

TENDER FORM

प्लाज्मा अनुसंधान संस्थान

(भारत सरकार के परमाणु ऊर्जा विभाग का सहायता प्राप्त संस्थान)

इंदीरा ब्रिज के पास, भाट, गांधीनगर - 382428, भारत

दूरभाष: 079-23962020/23962021, फ़ैक्स: 079-23962277

INVITATION OF NOTICE FOR EXPRESSION OF INTEREST

The Purchase Officer, Institute for Plasma Research invites online **Expression of Interest (EOI)** for “Designing, Manufacturing, Testing and supply of Spring Energized C Rings” as detailed in the Purchaser’s EOI documents.

If you are in a position to submit your EOI proposal in accordance with the requirements stated in the attached Tender Form please submit your EOI proposal **online**.

EOI submitted by **fax/cable/telegram or any mode other than online will NOT be considered at all** and all such proposals will be rejected without any notice to the tenderer.

Yours faithfully,

Purchase Officer-II

For and on behalf of Director, IPR
Institute for Plasma Research

Encl: as above.

INSTRUCTION FOR ONLINE SUBMISSION

- 1) It is mandatory for all the applicants to have **class-III digital signature certificate** from any of the licensed Certifying Applicant to participate in e-tendering.
- 2) In order to participate in online e-tendering process, it is mandatory for the applicants to have **user ID & password** to get access to the website www.tenderwizard.com/DAE. The applicants have to get registered their firm / company with the service provider, M/s ITI Limited for user ID & password. The registration shall be done by paying an annual registration fees to M/s ITI Limited and completing other formalities as mentioned in the website, www.tenderwizard.com/DAE. Validity of online registration is for one year from the date of its issuance and may be renewed by paying the applicable amount. For assistance/clarifications please contact Mr. Sunil K Patel at mobile 09624981992, e-mail: twhelpdesk426@gmail.com or nodalofficer.et@ipr.res.in or All India Help line No: 91-80-40482000, e-mail: daehelpdesk@tenderwizard.co.in
- 3) The applicants, who have already obtained such valid user ID and password from M/s ITI Limited, for any other tender of DAE, need not obtain fresh user ID and password for the purpose of participation in the present tender.
- 4) The services for e-tendering in IPR/DAE is provided by M/s ITI Ltd., Tender wizard Help Desk Centre, # 24, 1st Floor, Sudha Complex, Near Havanoor Circle, 3rd Stage, 4th Block, Basaveshwaranagar, Bangalore – 560079, Ph:91-80-40482000, Telefax: 91-80-40482114, Email: daehelpdesk@tenderwizard.co.in
- 5) The quotations shall be submitted online in the prescribed format before the date and time as mentioned in tender document. No other mode of submission is acceptable.
- 6) On successful e-payment of tender processing fees, the applicants can download the tender documents (including Excel sheets, if any) from the e-tendering portal.
- 7) Submission of the offer document after the due date and time shall not be permitted. Time being displayed on e-Tendering portal shall be final and binding on the applicant.
- 8) Applicants are advised to submit their documents well before the due date. IPR shall not be responsible for any delay in submission of documents for any reason including server and technical problems.
- 9) In case of any problem with the submission of the offer documents, the applicant may have the assistance of helpdesk or use the help manual given on the said website or mobile and e-mail mentioned elsewhere.

<p>प्लाज्मा अनुसंधान संस्थान इंदीरा ब्रिज के पास, भाट, गांधीनगर - 382428 गुजरात राज्य दूरभाष: 079 23962021, 23962023 फैक्स: 079 23962277</p>	<p>INSTITUTE FOR PLASMA RESEARCH NEAR INDIRA BRIDGE, BHAT, GANDHINAGAR 382 428 GUJARAT STATE Phone: 079 23962021, 23962023 Fax: 079 23962277</p>
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**NOTICE FOR EXPRESSION OF INTEREST AND
SELECTION OF VENDOR FOR
DESIGNING, MANUFACTURING, TESTING AND SUPPLY OF
SPRING ENERGIZED C RINGS**

EOI No.EOI/IPR/20-21/1 DATED 4-1-2021

“**Expression of Interest**” (EOI) is invited through e-tendering mode (**online**) from potential bidders to get pre-qualified for the tender “Designing, Manufacturing, Testing and supply of Spring Energized C Rings as per the specifications given in the EOI documents.

Tender/EOI Processing Fee	Tender/EOI Processing Fee of Rs.59.00 should be paid through electronic mode to M/s ITI Limited.
EOI document available for view and downloading on website	17.00 hrs. on 4-1-2021 to 12.55 hrs. on 17-2-2021
Clarifications regarding EOI document	17.00 hrs. on 4-1-2021 to 16.00 hrs. on 5-2-2021
Closing of online submission of EOI proposal	17-2-2021 at 13.00 hrs.
Time and Date of online Opening of EOI proposal	17-2-2021 at 14.30 hrs.

Interested Bidders who shall be SINGLE ENTITY, meeting the eligibility criteria (Technical/Professional Capacity, Competency, Experience and Financial criteria) can download the EOI documents from e-tender portal and shall upload their EOI proposal along with requisite documents showing the proofs of their eligibility and Annexure A duly filled-in, signed and stamped by the bidder on the e-tender portal before the closing time.

The applicant can seek clarifications (pre-bid) regarding the EOI document up to 5-2-2021 (16:00 Hrs) by uploading their queries on website www.tenderwizard.com/DAE . The clarifications will be uploaded on the same web portal www.tenderwizard.com/DAE by 9-2-2021 (17:30 Hrs).

The EOI document containing eligibility requirements, technical descriptions, scope of work and terms & conditions are available on website www.tenderwizard.com/DAE for free view and downloading. For participating in the e-tendering process, it is mandatory to get registered on the above e-tender portal and required to have Digital Signature Certificate (Class -III). For new registration/ tendering help, bidders may contact DAE

Helpdesk at daehelpdesk@tenderwizard.co.in Phone No: (80)-40482000/ 9624981992/ 18004255048.

A copy of this EOI is also available on the Institute's website www.ipr.res.in//purchasetenders.html. For further information, please contact: 079 23962020/2021, Fax: 079 23962277.

INSTITUTE FOR PLASMA RESEARCH
NEAR INDIRA BRIDGE, GANDHINAGAR HIGHWAY
BHAT, GANDHINAGAR 382 428
GUJARAT STATE

PHONE: 23962021 / 23962023

FAX: 91-079 2396 2277

NOTICE FOR EXPRESSION OF INTEREST AND

**SELECTION OF VENDOR FOR
DESIGNING, MANUFACTURING, TESTING AND SUPPLY OF
SPRING ENERGIZED C RINGS**

EOI No.EOI/IPR/20-21/1 DATED 4-1-2021

1.0 Technical / Professional Capacity, Competency and Experience

- 1.1 Bidder shall have past experience in the last 3 years in developing metallic seals/metallic gaskets/vacuum components/vacuum sealing and their technologies/special design of vacuum sealing surfaces for nuclear / vacuum / space application. Bidder shall submit copies of at least one Purchase Order (PO) and completion certificate showing the development.
- 1.2 Bidder shall have their own Quality Management System (QMS) in place or shall have valid ISO 9001:2008 (or later) certification. Bidder shall submit documentary proof for the same.

2.0 How to apply?

- Interested parties may fill the application form (Annexure A) and submit the same duly signed and stamped along with the documents to prove the eligibility requirements mentioned above.
- Covering letter addressed to Purchase Officer, IPR responding to the EOI specified here.
- Copy of company registration details (SSI/MSME/DIPP registrations as applicable, Certificate of Incorporation etc. and other govt. certifications if applicable)
- Copy of PAN card
- Copy of audited financial report of last 3 years (i.e. financial years 2017-18, 2018-19 & 2019-20).

- List of projects executed in the last 3 years. (this is just for information)
- Brochures of the company and products

3.0 Evaluation procedure

The participants are induced to provide succinct and detailed information for the eligibility criteria listed above. In the course of processing the EOI bidders, the eligible vendors will be called for *online meeting* to discuss the scope of work with specific details on the technical requirements that the participant would be required to comply with. An evaluation basis (as per annexure I) will be prepared for assessment, grading and selection of a suitable participant.

Annexure A

APPLICATION FORM – EOI

S.No.	Particulars/Data required	Information
1.	EoI reference	
2.	Name of applicant Industry	
3.	Registered Address of Applicant Industry	
4.	Contact nos. (Ph, Fax, Email)	Ph: Fax: Email:
5.	Name of the MD/CMD of Co.	
6.	Mobile No. & Email id of Director/MD/CMD	Mobile: Email:
7.	Area of business	
8.	Type of Industry	Proprietorship/Pvt. Ltd./ Limited company
9.	Annual Turnover (Rs.)	
10.	List of documents attached with this application	1. 2. 3.
11.	Signature with Name & Designation	
12.	Date:	

Annexure B

Technical Specifications of Design, Manufacture, Testing and Supply of Spring Energized C Rings

- d. Materials test certificates,
- e. Mechanical behavior curve showing the evolution of linear load as a function of compression
- f. Test procedures for He leak and pressure test
- g. Inspection reports (dimensional inspection, visual inspection, He leak test, surface roughness measurement, pressure test),
- h. Release note for procurement transport and delivery

3 Scope of work

The scope of work includes but not limited to the following activities.

1. Design the metal flanges required for He leak and pressure testing of seals and submit the design to IPR for approval.
2. Preparation of Manufacturing drawings of seals and flanges and submit the same to IPR for approval.
3. Design and manufacturing of the jigs/fixtures/special purpose machines to be used in manufacturing
4. Design and manufacturing of handling tools to avoid the damage of seals while lifting and shifting.
5. Procurement of raw materials as per section 6.2 of this document. Submission of material test certificates for ITER-India's approval.
6. Manufacturing of seals and flanges as per drawings & technical specifications
7. Generation of mechanical behavior curve showing the evolution of linear load as a function of compression
8. Perform factory acceptance test.
9. Cleaning and packaging of all the items
10. Transport & Safe delivery of components at ITER-India Lab, IPR , Bhat, Gandhinagar.
11. Unloading the components at ITER-India Lab, IPR , Bhat, Gandhinagar.

4 Stages of work

Development of spring energized C rings is divided into three stages:

Table 2 Stages of Work

Stages	Development of seals	Performance tests	Conditions
Stage 1	Development of first set of seals with materials: Inner Lining: SS Outer Lining: <i>Aluminum</i> Spring: SS	Performance test as per section 8	If performance satisfies the requirements then move to second stage
Stage 2	Development of second set of seals with materials: 1. Inner Lining: SS Outer Lining: <i>Silver</i> Spring: Alloy 718 2. Inner Lining: Copper Outer Lining: <i>Silver</i>		Seal which qualifies the performance test as per section 8.1 shall move to third stage

	Spring: 718(grinded) Alloy		
Stage 3	Seals of required quantity (as per table 1) shall be produced of qualified material as per stage 2		Seals will be eventually accepted as they qualify the performance tests

5 Mechanical characteristic curve

Seals with different material combinations shall be checked for mechanical behaviour of C rings which shall be in the form of curve showing the evolution of linear load as a function of compression.

6 Technical requirements

Detailed description of the seals and flanges is given below:

- a) Material of all the seals and flanges are specified in table 1. Material requirements are given in section 6.2.
- b) The surface finish requirement of the groves in the flanges for accommodating seals shall be proposed by supplier to IPR to meet the requirements of He leak tightness.

6.1 Dimensional requirements

6.1.1 Oval shape-spring energized C rings

Overall dimension and shape of the oval shape-spring energized C rings is defined in figure 1 & 2. Proposed cross section of the C-ring is ~10mm. However supplier shall assess and propose the exact size of cross section of the C-rings for the requirements stipulated in the document.

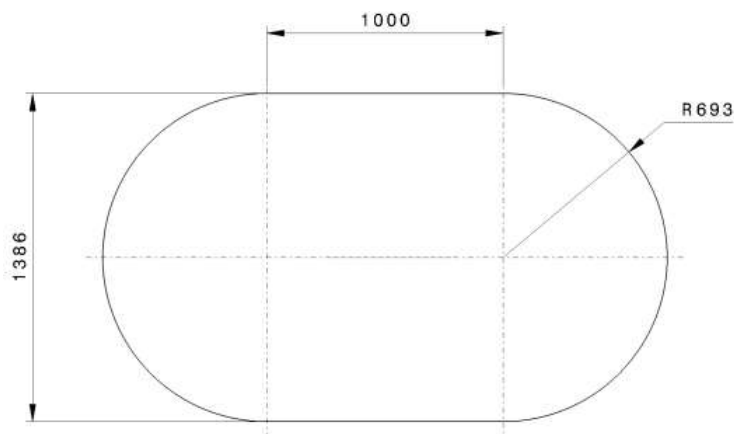


Figure 1 Oval shape-spring energized C-ring_1

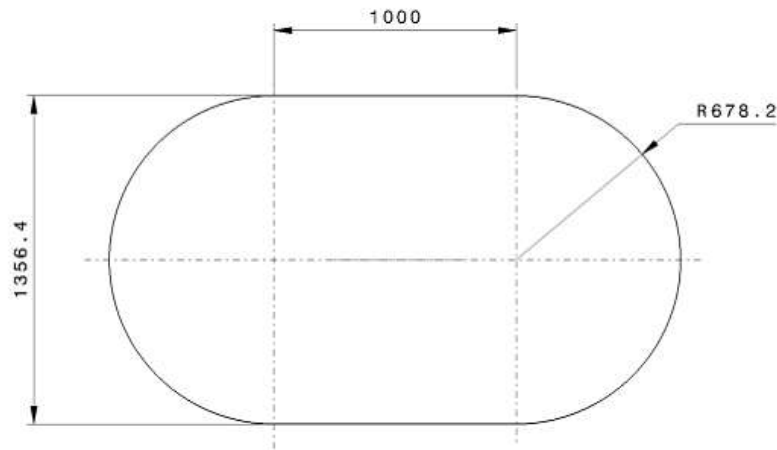


Figure 2 Oval shape spring energized C-ring_2

6.2 Material Requirements

6.2.1 General

It is supplier's responsibility to check that the certificates of chemical analysis and mechanical test results of the stock material meet with the required standards, and to carry out any further tests, if not available in the test certificate. All material shall be free from all kinds of defects like cracks, fissures, pits, lamination or any other defects.

6.2.2 SS 304 for flanges

The metallic items, of SS 304 construction, specified in this document shall be made either from plate/sheet or forging.

For metallic parts made from Plates/Sheets shall meet the requirement of ASTM A240 and the parts made from forgings shall meet the requirement of ASTM A 182.

Supplier shall submit the test certificate for the material SS304 confirming the required chemical composition, material properties and ultrasonic examination reports as per ASTM A240/ASTM A182, whichever is applicable.

6.2.3 Material for seals

Appropriate grade of Aluminium, Copper, SS, Silver and alloy 718 shall be proposed by the supplier to IPR for approval.

7 Estimated Duration

The delivery of all the items, as listed in table 1, and the documents, as specified in section 2.2, shall be completed within 14 months from the date of acceptance of manufacturing drawings. Design and Manufacturing drawings shall be submitted within 45 working days from the date of PO. Any revision, as needed, in manufacturing drawings shall not take more than 15 working days, by bidder.

8 Acceptance Requirements

8.1 Factory Acceptance Test

8.1.1 Visual Inspection

All finished metallic parts shall be checked visually in the proper presence of light.

Finished parts shall be free from any surface defects.

8.1.2 Dimensional Test

Dimensional check shall be carried out on all the dimensions of each metal part. The Dimensions shall conform to those of the drawings. Exact list of dimensions and checking procedure shall be proposed by the supplier and after mutual agreement between IPR and supplier on it, dimensional check shall be carried out by the supplier.

8.1.3 He Leak Test

The seals shall be tested for leak rate of 10^{-9} mbar.l/s and test for global leak rate 10^{-8} mbar.l/s.

Following requirements of testing shall be followed by supplier:

- a) The test procedure shall be proposed by supplier. After mutual agreement between IPR and supplier, supplier shall perform the test.
- b) For each test, a document must be prepared showing the mechanical set-up, the number of the assembly, base pressure, calibration and measured leak rate which must be equal to or less than 10^{-9} mbar.l/s at 20°C and 10^{-8} mbar.l/s for global leak rate test
- c) In case of failure of test, supplier shall submit a recovery procedure and after mutual agreement between IPR and supplier, supplier shall proceed with next course of action accordingly.

8.1.4 Pressure Test

a. Applicable Specification

ASME Boiler and Pressure Vessel Code Sec VIII Div.2 / equivalent

b. Bidder's Responsibility

- Bidder is responsible for confirming and controlling the pressure test job in order to ensure that the same is being carried out according to the prescribed procedure.
- Bidder is responsible to communicate its readiness related to pressure testing and the invitation to witness the same.

c. Documentation

Bidder shall submit a detailed pressure testing procedure (which fulfills the requirements of this specification) and applicable code requirements to purchaser for approval prior to pressure testing.

Bidder shall prepare Pressure test report after completion of testing.

d. Verification Prior to Pressure Testing

All Components upon completion of Fabrication and Assembly shall be checked / verified by Bidder and purchaser to ensure following:

- All Fabrication has been completed, except for operations that could not be performed prior to the test.
- All Applicable Examinations, inspections and tests including NDT Tests and required heat treatments (If applicable) are satisfactorily completed and accepted
- All Inspection against Review, Witness and Hold point in Manufacturing Inspection Plan have been carried out and accepted.

e. Safety Precautions

Pressure Test shall be carried out in isolated place from work area / pit with appropriate safety precautions and equipment.

Before applying Test pressure, the test equipment shall be inspected to see that it is tight and that all low pressure filling lines and other appurtenances that should not be subjected to the test pressure have been disconnected or isolated by valves or other suitable means.

All the local safety norms shall be followed by Bidder and purchaser while performing / witnessing the pressure testing.

f. Pressure Testing General Requirements

- Component to be tested:

Metal seals

- Type of pressure test

(At least) 1 min. at P_{TEST}

- Test Procedure

With reference to standard: ASME Boiler and Pressure Vessel Code Sec VIII Div.2 / Equivalent. Reference standard shall be in agreement between purchaser and Bidder

- Pressure test media

Pressure test shall be with Nitrogen only.

- Test Temperature

The test temperature shall be room temperature.

- Test Pressure

$P_{TEST} = 2$ bar

- Test Gauge

- ✓ Location

Pressure gauge used in testing shall be connected directly to the test component. If the indicating gauge is not readily visible to the operator controlling the pressure applied from a safe location, an additional indicating gauge shall be provided where it will be visible to the operator and inspector throughout the duration of the test. It is recommended that a recording gauge be used in addition to the indicating gauge.

- ✓ Range

Dial indicating pressure gauges used in testing shall be graduated over a range of about two times the maximum intended test pressure, but in no case shall the range be less than 1.5 times nor more than four times the intended test pressure.

Digital reading pressure gauges having a wider range may be used provided the readings give the same or a greater degree of accuracy than obtained with dial pressure gauges.

- ✓ Calibration

All gauges shall be calibrated against a standard deadweight tester or a calibrated master gauge at least every 6 months or at any time there is a reason to believe that they are in error.

g. Pressurization and Preliminary check

Pressure shall be gradually increased until a gage pressure which is the lesser of one half of the test pressure is attained, at which time a preliminary check shall be made to ensure integrity of installation, sealing & opening etc. After satisfactory check pressure shall be gradually increased in steps until the test pressure is reached & subsequently held for prescribed duration.

h. Inspection and Testing

Visual Examination shall be made for leakage and permanent deformation of all joints and connections.

Any leakages that are present, except for that leakage that may occur at temporary test closures, shall be satisfactory repaired and retested.

The inspector shall reserve the right to reject the Pressure test program if there are any visible signs of permanent distortion and deformation.

Remote monitoring provision shall be arranged by Bidder for the inspection.

i. Pressure Test record

Bidder shall record following data in pressure test report and submit to purchaser.

- Identification of Parts being tested.
- Calibration status of measuring instruments
- Test condition
- Test pressure
- Test duration
- Test Fluid and temperature
- Test Result
- Date of Pressure Test
- Detail of witnessing authority.
- Reference of the Procedure followed.

Note: He leak test, as per section 8.1.3 shall be carried out before and after, each time, the pressure test is performed.

IPR shall witness all above specified tests.

Only after positive results of the Factory Acceptance Tests satisfying the conformance with the requirements as set out in this document, the transport and delivery of manufactured items shall be done by supplier.

Acceptance of the tests results and certificates does not relieve the Supplier of the responsibility for compliance with all the contractual requirements.

If any of the Factory Acceptance Tests prescribed in the present specification reveals a defect or a fault of the components, the Supplier shall perform a timely and effective repair or shall guarantee the replacement of the faulty deliverable free of charge, managing the repair or replacement by means of a proper non conformity management procedure.

Note:

All required testing equipment, fixtures, clamps and other necessary items required for testing and inspection for factory acceptance test as specified above shall be arranged by supplier.

8.2 Site Acceptance Test

After delivery of components at ITER-INDIA's Site, the supplier shall unpack the items. IPR will inspect every component and check the physical state and condition of the packing for possible damage during transportation.

Final Site Acceptance Tests (SAT) include the following activities

- Checks of the physical state and condition of the packing for possible damage during transportation.
- Checks of the component cleaning and conservation.
- Successful completion of the visual inspection.
- He leak Test as per section 8.1.3

If any of the SAT prescribed in the present specification reveals a defect due to a fault or damage during transport or unloading, the Supplier shall perform an urgent and effective repair or shall guarantee the replacement of the faulty component free of charge, managing the repair or replacement by means of a proper non conformity management procedure.

After positive results of all the Site Acceptance Tests, delivery of the complete contractual documentation and ITER-INDIA's review of the delivered documentation, the metallic components will be eventually accepted.

9 Packaging and Transportation

During storage and transport all the components, suitably cleaned before transportation, shall be packed in new, clean, sealed polythene bags.

Special purpose handling tools, to avoid the damage of seals while lifting and shifting, shall be used. The same shall be supplied to ITER-India.

C rings shall be located in purpose built plywood containers to avoid damage during handling and transport and to provide medium term storage (up to 2-3 months) on Site. Desiccant elements shall be included in the packages, on the packaging all references to the contents and other information shall be clearly shown in English language, including at least:

- Contents description;
- Dimensions;
- Weight;
- Centre of gravity;
- Lifting Points.

Transport to Site

1. The metallic components shall be delivered at the following address:

*DNB Lab, ITER-India building, Institute for Plasma Research (IPR)
Bhat , Gandhinagar - 382428
Gujarat , India*

2. The mail correspondence of documents / reports shall be at following address:

*Institute for Plasma Research
Bhat, Gandhinagar 382428, Gujarat, India*

The precise building location for delivery, the name of the contact person on-site and access formalities will be communicated in advance to the Supplier.

Transshipment in transit shall be avoided and the Supplier shall arrange specially hired conveyance for direct transport to the delivery site.

Annexure I

EOI evaluation/ grading and final selection guidelines

The vendors satisfying the above criteria shall be asked to present a detailed proposal based on the information attached with this document to an IPR committee. The proposal submitted by the vendor and corresponding presentations with understanding the scope shall be evaluated by the committee as per following grade points [Point(c) has weightage of 40 % and rest of the points shall be contributed to 60 % each having weightage of 30 %].

- (a) Number of years' experience in developing metallic seals/metallic gaskets/vacuum components/vacuum sealing and their technologies/special design of vacuum sealing surfaces for nuclear / vacuum / space application.
- (b) Number of similar or unique project completed in last 3 years,
- (c) Clarity on the proposal presentation, vendor shall cover the design and development part, clarity of manufacturing stages, understanding of: requirements of various fixtures and machines; factory acceptance tests and site acceptance tests.

The bidder who scores minimum of 50% in each category and overall 70% shall be considered qualified for the issue of the tender document.

Institute for Plasma Research
(An Autonomous Institute of Dept. of Atomic Energy)
Bhat, Gandhinagar

TERMS & CONDITIONS

ITEM DESCRIPTION	NOTICE FOR EXPRESSION OF INTEREST AND SELECTION OF VENDOR FOR DESIGNING, MANUFACTURING, TESTING AND SUPPLY OF SPRING ENERGIZED C RINGS	
Sl. No.	PARTICULARS	REMARKS
I	Name of the Supplier	
II	IPR EOI No. & Date	EOI No.EOI/IPR/20-21/1 DATED 4-1-2021
III	Vendor Offer No & Date	
IV	Postal address	
V	Contact with STD code	
VI	Fax with STD code	
VII	Name of Contact person	
VIII	Mobile No.	
IX	e-mail ID	
	SCANNED COPY OF THE BELOW MENTIONED DOCUMENTS NEED TO UPLOAD AT www.tenderwizard.com/DAE AT THE TIME OF PARTICIPATION OF EOI WITHIN THE PERIOD OF SUBMISSION.	"YES" OR "NO"
1	Certificates:	
	i) Form-A duly filled-in, signed and stamped along with the documents mentioned in Form-A	
	ii) PAN (Permanent Account Number) Registration	
	iii) Certificates of Registration for Sales Tax/ VAT/ WCT or Service Tax	
2	iv) Copy of company registration details (SSI/MSME/DIPP registrations as applicable, Certificate of Incorporation etc. and other govt. certifications if applicable)	
4	v) Copy of audited financial report of last 3 years (i.e. financial years 2017-18, 2018-19 & 2019-20)	
6	vi) List of projects executed in the last 3 years. (this is just for information)	
7	vii) Brochures of the company and products	
18	Whether All Documents Related to EOI Viewed?	

Institute for Plasma Research
(An Autonomous Institute of Dept. of Atomic Energy)
Bhat, Gandhinagar

Eligibility Criteria

ITEM DESCRIPTION	NOTICE FOR EXPRESSION OF INTEREST AND SELECTION OF VENDOR FOR DESIGNING, MANUFACTURING, TESTING AND SUPPLY OF SPRING ENERGIZED C RINGS		
Sl. No.	PARTICULARS	REMARKS	
I	Name of the Vendor		
II	IPR Enquiry NO & Date	EOI No.EOI/IPR/20-21/1 DATED 4-1-2021	
III	Vendor Offer No & Date		
Sr. No.	Criteria	Documents required to upload	Status of Documents (Uploaded/ Not-Uploaded in e-Tender Portal)
1	Bidder should have past experience in the last 3 years in developing metallic seals/metallic gaskets/vacuum components/vacuum sealing and their technologies/special design of vacuum sealing surfaces for nuclear / vacuum / space application	Bidder should submit copies of at least one Purchase Order (PO) and completion certificate showing the development	
2	1.2 Bidder should have their own Quality Management System (QMS) in place or shall have valid ISO 9001:2008 (or later) certification	Bidder shall submit documentary proof for the same.	

Note:	
a	The response to tender without submission of proof of above points will summarily be rejected without further communication
b	The bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government agencies
c	Original documents shall be produced for verifications, if required