127.00 Lakh excluding GST	NIL.	Rs.2,54,000/-

PARTIES HAVE TO QUOTE FOR ALL THE ITEMS OTHERWISE THEIR BIDS WILL NOT BE CONSIDERED.

Tender Enquiry No **: NIT/IOP/54/2023-24**

Last date of submission of E-bid **: 04**.07.2023 up to 6.00 P.M

Opening of Technical Bid **: 05**.07.2023 at 6.00 P.M

The details of general tender terms & conditions can be downloaded from https://eprocure.gov.in/epublish/app or Tender Free View Link from IOP,Bhubaneswar Website- www.iopb.res.in/tenders/

14.6.23

रेजिस्ट्रार/REGISTRAR
भौतिकी संस्थान/INSTITUTE OF PHYSICS
भुबनेश्वर/BHUBANESWAR

TECHNICAL BID
SUPPLY & Installation
OF

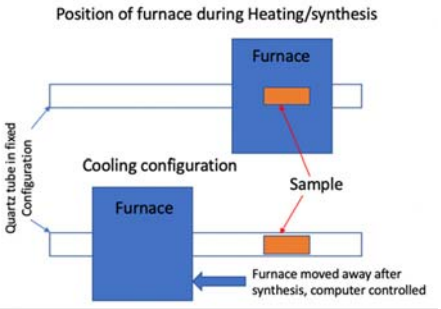
ARC PLASMA DEPOSITION SYSTEM

FOR

INSTITUTE OF PHYSICS, BHUBANESWAR
Notice Inviting E-Tender No. NIT/IOP/54/2023-24

S/N	Item Description	Technical Compliance (Yes/No)	Remark
	Technical Specifications		
1	**Overall Configuration**		
1.1	The system should have a dual stacked reaction chambers in a horizontal configuration.		
1.2	The entire system, all its hardware and the sample preparation protocol should be computer controlled *via* LabVIEW-based graphical user interface. Appropriate control rack should be provided including the system control PC and other necessary electronics.		
1.3	The system's two reaction chambers should share the following subsystems: • Gas inputs, mixing & distribution; • Auto Pressure control; • Pumping & exhaust arrangement; • Automated PC control;		
1.4	All vacuum connections in the system should be of stainless steel (SS) and that the entire system should internally be connected through 1/4" rigid SS piping with Swagelok fittings		
1.5	System provided should be a compact one:		
a	Overall footprint of the main system should not exceed L x W x H of 1.75m x 1.5m x 1.5m.		
b	All the electronic panels should be mounted below the furnaces plane with in the given foot print.		

c	Entire system, specially the furnaces mounting plane consisting of valves, gas detectors, cold trap, sensors, etc. should be enclosed inside a transparent safety cover. The overall footprint mentioned above is inclusive of this safety cover.		
1.6	The reaction chambers should be arranged such that one chamber can be used for organic synthesis like graphene and hexagonal boron nitride growth, etc. and other chamber can be used for inorganic material synthesis like transition metal dichalcogenide, etc.		
1.7	A complete library of standard recipes and processes should be provided to produce the following materials: • Single-layer (monolayer) graphene. • Few-layer hexagonal boron nitride. • Single crystal molybdenum disulphide. • Multiple layer Graphene • Composite/heterostructure films.		
1.8	The tenderer should be able to provide published references originating from their system, in peer review journal for growth of the above materials.		
1.9	Computer control operation		
a	The entire system and all the operations except loading the sample into the system should be centrally controlled through a computer via a single LabVIEW-based graphical user interface.		
b	User should be able to feed in customized routine for sample growth into the LabVIEW-based graphical interface which in turn should fully control the system hardware.		
1.10	The tenderer should be able to provide list of users (at least ten (10) reference) and their contact information with dual-chamber configuration and having LabVIEW-based graphical user interface.		
1.11	The tenderer should provide information on how the films can be transferred “wet” transfer to other target substrates (glass, SiO2, etc.).		
2	**Reaction Chambers**		
2.1	Both reaction chambers should have cylindrical quartz tubes of at least 1m in length with an outer diameter of 50 mm and inner diameter of 45 mm. Quartz tube should have open ends and be able to withstand temperatures of up to 1100°C.		
2.2	Each reaction chamber should have two (left & right) leak-resistant and heat-resistant (up to 300°C) SUS304 stainless steel flanges with silicone O-rings to cap the ends of the quartz tubes.		
2.3	The upstream (left) flanges should include a thermocouple port (> 5 mm), and thermocouple to measure the precise temperature at the required heating point inside the quartz tube.		
2.4	Flange design should be such that no cooling water is required		

	to cool the flanges.		
2.5	Flange design should be such that it is vacuum compatible.		
2.6	Flange design should be such that it allows for "quick release" and easy changing of the quartz tubes.		
3	**Heater Configuration**		
3.1	The first chamber shall be used for growth of organic film synthesis like: Graphene and hexagonal boron nitride.		
a	Chamber should include a fixed 1-zone furnace with Kanthal wire heating elements and maximum temperature of 1100°C and embedded K-type thermocouple. The heating zone of this furnace should be a minimum of 200mm in length. The heater should also include a minimum 15-step programmable temperature controller.		
b	The system should include a safety interlock for automatic furnace shutdown mechanism with adjustable threshold temperature of up to 1200°C.		
3.2	Furnace should be mounted on a railing so that it can be moved along the length of the tube (keeping the quartz tube fixed) after the synthesis is over for quenching the sample. This entire process should be automated, computer controlled and should be part of the sample synthesis protocol/program. 		
3.3	In the remark section 5 references should be provided where a movable furnace arrangement is provided in the past.		
3.4	The chamber should include an Arc plasma generation unit a 300W, 13.56MHz RF-ICP module and associated electronics for arc plasma generation. Provision should also be available to induce an arc discharge from a substrate. The module should also include an appropriate matching network with autotuning and water-cooled RF coil.		
3.5	The chamber shall include an SUS304 stainless steel heated ampule for organic-inorganic powder sublimation and diffusion.		
3.6	The above ampule shall include a heating jacket with maximum temperature of 150°C and filtering element to prevent unwanted polymeric aminoborane particles.		

3.7	The diffusion lines from the ampule to the system shall include heated tape with maximum temperature of 100°C and a high-temperature valve.		
3.8	The second chamber shall be used for growth/synthesis of inorganic films like various transition metal dichalcogenide. It should include two heating chambers.		
a	1. A fixed (downstream) 1-zone furnace with Kanthal wire heating elements and maximum temperature of 1,100°C and embedded K-type thermocouple. The heating zone of this furnace should be 150mm in length. The heater should also include a minimum 15-step programmable temperature controller.		
b	2. A fixed (upstream) 1-zone furnace with Kanthal wire heating elements and maximum temperature of 1,100°C and embedded K-type thermocouple. The heating zone of this furnace should be 150mm in length. The heater should also include a minimum 15-step programmable temperature controller.		
c	Each furnace's temperature, ramp rate and duration should be programmable with at least 15 process steps.		
d	All furnaces must be able to accommodate the size of the quartz tubes as specified above.		
e	The system should include a safety interlock for automatic furnace shutdown mechanism with adjustable threshold temperature of up to 1,200°C.		
4	**Pumping System Configuration**		
4.1	The vacuum pumping system should consist of a Dry Scroll Pump ***Specifications of Scroll pump***		
a	Minimum capacity of pump: 250 l/min,		
b	Ultimate pressure: 1.2 x 10^{-2} Torr		
c	Pump should have minimum of 2-year maintenance cycle		
d	Noise level < 58 dB		
e	Should have an indicator/meter on hours of operation.		
4.2	The system should be provided with convection gauge and gauge controller. ***Specifications of gauge and gauge controller***		
a	Gauge should be capable of measuring pressure range:1 mTorr up to 760 or wider		
b	Gauge should have appropriate KF flange.		
c	Gauge controller should be able to display vacuum in Torr, mbar and Pa (user selectable)		
d	Gauge controller should have LCD/LED display		
e	Gauge controller should have 2 independent set points		
f	Gauge controller should have RS232C / RS485 interface option for remote control		

g	Apart from on off switch gauge controller should also have sensor On/Off button		
h	Gauge controller should atmosphere pressure setting/Zeroing adjust function		
5	**Gas Distribution System Configuration**		
5.1	The system should have 3 gas inlets with appropriate Mass Flow Controller (MFC) for Argon (Ar), 1,000 sccm; Methane (CH_4), 200 sccm; and Hydrogen (H_2), 100sccm. ***Specifications of Mass flow controller (MFC)***		
a	Each MFC should be accompanied with a separate leak valve.		
b	Accuracy: +/- 1% of full scale		
c	Resolution: 0.1% of full scale		
d	Maximum inlet pressure: 150 psig		
e	Normal operating pressure differential 10 – 40 PSID		
f	Controller settling time: 2 Sec		
g	Fitting: Swagelok ¼ inch		
h	Seals: Viton, Teflon		
i	Should have an interface for remote operation		
j	Set point command signal: 0 – 5 VDC		
k	Output Signal: 0 – 5 VDC		
5.2	Should be supplied with the appropriate Exhaust Throttle valve: ***Specifications of throttle valve:***		
a	Should be able to provide fast and precise pressure control over the entire operating range		
b	Speed (open to close) 1.5 Sec or faster		
c	Operating valve body temperature 0 – 150 ^{0}C		
d	Differential pressure across valve: 1 atm		
e	External leakage at shaft seal: 1 x 10^{-8} scc/sec He		
f	Closed leakage: <10^{-7} Torr/Sec		
g	Should have appropriate interface for remote control		
h	Should have KF flange		
5.3	Should be supplied with the appropriate pressure and flow controller ***Specifications of pressure and flow controller***		
a	This is the heart of the system which should control all the process and hardware and should have a computer interface.		
b	Should be able to operate/control the MFC's as mentioned in **section 5.1** manually as well using the LabVIEW-based graphical interface through computer.		
c	Should be able to control throttle valves mention in **section 5.2** manually as well using the LabVIEW-based graphical interface through computer.		
d	Should be able to control and read vacuum gauge mentioned in **section 4.2** manually as well using the LabVIEW-based		

	graphical interface through computer.		
e	Input signal: 0-10 V Analog o/p signal: 0-10 V		
f	Should be programable: a minimum of 5 programs or more in any combination of pressure (MFC's) and position (Throttle valve)		
g	Should have Graphic LCD display (128 x 64 or more)		
h	Should be able to display pressure, position and external set-points.		
i	Should be able to display pressure in units of Torr, mBar, Pa, etc. (as specified by the user)		
j	Should have PID control		
k	Interface: Front panel, Analog, TTL and RS232, RS485		
l	Should have a remote port so that it can be connected to the computer and controlled through LabVIEW-based graphical interface.		
m	Controller repeatability: +/- 0.01% of full scale		
n	Size: ½ rack		
5.4	The subsystem shall include a 4-channel (or more) MFC controller. Space should be available in the system frame for future upgrade to include a 4th MFC. (Quote for the 4th MFC should be provided)		
5.5	These gas inputs shall be shared between the two chambers, and the user should be able chose which chamber receives gas via automated PC control.		
6	**Auto Pressure Control System Configuration**		
6.1	For regulation of working pressure, the system should include a subsystem for Auto Pressure Control (APC) consisting of: • Motorized butterfly-type Throttle Valve (TV); • 10 Torr Capacitance Manometer (CM); • 1,000 Torr Capacitance Manomter (CM); • Accuracy of CM better than 0.25% • Controller for TV & CM;		
6.2	The system control PC will allow for easy selection between the 10 and 1,000 Torr capacitance manometers for easy adjustment of working pressure ranges.		
7	**System Control Configuration**		
7.1	The system should include a separate control rack that includes the system PC and all other electronic components.		
7.2	The system control PC should include a minimum of an Intel Core2Duo 3.0 GHz processor; 8GB of memory; Windows 10 Embedded OS; and a 24" LCD monitor.		
7.3	The system software should include a LabVIEW-based user interface that allows the user to fully control the system automatically by stored recipes with a minimum of 15-steps.		
8	**Power and Safety**		

8.1	The system shall include a LN_2 or water-cooled cold trap placed before the pump to trap particulate matter.		
8.2	For safety, the system shall include an H_2 dilution system at the pump inlet to dilute H_2 flows with Ar or N_2 gas.		
8.3	Should provide Hydrogen sensor for safety purpose. It may be installed in the transparent safety enclosure.		
8.4	Emergency stop button and other safety interlocks should be present.		
8.5	Power: 3 phase power (~400V, 50A) or lower System should operate on 3-phase power and load should be balanced across the 3 phases.		
9	**Site Installation, Training & Support**		
9.1	On-site installation support and commissioning should be provided.		
9.2	Training on equipment usage to be provided for, including a demonstration of 1. Monolayer graphene growth on Copper (Cu) foil. 2. Multilayer graphene growth on Copper (Cu) foil. 3. Hexagonal boron nitride on Copper foil. 4. MoS_2 growth on SiO_2/Si substrate. At least 3 process should be demonstrated at site.		
9.3	The tenderer should be able to provide support and problem diagnosis remotely via online connection. After installation, the tenderer will also provide additional online support for optimization of demonstrated process, as well as undemonstrated processes, for a period of six (6) months.		
9.4	The tenderer should also be able to provide training on the "wet" transfer (PMMA method) of graphene to target substrates (glass, SiO2, etc.).		
9.5	Training on equipment maintenance should be provided.		
10	**Consumables/Accessories**		
10.1	SUS304 stainless steel heated ampule for organic-inorganic powder sublimation and diffusion (total 2 units) (section 3.5)		
10.2	Accessories/leak sealant for Dry Scroll Pump (mentioned in section 4.1) for regenerating the pumping capabilities after long use.		
10.3	Ten (10) A4-sized sheets (or equivalent size roll) of high-quality Copper (Cu) foil should be provided. This foil should have undergone a proprietary annealing treatment, resulting in a highly crystalline surface optimized for graphene growth.		
10.4	SiO2/Si wafers, minimum of 5 number.		
10.5	One extra set of O-rings and gaskets for the entire system.		
10.6	Any other consumable for 2 year of operation		
11	**Warranty: One year.**		

Documentary requirement:

1. List of end-users at least ten (10) should be provided with their contact information (email/phone number, university/organization, etc.) with dual-chamber configuration and having LabVIEW-based graphical user interface. These end users will be contacted for testimonials for evaluating the technical bid. Will be used for technical evaluation.

2. Published references in peer review journal for growth of monolayer and multilayer graphene, Hexagonal boron, MoS_2 and composite films, etc. should be provided where the OEM's instrument is used. These references will be used for technical evaluation.
3. The tenderer should provide information/writeup on how the films can be transferred "wet" transfer to other target substrates (glass, SiO2, etc.).
4. Blue print/Design of the entire system with dimensions should be provided.
5. Snapshots of the LabVIEW program which controls various parameters / sample growth should be provided.
6. Manual for various parts used in the entire setup should be provided for technical evaluation.
7. Manual for operation the instrument and sample growth should be provided for technical evaluation.

Contact for information: (Only E-mail enquiries will be entertained)

For Technical Information:-

Prof. Dinesh Topwal
Email ID: dinesh.topwal@iopb.res.in
Mobile No.94371 68849

INSTITUTE OF PHYSICS
BHUBANESWAR

GENERAL TERMS AND CONDITIONS OF TENDER

INSTITUTE OF PHYSICS, BHUBANESWAR

Instruction for Online Bid Submission

The details of tender notification can be downloaded from https://eprocure.gov.in/eprocure/app or Tender Free View Link from www.iopb.res.in/tenders/

1. Vendors should obtain the USER ID and PASSWORD from **CPP Portal** by clicking on "https://eprocure.gov.in/eprocure/app" link in the homepage.
2. For further details on e-Tender participation, please contact Help desk as mentioned below:-

   Telephone: 0120-4200 462/ 0120-4001 002/ 0120-4001 005/ 0120-6277 787

   Email: **support-eproc(at)nic(dot)in**.
3. Tenders should be submitted only through **CPP portal** and obtain the Tender Acknowledgement copy as a proof of successful submission.
4. Tender documents for viewing only are also available in Institute of Physics web-site address: HYPERLINK-http://www.iopb.res.in/tenders/
5. All corrigendum and addendum will be published on IOP,BBSR website and CPP Portal.
6. IOP,BBSR is publishing all its public and limited tender on IOP,BBSR website.
7. *For any query regarding tender terms & conditions please send email to dnsahoo@iopb.res.in*

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 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 for 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 / email 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.

STANDARD TERMS & CONDITION FOR INVITING E-TENDER

1. Director, Institute of Physics, Bhubaneswar (IOP) invites E- Tenders for**the items (mentioned in the e- tender documents)** from the Manufacturer and their authorized reseller only having following credentials.

   A. Should have satisfactorily completed **03 similar supply** (at least one of them in Central Government/Central Autonomous Body/Central PSU)

   B. Similar or Similar Nature of work means Supply & Installation of **the items (mentioned inthe e-tender documents)** for any of the following :

   a) Government/Autonomous Institutions

   b) Government Research Centres

   c) Universities

   d) Autonomous/Reputed Private Research Centres

   e) Purchase Orders / Completion certificates if any, for supporting above requirements.

The Bidders are requested to give detailed tender in the prescribed forms in the format given.

2. For Information regarding Commercial & all other Terms & Conditions:

Shri Santosh Kumar Choudhury

OIC, Purchase Cell
Institute of Physics, Bhubaneswar

Email: santosh@iopb.res.in

3. Supply means:

"Supply, Installation, Commissioning and satisfactory demonstration of the mentioned items/ equipments".

4. Tender Document:

a) Tender documents contain following:

i. Detail tender documents in PDF to read & download only.

ii. The following documents needs to be filled mandatorily:-

- Tender Notice (PDF)
- Tender Document (PDF)
- Financial Bid (Excel)

All parts are mandatory to download, fill & to be submitted in CPP Portal.

b) The purpose of certain specific conditions is to get or procure best product/service etc. for IOP. The opinion of Technical Committee shall be the guiding factor for technical short listing.

c) The earnest money deposit as indicated against the item should be sent by post so that it reaches on

or before the opening of the technical bid for e-tender system in the form of Account Payee. Bank Draft payable on any branch of Nationalized/Schedule Bank at Bhubaneswar in favuor of "**Director, Institute of Physics, Bhubaneswar**", in a separate sealed envelope. All tenders submitted without requisite amount of earnest money shall be rejected and their technical and financial bids shall not be opened. No interest is payable on EMD. The EMD will be returned to the bidders(s) /Agents whose offer is not accepted by IOP within one month from the date of the placing of the final order(s) on the selected bidder(s). In case of the bidder(s) whose offer is accepted the EMD will be returned on submission of Performance Bank Guarantee (if applicable). However, if the return of EMD is delayed for any reason, no interest /penalty shall be payable to the bidders.

EMD EXEMPTION:

Parties registered with MSME/NSIC/DAE/SSI should have valid certificate for the items being Tendered, are eligible for exemption of EMD.

The bidder shall be suspended:

If the bidder withdraws the bid during the period of bid validity specified in the tender.
In case a successful bidder fails to furnish the Performance Bank Guarantee.

Performance Bank Guarantee: (IF APPLICABLE)

Within ten (10) days of the award of contract, the vendor shall furnish a Performance Bank Guarantee amounting to 3% of the purchase order value in the form of Bank Guarantee in favour of "The Director, Institute of Physics, Bhubaneswar valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. BG should be from any Nationalised/ Scheduled bank in India.

Following documents needs to be uploaded on E-Tender portal.

a) If the bid is for branded makes, authorization letter from principals clearly indicating that the vendor is the competent authority to sell and provide services towards the items mentionedin the scope of supply given in this tender document.
b) Copy of GST No. and PAN No. allotted by the concerned authorities.
c) List of deliverables / Bill of materials and services.
d) Compliance sheet with any deviation with reference to the terms and specifications.
e) The item should be supplied with manuals and the manuals including technical drawings should be complete in all respects to operate the system without any problem.

"Commercial Bid" shall contain:

a) Price schedule complete in all respects. **Tender with any condition including conditional rebate shall be rejected forthwith.**
b) Cost of all the items should be mentioned clearly and individually in the Commercial Offer only.
c) *The Bidders are requested to quote for Educational/Institutional Price for Machine/Equipment and, since we are eligible for the same.*
d) Printed conditions of the vendor submitted with the tender will not be binding on Institute of Physics, Bhubaneswar

5. Tender process & award of contract (AOC):-

The technical bids will be evaluated to shortlist the eligible bidders. Bidders whose technical offer is found acceptable and meeting the eligibility requirements as specified in this tender will only be consider for price comparison. Recommendation of technical committee will be posted on IOP website.

a) ONLY TECHNICALLY accepted competitive bids will be considered for placing Purchase Order.

6. **Purchaser's Right to vary Quantities at the time of Award:** IOP reserves the right at the time of award of Contract to increase or decrease the quantity of items specified in the Schedule of Requirements without any change in price or other terms and conditions. The Director, IOP reserves the right to accept the offer in full or in parts or reject summarily or partly.

7. Delivery Period / Timeliness

The deliveries, installation must be completed within 60 days for indigenous items & 120 days for foreign items, after placement of purchase order. The time is the essence of the contract. It is mandatory for the bidders who respond to this bid to meet these expectations, as they are tightly linked to IOP's plans of completing the project within the time frame.

8. Locations for the Supply / Services

The item covered by this document is required to be supplied & installed at IOP (Mentioned in theCPP portal), Bhubaneswar of Concern Departments or labs.

9. Order Placement and Release of Payment

The Purchase Order and payment shall be processed by –

Registrar
Institute of Physics,
PO-Sainik School,
Bhubaneswar-751005

Payment for the items to be supplied by the vendor against the purchase order shall be made by Institute of Physics, Bhubaneswar as follows:-

INR payment:-

100% payment to be released after receipt of material, installation and submission of warranty certificate along with 10% performance bank guarantee of purchase order value from any nationalized bank in India valid for the entire warranty period plus three months for claim lodgment period.

The tenderers who are not agreeing to above payment terms are requested not to submit their tender otherwise their EMD will be forfeited.

10. **IOP** will not provide any accommodation/transportation for the engineers/ representatives for attending installation, commissioning and demonstration work. It is the absolute responsibility of the Principal Supplier/Indian Agent to make their own arrangements.

11. **The successful bidder,** on award of contract / order, must send the contract / order acceptance in writing, within 7 days of award of contract / order failing which the EMD will be forfeited.

12. Period of validity of bids

a) Bids shall be valid for a period of 90 days from the date of opening the Technical bid.
b) IOP may ask for the bidder's consent to extend the period of validity. Such request and the response shall be made in writing only. The bidder is free not to accept such request without forfeiting the EMD. A bidder agreeing to the request for extension will not be permitted to modify his bid.
c) Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

13. Corrupt or Fraudulent Practices

IOP requires that the bidders who wish to bid for this project have highest standards of ethics. IOP will reject a bid if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract. IOP may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it at any time determines that the vendor has engaged in corrupt and fraudulent practices during the execution of contract.

14. Interpretation of the clauses in the Tender Document / Contract Document

In case of any ambiguity / dispute in the interpretation of any of the clauses in this Tender Document, Director, IOP's interpretation of the clauses shall be final and binding on all parties.

15. Price

a) The price quoted shall be considered firm and no price escalation will be permitted at any time. The quotation should be in Indian Rupees.
b) **Only INR bids**: The price criteria should be on delivered at IOP, Bhubaneswar including Free onsite comprehensive warranty, installation, commissioning, Training, demonstration, packing, transportation, insurance, loading & unloading (At IOP) etc. charges. Govt. Levies like GST, etc.,if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, GST, etc., if any.
c) Please provide GST no. allotted by the concerned authorities in your quotation.

16. Pre-installation:

Pre-installation facilities required for installation may please be intimated in the technical bid. Subsequently, before the consignment lands in IOP, Bhubaneswar the bidder shall confirm that the pre- installation requirements are sufficient for installation of the equipments. In other words the bidder should continuously monitor the pre-installation requirements and see that everything is ready before the consignment is taken to the site for installation.

17. Installation, Warranty & Support

a) Bidder shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty and thereafter.

b) The items covered by the schedule of requirement shall carry ***onsite free comprehensive warranty from the date of installation and onsite service support*** (warranty mentioned in the tender documents accordingly) of the equipments by IOP. Warranty shall include free maintenance of the whole equipment supplied including free replacement of parts. The defects, if any, shall be attended to on immediate basis but in no case any defect should prolong for more than 24 hours. The comprehensive warranty includes onsite warranty with parts.

c) ***The defects, if any, during the guarantee/warranty period are to be rectified free of charge by arranging free replacement wherever necessary. This includes cost, insurance, freight, custom duty, GST, local taxes if any should be borne by the beneficiary or his agent. A clear confirmation should be given for this item.***

d) The bidder shall assure the supply of spare parts after warranty is over for maintenance of the equipment supplied if and when required for a period of 05/10 years from the date of supply of equipment on payment on approved price list basis.

e) The equipment must be supported by a Service Centre manned by the principal vendor's technical support engineers. The support through this Centre must be available 24 hours in a day, seven days a week and 365 days a year. Also it should be possible to contact the Principal's vendor support Centre on a toll free number/web/mail.

f) The vendor will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc.

18. Indemnity

a) The vendor shall indemnify, protect and save IOP against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any law pertaining to patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the equipment's supplied by him.

b) The successful bidder will be fully responsible for payment of wages and other dues as prescribed and compliance of various Labour Laws.

c) The successful tender should give an undertaking that the staff deployed at the centre in terms of this contract at all time will be employees of the agency exclusively and they shall not be entitled to any claim of employment or permanency of job with IOP.

d) IOP reserves the right to forfeit whole or part of the security money towards any damage/lose caused due to the negligence on the part of the agency engaged.

19. Insurance

The equipment's to be supplied will be insured by the vendor against all risks of loss or damage from the date of shipment till such time it is delivered at IOP site in case of Rupee/Foreign currency transaction.

20. Penalty for delayed Services / LD

As time is the essence of the contract, Delivery period mentioned in the Purchase Order should be strictly adhered to. Otherwise the bidder will forfeit EMD/SD and also LD clause will be applicable /enforced.

If the supplier fails to Supply, Install and Commission the equipment as per specifications mentionedin the order within the due date, the Supplier is liable to pay liquidated damages of 1%

of order value per every week of delay subject to a maximum of 10% beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier.
IOP reserves the right to cancel the order in case the delay is more than 30 days Penalties, if any, will be deducted from the EMD.

21. Jurisdiction

If a dispute arises out of or in connection with the contract, or in respect of any defined legal relationship associated therewith or derived there from, the parties agree to submit that dispute to arbitration under the ICADR Arbitration Rules, 1996.

The authority to appoint the arbitrator(S) shall be the International Centre for alternative dispute resolution.

The International Centre for Alternative Dispute Resolution will provide administrative services in accordance with the ICADR arbitration Rules, 1996.

Bid Security Declaration

(In Company's letter head)

Invitation to Bid/Request for Expression of Interest No. [Insert reference no.]

To

Institute of Physics,

PO-Sainik School,

Bhubaneswar-751005

I/We understand that, according to your NIT conditions, bids must be supported by a Bid Security. In lieu of the Bid Security, we submit the following undertaking:-

"I/We declare that we will be suspended/ disqualified for tendering with the entity for a period of 1 (One) year from the date of receipt of notice from you, if we withdraw or modify our bid during the validity period **OR** fail to sign the Contract **OR** fail to submit Performance Security (if applicable) before the defined deadline **OR** fail to execute contractual obligation within the stipulated time."

Date:- Signature of the Bidder

Place:- (**with Company seal**)

DECLARATION BY THE VENDOR

It is hereby declared that I/We the undersigned, have read and examined all the terms and conditions etc. of the tender document for which I/We have signed and submitted the tender under proper lawful Power of Attorney. It is also certified that all the terms and conditions of the tender document are fully acceptable to me/us and I/We will abide by the conditions from serial no. 1 to 21 and we have not given any printed conditions beyond the scope of this tender. This is also certified that I/We/Our principal manufacturing firm has no objection in signing the purchase contract if the opportunity for the supply of the items against this tender is given to me/us.

Date: Signature:

Address: Name:

Designation:
On behalf of:

(Company Seal)

ORIGINAL EQUIPMENT MANUFACTURING (OEM)

MANUFACTURING AUTHORISATION FORM

(On Letter Head of Manufacturer)

Tender No. :- ..... Date:- .....

To
The Director,
Institute of Physics,
PO-Sainik School,
Bhubaneswar-751005

Dear Sir,

We manufacture(s) of original equipment at (.....address of factory……..) do hereby authorize M/s (Name and address of Agent(s)) to submit a bid, negotiate and receive the order from you against your tender enquiry.

No company or firm or individual other than above is/are authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per the Tender terms and conditions for the goods and services offered by the above firm.

Yours Faithfully,

(Name)

(Name & Seal of manufactures)

Note:- This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by bidder in its techno-commercial and priced bid.

PRICE REASONABILITY CERTIFICATE

(ON THE LETTER HEAD OF THE COMPANY)

It is certified that the rates quoted against Tender No. .....Dated..... for the items vide our bid No. ..... dated.....are exclusively for supply to ACADEMIC and RESEARCH Institutions and are not more than as charged to other Govt. /PSU 's /Autonomous bodies for similar supplies-made in recent past. It is further certified that we have offered the maximum possible discount to IOP, Bhubaneswar inour Quotation No. ..... dated .....for (currency) ..... The quoted price is the minimum. We will not offer lower rates to any other customer (Govt. /PSU's/Autonomous bodies), till the validity of offer or execution of purchase order, whichever is later. If they have been approved by the Director, IOP, Bhubaneswar and if at any stage it has been found that quoted rates are higher, then in such conditions IOP, Bhubaneswar, will have the right to cancel the approved rates and to take legal action against the tenderer.

Yours faithfully,

(Name of manufacture)

(Signature with date) (Name and designation)

Duly authorized to sign tender for and on behalf of

LOCAL CONTENT DECLARATION

PREFERENCE TO MAKE IN INDIA

ORDER NO. P-45021/2/2017-PP(BE-II) DT. 16.09.2020

(Declaration by the bidder on their letter head**)**

To, **Date:**

REGISTRAR

Institute of Physics,

PO-Sainik School

Near Appollo Hospital

Bhubaneswar-751005

Dear Sir,

We, M/s …….. having its office at ……(address) hereby confirm that the offered product has ……% of local content as per the definition of local content in order No.P-45021/2/2017-PP(BE-II) Dt. 16.09.2020 issued by GoI.

Following is/are the location(s) at which local value addition is made:

Yours sincerely,

Signature

Name

Designation

Contact No.

NOTE:

1. Class I local supplier means a supplier or service provider whose goods, services orworks offered for procurement has minimum 50% local content.
2. Class II local supplier means a supplier or service provider whose goods, services orworks offered for procurement has minimum 20% local content.
3. Non-local supplier means a supplier or service provider whose goods, services or worksoffered for procurement has local content less than 20%.
4. Only "Class-I local suppliers and Class-II local suppliers", as defined under the order, shall be eligible for participation against this tender. The offers of 'Non-Local Suppliers'shall not be considered for evaluation against this tender.

The **Online Bids** in all aspects must be completely uploaded & filled online in **Two Envelopes** as explained below:-

General Information –Self Attested		
Envelope -1 (Following documents to be provided mandatorily as Single PDF File)		
Sl. No.	**Basic Information**	**To be provided in (.pdf) Format only**
1	Name of the Company	.PDF
2	Full address of company along with Telephone no. Fax no. E-mail address :	.PDF
3	Local address of company for communication, if any	.PDF
4	Are you a manufacturer or dealer/reseller	.PDF
5	If dealer please attach certificate from your principal company clearly showing validity of the certificate	.PDF
6	If foreign supplier : Please give details of your Indian authorized partner if any	.PDF
7	Annual turn-over in last 3 financialyears in Rs. Crores. (i) Year 2019-2020 (ii) Year 2020-2021 (iii) Year 2021-2022 Please attach balance sheet	.PDF
8	Supply & Installation of "Tendered Item(s)" or equivalent to our tendered item(s) of last 3 financial years in State Government or Govt. of India Department(s) /Reputed Organization(s) (in Nos. and Value) (Please attach list of clients) (i) Year 2019-2020 (ii) Year 2020-2021 (iii) Year 2021-2022 Please attach copy of Purchase Order/ Completion Certificate	.PDF
9	GST Registration no. with Place PAN Card Details	.PDF
10	Income Tax Registration no. with place	.PDF
11	Photocopy of EMD	.PDF
12	Name and address on whom purchase order will be placed	.PDF

13	Bank details (IFSC CODE/Swift Code, Account Number/IBAN Number) of the supplier on which order will be placed (Both Foreign & Indigenous)	.PDF
14	If you are claiming exemption certificate under SSI/MSME/DAE/NSIC, Please attach self attested copy of certificate which should be valid during the tender process. Parties registered with MSME/NSIC/DAE/SSI should have valid certificate for the items being tendered.	.PDF
15	Service centre details & principal vendor support centre	.PDF
16	Vendor Declaration (In Company's Letter Head with Signature, Seal & Stamp)	.PDF
17	Price Reasonability Certificate	.PDF
18	OEM Authorization Form	PDF
19	BID Security Form	PDF
20	Local Content Declaration Form	PDF
21	Technical Compliance Sheet of IOP	.PDF
22	Technical Bid with Quotation Number and Date (In Company's Letter Head)	.PDF
Envelope -2 (Price Bid should be submitted in given BOQ_XXX.xls format)		
1	Financial/Price bid (BOQ)	.XLS

REGISTRAR
INSTITUTE OF PHYSICS
BHUBANESWAR