

**Tender Fee: Rs.2,000/- (GST Inclusive)**

**(Non-Refundable)**

**विश्वेश्वरय्या राष्ट्रीय प्रौद्योगिकी संस्थान, नागपुर-440010 (भारत)**

**VISVESVARAYA NATIONAL INSTITUTE OF TECHNOLOGY, NAGPUR-440 010 (INDIA)**



TENDER DOCUMENT FOR

**SPARK PLASMA SINTERING SETUP**

**TENDER NO.: VNIT/STR/FIST/ 2018-19/03**

**dt.19/09/2018**

**DATE OF ISSUE OF TENDER**

**: 19<sup>th</sup> September 2018**

**LAST DATE OF SUBMISSION OF TENDER**

**: 18<sup>th</sup> October UP TO 3.00 P.M.**

**DATE OF OPENING OF TENDER**

**: 18<sup>th</sup> October at 3.30 P.M.**

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:



**VISVESVARAYA NATIONAL INSTITUTE OF TECHNOLOGY, NAGPUR- 440 010 (INDIA)**

**TENDER NOTICE Advt. No: VNIT/STR/FIST/2018-19/03**

**dt.19/09/2018**

Tenders in Sealed Envelope are invited for

**SPARK PLASMA SINTERING SETUP**

for Metallurgical & Materials Engg . Department

For complete details visit our website: [www.vnit.ac.in](http://www.vnit.ac.in). The bidders can download the tender form/ documents from **19/09/2018 to 18/10/2018** from Institute's website and send self addressed Envelope, invariably along-with bank draft of Rs.2,000/-+ GST Inclusive ( Rs. Two Thousand with GST inclusive Only, **Non Refundable**) drawn in favour of The Director, VNIT, Nagpur, towards the cost of **TENDER ITEM FORM** to stores section along with the cost of each tender form.

V.N.I.T will not be responsible for postal delay/ non-receipt of tender form/ D.D, sent through the post. Tender forms duly filled in all respect in only original prescribed format, supplied by the VNIT, duly super-scribed , should reach office of the Stores Officer, VNIT, Nagpur -440010, on or before **18/10/2018 upto 3.00 p.m** . The tenders are likely to be opened at **3.30 p.m** on the same day. The Director, VNIT reserves the right to accept or reject any or all tender offer.

**For Enquiry contact Stores office, VNIT, Tele No : 0712-2801243, 2801369**



**विश्वेश्वरय्या राष्ट्रीय प्रौद्योगिकी संस्थान, नागपुर 440 010 (भारत)**

**निविदा सुचना क : VNIT/STR/FIST/2018-19/03**

**dt.19/09/2018**

**निम्नलिखित मदो की खरीदी हेतु मुहरबंद आमंत्रित है ।**

**SPARK PLASMA SINTERING SETUP**

for Metallurgical & Materials Engg. Department

संपुर्ण जानकारि के लिए इच्छुक विक्रेता संस्थान कि वेबसाइट [www.vnit.ac.in](http://www.vnit.ac.in) पर जा सकते है । इच्छुक विक्रेता निविदा प्रपत्र दि. **19.09.2018 से 18.10.2018** तक संस्थान कि वेबसाइट से डाउनलोड करके स्वयं के पते युक्त लिफाफा भेजकर विज्ञापन क्र. उल्लेख कर के निविदा मद प्रपत्र के मुख्य हेतु रु. २०००/- (Non Refundable) बैंक ड्राफ्ट निदेशक, वी.एन.आय.टी., नागपुर, के साथ निविदा प्रपत्र भंडार अनुभाग में भेज सकते है ।

डाक द्वारा विलंब होने पर / निविदा दस्तावेज न मिलने पर/ D.D न मिलने पर, वी.एन. आय. टी. (वि. रा .प्रो.सं) जवाबदेह नही होगा । संस्थान द्वारा प्रदत्त केवल वास्तविक निर्धारित प्रपत्र को पूर्ण रूप से भर कर दि. **18.10.2018 के अपरान्ह ३.०० बजे** तक या इससे पूर्व भंडार अनुभाग (वि. रा .प्रो.सं) नागपूर मे जमा करो। निविदा उसी दिन अपरान्ह ३.३० बजे खोली जाएगी । किसी भी या सभी निविदाओ को अस्वीकृत करने का अधिकार निदेशक का होगा।

**For Enquiry contact Stores office, VNIT, Tele No : 0712-2801243, 2801369**

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**INVITATION of QUOTATION/TENDER for**  
**SPARK PLASMA SINTERING SETUP**

Dear Vendor,

**Sub:** Tender Enquiry for Procurement of **“SPARK PLASMA SINTERING SETUP”** for Metallurgical & Materials Engineering Department.

VNIT herewith invites tender / bid in sealed envelope for procurement of equipment **“SPARK PLASMA SINTERING SETUP** under research project at the Metallurgical & Materials Engineering Department. Interested bidders are requested to submit the most competitive bid / quotation, details below:-

Description of the Goods / Equipment	Specifications	Unit / Quantity	Delivery Period & Place of Delivery	Price	Earnest Money Deposit (EMD) Amount in Rs	Installation
Please refer enclosed “QFA/Bill of Material” for complete details	As per QFA/Bill of Material	As per QFA/Bill of Material	<b>12 Weeks</b> from the Date of award of PO / Contract MM Engg. Department, VNIT, Nagpur	F.O.R. VNIT, Nagpur	<b>Rs.80,000=00 (Eighty thousand only) in form of DD / Pay Order drawn on any of Nationalized Bank drawn in favor of the Director, VNIT, Nagpur [To be enclosed with the quotation in separate envelope]</b>	Good(s)/Equipment(s) to be / installed / commissioned at place of Delivery by the bidder at Free of Cost

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

## **Schedule & Instructions for Tender/Bid Submission**

Tender Ref. No: **VNIT/STR/FIST/ 2018-19/03**

**dt.19/09/2018**

Item: Procurement of "**SPARK PLASMA SINTERING SETUP**"  
for Metallurgical & Materials Department.

<b>Date of Issue</b>	:	19/09/2018
<b>Last Date of Submission</b>	:	18/10/2018 up to 3.00 pm
<b>Tender Fee</b>	:	Rs 2,000/- (GST Inclusive) through DD drawn in favor of Director, VNIT, Nagpur
<b>Amount of EMD</b>	:	Rs.80,000/- payable through DD drawn in favor of Director, VNIT, Nagpur
<b>Tender Opening Date &amp; Time</b>	:	18.10.2018 up to 3.30 pm

### **Submission of Bid**

"**TWO BID**" viz. **Technical /Qualifying Bid** and **Price/Commercial Bid** System will be followed for this tender.

The Technical bid and the Financial bid should be sealed **in separate covers both duly super-scribed** and both these sealed covers are to be put **in a bigger cover** which should also be sealed and **duly super-scribed** with for "**SPARK PLASMA SINTERING SETUP**"

**For Technical /Qualifying Bid** - Envelope to be super-scribed with "**TECHNICAL /QUALIFYING BID for "SPARK PLASMA SINTERING SETUP"**" and should be submitted with prescribed Tender Fee & EMD and the associated supporting documents. Bill of material (without any price), indicating the compliance of technical specification should also be included with the qualifying bid. The Tender Fee & EMD DD to be put in separate envelope.

**For Price/Commercial Bid** - Envelope to be super-scribed with "**PRICE/COMMERCIAL BID for "SPARK PLASMA SINTERING SETUP"**" The Price should be indicated in the prescribed format in the Price/Commercial Bid only. Any other format will lead to disqualification.

Both above sealed covers are to be put **in a bigger envelope** which should also be sealed and **duly super-scribed** with - Tender Enquiry for "**SPARK PLASMA SINTERING SETUP**" for MME Department.

The sealed envelope super-scribed with - Tender Enquiry **SPARK PLASMA SINTERING SETUP for Metallurgical & Materials Engg. Department**, and to be sent to Dy. Registrar (Stores), VNIT, South Ambazari Road, Nagpur 440 010. Sealed envelope can also be submitted in person in the "**Tender / Quotation Box**" kept in The Stores Section. VNIT, Nagpur. The last date of submission is **18<sup>th</sup> October 2018 by 3.00 P.M.**

Tender received after the last date / time of submission (as mentioned in tender notice) will not be considered and will lead to rejection.

Each envelope / cover should also indicate clearly the name and address of the bidder.

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

## **General Instructions, Terms & Conditions for the Bidder/Vendor**

### **1. Price Bid**

- a) The Prices should be quoted F.O.R. VNIT, Nagpur
- b) The price/rates quoted by the bidder shall be FIRM & FIXED and shall not be variable on any account.
- c) The price bid shall be valid for a period of 180 days from the date of opening
- d) The duties, taxes and other levies payable by the vendor shall be shown separately in bidding document. The basic price per unit should be separately mentioned in price bid in the given format.
- e) Duties & taxes viz. Custom, GST, Freight / Transportation, Packing & Forwarding, Insurance, Price Ex-Works etc. shall be indicated separately in the given format only.
- f) **The bidder is requested for special educational discount to the Institute.**
- g) The contract shall be for the full quantity as described in QFA/Bill of Material. Correction if any, shall be made out by crossing out, initialling, dating and re-writing.
- h) In case of price quoted in foreign currency, its conversion rate to INR on the date of opening the quotation/tender shall be considered

### **2. Technical Bid**

- a) The good/s offered must meet / comply with the Technical Specifications detailed in "**Technical/Qualifying Bid**" given in tender. In case of deviation if any, the firm's bid is liable to be treated as non – responsive.
- b) VNIT has the sole discretion to accept or reject tenders / bids based on deviations, if any, from the technical specification.
- c) The price bids of the bidders who **do not conform** to the Technical Specifications & Eligibility Criteria given in Technical/Qualifying Bid will not be opened. The EMD of such bidder/s will be returned in due course.

### **3. Bid Evaluation**

The Purchaser will evaluate and compare the bids determined to be substantially responsive i.e. which

- a) Are properly signed, and
- b) Confirm to the general terms and conditions, special conditions, and technical specifications.

4. Each Bidder shall submit only one bid.

5. Bidder shall submit Firm's registration certificate, GST registration certificate, PAN, Delivery Period, Warranty/Guarantee, others etc with the bid

6. Bidder shall furnish the information in the prescribed format of Technical and Price Bid only (as applicable). Any other format will lead to disqualification. Each and every document submitted with Technical and Price Bid should be duly signed & stamped. **Incomplete or Conditional Bid(s) will not be accepted.**

7. **Tender Fee:** The Tender fee of **Rs.2000/-** (GST Inclusive) in the form DD drawn in f/o Director VNIT, Nagpur should be sent along with technical bid. Firm/Vendor registered with the NSIC or MSME or SSI are having exemption from submission of tender fees. Firm/Vendor registration certificate in above respect will be essential to claim exemption.

8. **Earnest Money Deposit (EMD):** Bidder shall submit EMD in form of Demand Draft / Fixed Deposit Receipt / Bank Guarantee in favor of "**Director, VNIT Nagpur**" payable at Nagpur. The EMD to be submitted strictly in a separate envelope super scribed with Vendor / Firm's name & address & also on back side of DD with stamp. **Bid received without EMD will be summarily rejected.** Firms / Vendors registered with the NSIC or MSME or SSI are having exemption from submission of EMD. Firms / Vendors registration certificate in above respect will be essential to claim exemption.

Signature of Bidder  
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Stamp:

Date:

9. **Specification and Make:** Bid should be given for the exact specification and make as shown in the tender enquiry against Sr. No. of the item / good. The bid which is not as per our tender enquiry will be treated as non responsive.
10. **Client List:** Bidder shall furnish information of Client list along with the order copy of similar good/s / equipment supplied to any IIT/NITs/ any Govt. Organization including details of price & all other charges / duties with the bid.
11. **ISI Certification:** Where ISI certification marked goods / items are available in market, procurement should generally be limited to goods with those or equivalent marking only.
12. **Authorization Certificate:** Bidder should enclose latest authorization certificate from their principal / original equipment manufacturer (OEM).
13. **Taxes:** GST or any other taxes as per Govt. norms shall be applicable from time to time. The % of Tax must be indicated separately in the bid.
14. **Good/s for Research Purpose: Concessional GST @ 5% will be applicable for purchase of goods viz Scientific & Technical instruments and other required for the Research purposes only.** This is in accordance of Govt. of India, Ministry of Finance Notification 45/2017-Central Tax (Rate) dated 14<sup>th</sup> November, 2017 and 47/2017-(Integrated Tax (Rate) dated 14<sup>th</sup> November, 2017, and VNIT Circular Ref.- VNIT/Acct/2017-18-GST/5390 dated 27<sup>th</sup> November, 2017. The description of goods is given in Govt. of India notification dated 14<sup>th</sup> November, 2017 mentioned above. A certificate in this respect will be issued to the vendor by the Institute.
15. **Taxes (For Import Item)** – Govt. of India Ministry of Science & Technology, DSIR, NewDelhi vide letter No TU/V/RG-CDE(190)/2016 dated 19/09/2016 has issued Certificate of Registration to VNIT, Nagpur for purposes of availing customs duty exemption in terms of Govt. Notification 51/96-Customs dated 23<sup>rd</sup> July, 1996 and this registration is valid up to 31.08.2021.VNIT is eligible to avail partially exemption for Customs Duty. Necessary documentation / exemption certificate for the same will be provided by the Institute wherever applicable. The supplier who has quoted the price in Rupees, but importing the items from the foreign country has to sign the High Sea Sale Agreement. Against High Sea Sales Agreement GST is not applicable; Custom Duty is applicable under Notification No. 51/96. The charges towards HSS agreement, if any, will have to be borne by the firm.
16. **Valid Period of Quotation/offer:** The bidder should clearly mention the valid period of quotation/offer in the bid. The quotation/offer shall be normally valid for a period of 180 days from the date of opening the tender.
17. **Rate Contract:** If the Good/s under enquiry is mentioned under the Govt. of India, DGS & D rate contract, Vendor shall supply the good/s at DGS & D contract rate as VNIT Nagpur is Government of India's Institute of National Importance under the Ministry of HRD.
18. **Installation:** Goods / Equipments shall be delivered / installed at concerned laboratory / department of VNIT by the Bidder at free of cost.
19. **Service centre:** Vendor shall provide the details of Service Centre in Nagpur or other region with name of contact person, their contact nos. & address.
20. **Payment :** Institute will release the full & final (100%) payment after delivery of items and its successful installation/ demonstration at concerned department / laboratories of VNIT Nagpur. The vendor will be required to submit the bills in triplicate along with delivery memo. Payment will be made through Crossed Cheque / ECS / NEFT / RTGS. For electronic payment mode, Firm / Company bank details on letter head will be required.
21. The quantity may increase / decrease as per requirement and payment will be made as per actual supply on the rates quoted by your firm.
22. Ref. No. of this tender / quotation enquiry must be mentioned on envelope / cover containing quotation.

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23. Vendor shall enclose copies of all essential certificates / documents, failing which the bid is liable to be disqualified. Each document enclosed with bid should be duly self-attested with stamp/seal by the vendor, failing which submitted quotation will be treated as non-responsive.
24. Any certificate / document above submitted by the vendor is found to be incorrect / false/ forged/ fake, intentionally / un-intentionally at any stage, will lead to disqualification of vendor. Institute shall be free to take any action by blacklisting the vendors firm.
25. Incomplete or conditional quotation/bid shall be summarily rejected
26. **Educational Discount:** VNIT, Nagpur is a Govt. of India's Institute of National Importance engaged in education & research of National & International repute, the Vendors shall give / offer the special educational discount on quoted rates.
27. The vendor shall take full responsibility in case of any damage, loss or injury to any person / building or to any part thereof, and shall repair / and make good the loss, at his own cost.
28. **Annual Turnover:** Balance sheet, profit & loss account for the proceeding 3 financial years must be enclosed as an evidence of the financial requirement.
29. **Guarantee or Warrantee & Delivery of Goods**
- a) **Guarantee/ Warranty:** Normal comprehensive **Warranty/ Guarantee of 3 years** shall be applicable to the supplied goods. In case any part or whole of the equipment is found to be defective during the guarantee period, then the same will have to be replaced/repaired free of cost at our premises. The Vendor should guarantee that the good/s and its accessories supplied are complete in every respect and confirm to the technical specification mentioned in the Bill of Material
- b) **Performance Guarantee:** A performance guarantee of 10% of the total invoice value for good/s costing 10 Lacs & above, and valid for three year & three months covering the entire warranty period will be required from the vendor executing the purchase order. In case of violation of any of the conditions of guarantee / warranty (for Three years), the aforesaid performance guarantee shall be invoked by VNIT.
- c) **Delivery of Goods –**
- i) Vendor shall deliver/supply the goods within **12 weeks** period.
- ii) Goods shall be supplied / delivered by the bidder at the installation site in concerned laboratory/ department of VNIT, Nagpur at free of cost on working days. Vendor shall strictly be adhered to above, failing which **Liquidated Damages Clause** will be applicable.
- iii) Goods should be securely, safely and adequately packed and dispatched at the risk of supplier. Purchase order Ref. No. & Date must be mentioned/should be kept in all packing's.
- iv) Bidder shall deliver the goods in concerned laboratory/department perfectly before 4.00 pm on any working day/s. Delivery of goods will not be accepted on Saturdays, Sundays and Institute Holiday.
30. **Liquidated Damages Clause:**  
Penalty may be imposed as per P.O. terms and conditions. Goods should be securely, safely and adequately packed and dispatched at the risk of supplier and packing costs quoting this order reference should be kept in all package. Firms are requested to deliver the goods in our stores/section/department before 4.00 pm on any working day/s.
- i) The Director, V.N.I.T. Nagpur reserves the right to recover from the vendor, liquidated damages a sum equivalent to 1/2 percent of the price of the undelivered stores at the stipulated rate for each week or part thereof, during which the delivery of such stores, may be delayed subject to, a maximum limit in the case of an order exceeding

Signature of Bidder  
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Rs. One Lakh in value, upto **10** percent and in the case of an order not exceeding Rs. One Lakh in value upto **5** percent of the stipulated price, of the stores so undelivered.

- ii) To purchase elsewhere, on vendor's accounts, at his risk, the stores etc. undelivered, or other of a similar description, where others exactly employing with the particulars, are in the opinion of the Director, Visvesvaraya National Institute of Technology, Nagpur are not readily procurable, without canceling the contract, in respect of consignment not yet due for delivery.
- iii) If the Supplier fails to deliver the material/goods within the stipulated delivery period, then Amount of EMD given by the Vendor shall be forfeited. In case of Supplier [registered with MSME/NSIC/SSI etc.] not required to submit the EMD, the Institute reserves the right to initiate action including reporting to principal Govt. authorities.
- iv) To cancel the contract.  
In the event of action being taken under (b) or (c) above, the vendor shall be liable to make good for any loss, which the Institute may sustain, by reason of higher price of stores, so purchased or the otherwise, howsoever :

The decision of the Director, Visvesvaraya National Institute of Technology, Nagpur shall be final as regards to the acceptability of stores supplied by the seller and the Director, Visvesvaraya National Institute of Technology, Nagpur, shall not be required to give any reason in writing or otherwise at any time for the rejection of stores.

**31. Award of Purchase Order / Work Contract**

- a) Notwithstanding the above, the Purchaser reserves the right to accept or reject any bid and to cancel the bidding process and reject all bids at any time prior to the award of contract.
- b) The Purchaser will issue the **Purchase Order / Work Contract** to the vendor / bidder whose bid has been determined to be substantially responsive and who has offered the lowest evaluated bid price. The terms of the accepted offer shall be mentioned in the purchase order.
- c) On receiving of order by vendor, the vendor shall deliver / supply / install the good/s at free of cost up to installation site of concerned department of VNIT, Nagpur, failing which cost of delivery / installation will be deducted from the Vendors bill payment.
- d) After receiving of the Purchase Order / award of contract, it will be Vendor's obligation / responsibility to supply or delivery of the good/s as per specifications within specified time schedule.
- e) Expression of vendor's inability for the supply or delivery of good/s as per specifications will lead to cancellation of PO and EMD (as submitted) will be forfeited. Further Institute may also disqualify / debar the Vendor from participating in any of its future enquiries for a period as recommended by institute authorities.

**32. Post Delivery / Installation Warranty & Support:**

- a) The Vendor should have their office or authorized representative / dealer in India. They should mention in detail their support infrastructure by which minimum downtime will be ensured.
- b) The Vendor shall submit details of Service Centres / Factory and information on service support facilities that would be provided after warranty period [Form ].
- c) The Vendor will have to give undertaking that in case of any breakdown / damages during warranty period the goods / equipment will be restored back to its original status within **2 weeks** (This may include replacing some spares also).

Signature of Bidder  
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33. Any corrigendum / amendment regarding this tender enquiry will be issued on institute website only. [<http://stores.vnit.ac.in>]
34. Director, VNIT, Nagpur reserves the right to accept or reject or cancel any or all enquires or bids/PO at any stage without assigning any reason thereof.
35. **For any disputes, the place of jurisdiction shall be Nagpur, Maharashtra (India) only**
36. **It will be presumed that the vendor has read carefully all the above mentioned instructions, terms & conditions and abide by same.**
37. All Communication are to be addressed to –  
**Director**  
Visvesvaraya National Institute of Technology,  
South Ambazari Road,  
Nagpur 440 010  
Maharastara (India)
38. We look forward to receiving your bids and thank you for your interest in this project.

**Sd/-**

**Dean (P & D)  
VNIT, Nagpur**

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**TECHNICAL/  
QUALIFYING BID**

Signature of Bidder  
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Stamp:

Date:

**Technical Specifications and Eligibility Criteria****[A] Technical Specifications****QUOTATION FORMAT ANNEXURE (QFA)**

REF NO.: VNIT/STR/FIST/ 2018-19/03

dt.19/09/2018

**“SPARK PLASMA SINTERING SETUP”**

Sr. No.	ITEMS DESCRIPTION
1	<p><b><u>Sintering System Specifications (This item for Research Purpose)</u></b></p> <ul style="list-style-type: none"> <li>i. The system should be capable of sintering SiC, ZrO<sub>2</sub> (3Y)-Stainless Steel, Ceramics, conductive, non- conductive and/or composite powder materials to required density of 98% or more.</li> <li>ii. Sintering press system should be vertical single axis servo motor controlled.</li> <li>iii. Sintering pressure should run into the range of 0.5~20 kN.</li> <li>iv. Sintering stroke should be 50 mm or more.</li> <li>v. Digital readout strain gauge, pressure transducer should be provided.</li> <li>vi. Should be compact table size.</li> <li>vii. Sintering electrode rods should have water cooled, properly sealed and leak tight for high temperature operation.</li> <li>viii. Minimum 0.01 mm digital readout should be provided for Z axis position display</li> </ul> <p>The system should have the safety devices such as Emergency stop, warning alarm for safe operation</p>
2	<p><b><u>Sintering DC Pulse Generator and Energizing System</u></b></p> <ul style="list-style-type: none"> <li>i. The system should have ON / OFF control system with Sintering DC Pulse Generator of ON time 1 ~999 msec, OFF time 1~99 msec.</li> <li>ii. Input power supply should be Indian standard power supply.</li> <li>iii. Output supply should be DC Pulse output of 10V, 1,000A.</li> <li>iv. Output Range should be of Voltage 0~10V and Current 0~1,000A.</li> <li>v. The Control System should be Manual operation and automatic temperature control.</li> <li>vi. The Energizing System should be Water-cooled stainless steel rod connecting with long durable flexible lead wire.</li> </ul>
3	<p><b><u>Furnace and Power supply for furnace</u></b></p> <ul style="list-style-type: none"> <li>i. The furnace ramping up rate should be programmable; it should be high speed heating up to 500°C or better.</li> <li>ii. The furnace should be capable of long holding temperature and quick cooling rate for shorter operation cycle time.</li> <li>iii. Furnace should be made with Stainless steel, water cooled, double walled vacuum chamber and front loading with user-friendly operation of loading and unloading.</li> <li>iv. Safe view ports with quartz glass should be provided for sample viewing and placing temperature probes</li> <li>v. The chamber should be leak tight gas inlets and outlets provision and additional ports, feed throughs.</li> <li>vi. The temperature control should be automatic PID Digital Programmable for various temperature programming operations.</li> <li>vii. Temperature detector should be 2-way system for detecting of sintering temperature, it should be digital display and accurate readout temperature. <ul style="list-style-type: none"> <li>1).Radiation Thermometer system to measurement range from 600 to 3000°C</li> <li>2).Thermocouple system to measure upto Max. 1,000°C, K-type Sheath Thermocouple to measure temperature of die and/or punches.</li> </ul> </li> <li>viii. Minimum working temperature of Chamber should be 2,200°C (Operating temperature) and it shall be capable of maximum temperature 2,500°C.</li> <li>ix. The furnace should be comprised reliable closed water cooling system with efficient pressure and flow for continuous operation.</li> <li>x. The Furnace should be comprised Pressure and Flow switch for continuous monitoring and safe operation. It should be safety interlock and alarm indication, if the cooling water temperature increases to desired set temperature, decrease flow and pressure.</li> <li>xi. It should be variable output DC Pulse current up to 1000amp.</li> <li>xii. The DC wave form (“on” and “off” time) should be programmable with a controller or a personal computer (PC). Pulse duration should be programmable within On time 1-999 ms, Off time 1-99ms or higher range. It should be comprised ammeter and voltmeter to read average output.</li> <li>xiii. The temperature range should be selectable up to 2200°C (or higher) that adjustable manually and programmable with PC and desirable heating rate should be variable up to a 500°C/min (Higher rate)</li> <li>xiv. Input power supply should be Indian Standard, three phase or single phase power supply, should be specified clearly.</li> </ul>

Signature of Bidder  
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Stamp:

Date:

<p><b>4</b></p>	<p><b><u>Vacuum Chamber and Vacuum pumping unit</u></b></p> <p>i. Vacuum chamber should be made with Stainless steel 304, Double walled, fully helium leak tight checked and with water cooling jacket.</p> <p>ii. Inside dimensions of the vacuum chamber should be minimum diameter of <math>\phi 200\text{mm}</math></p> <p>iii. The vacuum chamber should be capable to long holding of minimum desired Vacuum of <math>5 \times 10^{-2}</math> mbar{5Pa}</p> <p>iv. The Rotary vacuum pumping system should be capable of obtaining vacuum from atmospheric pressure to <math>5 \times 10^{-2}</math> mbar or better within 5 minutes.</p> <p>v. The chamber ambience is capable to Air, Vacuum or Inert gas for various sintering operations.</p> <p>vi. The vacuum chamber should be provided <math>\phi 50\text{mm}</math> viewing ports with quartz glass protection.</p> <p>vii. The vacuum chamber should be comprised the compound (Plus-minus) Bourdon pressure gauge to measure of the inlet gas pressure and flow, Pirani vacuum gauge for vacuum control.</p> <p>viii. Overall chamber leak tight should be less than <math>5 \times 10^{-3}</math> mbar-liter/second</p> <p>ix. The vacuum system should have required roughing valve, vacuum piping, O- rings, seals, connector etc for connect chamber to Vacuum pump.</p> <p>Vacuum system should be provided safety devices, interlocks, overload protection.</p>
<p><b>5</b></p>	<p><b><u>Sintering Operation and Control Unit</u></b></p> <p>i. Clearly specify the specification of below controllers</p> <ol style="list-style-type: none"> <li>Power Supply Controller</li> <li>Sintering Pressure Controller</li> <li>Vacuum System Controller</li> <li>Current, Voltage, Pressure and Stroke Indicators</li> <li>Temperature Controller</li> </ol> <p>ii. The system should be mounted minimum desired inter-lock functions for safe operation and preventive breakdowns.</p> <ol style="list-style-type: none"> <li>Over load protection of vacuum pump</li> <li>Over current protection circuit</li> <li>Protection against of low flow rate and high temperature of cooling water.</li> <li>User safety while loading and unloading of samples.</li> </ol> <p>Protection against accidental furnace start.</p>
<p><b>6</b></p>	<p><b><u>Data Acquisition system</u></b></p> <p>i. PC should be Windows compatible operating system, English version, high end processor, 4GB RAM, 500GB HDD, DVD-ROM and 17" TFT monitor.</p> <p>ii. The Data Acquisition system should be with suitable PC and PC rack that capable of output data of SPS Current, Temperature, Pressure, Displacement, Vacuum.</p> <p>iii. SPS operation should be continuous monitoring on the screen as real time graph display of Sintering operation.</p>
<p><b>7</b></p>	<p><b><u>Utilities, Power and Floor Space Requirement</u></b></p> <p>The supplier should provide clear specifications of required utilities for the smooth installation</p> <ol style="list-style-type: none"> <li>Electric mains supply should be Indian standard power supply, if required matching transformer should be provided along with system. AC mains power shall be provided 1Ph, 220VAC, 50Hz or 3Ph, 440V, 50Hz.</li> <li>Supplier should provide desired requirement of Power points, earthing / Grounding for electrical connection with overall rating.</li> <li>Should be provide detailed drawing of Foot print, Foundation and necessary works</li> <li>The Cooling water circulation unit should supply with Indian standard power supply</li> <li>Should be prove specifications of required inert gases like Argon, Nitrogen and connections for system operation.</li> </ol> <p>Any other requirements and utilities for system operation.</p>
<p><b>8</b></p>	<p><b><u>Environmental condition for system operation</u></b></p> <p>The system should be smooth operation in normal Air conditioned, Lab temperature and humidity of below environment conditions at our Bangalore facility</p> <ol style="list-style-type: none"> <li>Operating ambient temperature should be 5 to 40degC</li> <li>Humidity condition: 20 to 80% RH subject to no dew conditions</li> </ol>
<p><b>9</b></p>	<p><b><u>Spares and Consumables</u></b></p> <p>The system should be supplied along with below specified spare parts and consumables for regular operation at our site.</p> <ol style="list-style-type: none"> <li>High density Graphite die, punch and spacer for sintering operation <ol style="list-style-type: none"> <li>Graphite die <ul style="list-style-type: none"> <li><math>\phi 30/10.0 \times 30\text{mm}</math> - 20 pc.</li> <li><math>\phi 30/12.5 \times 30\text{mm}</math> - 20 pcs.</li> </ul> </li> <li>Graphite punch <ul style="list-style-type: none"> <li><math>\phi 10 \times 20\text{mm}</math> - 20 pcs.</li> <li><math>\phi 12.5 \times 20\text{mm}</math> - 20 pcs.</li> </ul> </li> <li>Graphite spacer <ul style="list-style-type: none"> <li>Matching spacer with die and punch</li> </ul> </li> </ol> </li> <li>Fuses - 2 set.</li> </ol>

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

	<ul style="list-style-type: none"><li>iii. Thermocouples (K type) - 5 pcs.</li><li>iv. All essential O-rings – 1set</li><li>v. Carbon Felt - 5 sheet</li><li>vi. Carbon Yarn – 50m</li><li>vii. Carbon Paper – 1 set</li><li>viii. Mould releasing spray – 2set</li><li>ix. Should be offer a detailed list of mandatory /necessary/ essential spares and consumables for three years of system operation</li></ul>
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**[B} Eligibility Criteria**

- i) The Bidder should be OEM or authorized representative / supplier of the OEM. In case of authorized representative/supplier, the authorization letter from the OEM is essential.
- ii) The Bidder should be able to supply / manufacture the good/s of the most recent series models incorporating the latest developments and meeting technical specifications given in this tender.
- iii) The Bidder must have supplied & satisfactorily installed / commissioned the similar Good/s as specified in "QFA/Bill of Material" in the preceding 3 years (2014-15, 2015-16, 2016-17) period. Please attach necessary documents in support of above.
- iv) The Bidder shall furnish brief write-up, backed with adequate data, explaining firm's present capacity and experience (both technical and commercial) for the manufacture and supply of the required Good/s within the period specified for time of completion after meeting all their current commitments.
- v) The bidder shall clearly confirm the manufacturing unit / factory information and their in-house testing facilities and same will be available for the inspection.

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 1****Check List for TECHNICAL / QUALIFYING BID**

Ref No. VNIT/STR/FIST/2018-19/03

dt.19/09/2018

Read the **Instructions** below:

Please fill in details of certification / compliance enclosed in respect of this tender enquiry in the following format (Yes / No) only. **Any other format will lead to disqualification.** Any reference to product brochure without filling **appropriate** entry as “Yes/No” in the column will lead to disqualification.

If there is any deviation from the required specification then, it should be clearly specified in the “**Remarks**” column and appropriate documentary proof, may be enclosed without fail. **Please arrange all enclosures in following order only**

Sr. No.	Requirement	Details of Certification Enclosed Mention - YES/NO	Page No.	Remarks
1.	EMD of ₹ 80,000=00			
2.	Latest Manufacturer's / OEM Authorization Letter			
3.	Service Centre Details with Address & Telephone Nos.			
4.	Order Copies of preceding 3 financial Years (2015-16, 2016-17 & 2017-18) duly certified, indicating details of Order Value executed (Enclose Proof)			
5.	Product Literature / Information Brochure			
6.	Preferably Vender / OEM should have ISO 9000 or similar Certification for Quality			
7.	Certificate of Incorporations			
8.	Registration Certificate			
9.	Company Profile			
10.	Customer List / Client List with contract details			
11.	Technical Manpower Employed with Qualifications & Experience & their tenure			
12.	PAN			
13.	GST Registration Certificate			
14.	Methodology of Warranty Support			
15.	Brief History of the Company/ Firm with credentials if any			
16.	Warranty/ Guarantee (3 years)			
17.	Copy of performance reports from customers			

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 2**

**MANUFACTURERS (OEM) AUTHORIZATION LETTER**

REF No.

Date

To

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Dear Sir,

We ..... who are established and reputable manufacturers of ..... (*Name and description of goods offered*) having factories at ..... (*address of factory*) do hereby authorize M/s ..... (*Name and address of Agent*) to submit a bid, and sign the contract with you for the goods manufactured by us against the above IFB No. VNIT/STR/. We hereby extend our full guarantee and warranty of 3 years for the goods and services offered for supply by the above firm against this IFB.

Yours truly,

(Name with Stamp/Seal of Competent Authority)

**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 legally bind the manufacturer. It should be included by the Bidder in its bid.

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 3**

**SERVICE SUPPORT DETAILS**

LOCATION OF NEAREST SERVICE CENTER:-

Phone No.	Fax / Telex No.	Status of Office working Days & Hours	Number of Engineers	Value of Min. Stock Available at all times	List of Models & Types of Equipment under Service during last 2 years	Name of the Organization where the equipment are currently under AMC/ Service

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:



**FORM 4**

**PERFORMANCE STATEMENT**

**(From 2015-18 onwards)**

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

Order placed by (Complete Address of Purchaser)	Purchase Order No. & Date	Description and Quantity of ordered equipment	Value of order	Date of completion of delivery		Remarks indicating Reasons for late delivery, if any	Has the equipment been satisfactorily Functioning (Attach a certificate from the Purchaser /Consignee)
				As per Contract	Actual date of supply		
1	2	3	4	5	6	7	8

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 5**  
**CAPABILITY STATEMENT (CS)**

1. Name & Address of the Bidder:

2. Phone:

3. Classification

- (1) Manufacturer : Y/N
- (2) Authorized Agent: Y/N
- (3) Dealer : Y/N
- (4) Other (Please specify)

4. Plant:

Location:

Description, Type & size of building:

Is property on lease or free hold? If on lease, indicate date of expiry of lease in such case:

5. Type of equipment(s) manufactured and supplied during last 2 years.

Name of Equipment	Capacity/Size	Quantity Manufactured	Nos. of Purchase Orders on hand

6. Types of Equipment(s) supplied during last 2 years other than those covered under 5 above.

Name of Equipment	Capacity / Size & Model	Name of Manufacturer & Country of origin	Total Nos. of Equipment(s) Supplied in India	No. of orders on hand

7. Turnover for similar equipments sold in last two years:

8. Details of Testing facilities available :

- i) List of testing equipment available.
- ii) Give details of type tests, which can be carried out using testing equipment.
- iii) Details of the staff available for testing.

Personnel/Organization: Give Organization chart for following indicating clearly the No. of employees at various levels.

Quality assurance	
Production	
Marketing	
Service	
Spare parts	
Administrative	

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

9. Nearest Service Centres to each of the destination of installations:

Location	
Phone No.	
Year of Establishment	

10. Details of Organization (Enclose details of Organization Chart & Span of Control)at Service Centre:

No. of skilled employees	
No. of Unskilled employees	
No. of Engineering employees	
No. of Administrative employees	
List of special repair/workshop Facilities available (Specify Details of Equipments And Test(s) those which are performed)	
The storage space available for spare parts (Sq.m)	
Value of minimum stock of spares available at all the service centre in Respective currency	
Value of the models/types by number of equipment serviced by the centre in the last two years	

11. Enclose details of services provided duly authenticated by certification from the user in each case  
 12. Names of two buyers to whom similar equipment was supplied in the past and to whom reference may be made by the Purchaser regarding the bidder's technical and delivery ability.

**Buyer 1; Address & Contact No**

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**Buyer 2; Address & Contact No**

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Signature of Bidder  
 (Authorized Signatory)

Stamp:

Date:

**PRICE/  
COMMERCIAL BID**

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**PRICE / COMMERCIAL BID**

REF No.: VNIT/STR/FIST/2018-19/03

dt.19/09/2018

Item : **"SPARK PLASMA SINTERING SETUP"** for Metallurgical & Materials Engineering Department

Sr. No	Item with Specifications	Qty	Basic Rate P.U. (Rs.)	GST % & Amount P.U. (Rs.)	Total Amount P.U. (Rs.)
1	<b><u>"SPARK PLASMA SINTERING SETUP"</u></b> (Specification as per enquiry)				
	Educational Discount				
	Total Cost F.O.R. V.N.I.T. Nagpur				

[Note - The bidder should offer / quote special educational discount for the Institute.]

**[A] DUTIES & TAXES (if applicable):**

1. Custom Duty if any : \_\_\_\_\_
2. GST @ \_\_\_\_\_% : \_\_\_\_\_
3. Freight/ Transportation : \_\_\_\_\_
4. Insurance @ \_\_\_\_\_% : \_\_\_\_\_
5. Packing & Forwarding : \_\_\_\_\_
6. Others, (if any) : \_\_\_\_\_
7. **Final Offer (Including Installation Charges & Taxes) FOR VNIT Nagpur :** \_\_\_\_\_

**[B] Others Details (Enclosed)**

1. EMD No. & Amount : No.:\_\_\_\_\_ Dt.\_\_\_\_/\_\_\_\_/2018
2. Specification as per Requirements : Yes / No
3. Warranty/Guarantee : \_\_\_\_\_Years
4. Delivery period : \_\_\_\_\_
5. Firms Registration Certificate : \_\_\_\_\_
6. Authorization Certificate : \_\_\_\_\_
7. Details of client lists : \_\_\_\_\_
8. GST Registration Certificate : \_\_\_\_\_
9. PAN / GST No. : \_\_\_\_\_
10. Others, (if any) : \_\_\_\_\_

**Note: Price/Commercial Bid & other details should be furnished as per Institute's prescribed format if failed, the Price / Commercial Bid is treated as unresponsive and will be disqualified.**

The Firm/Company agrees to supply the above items for **final offer price (Rs. \_\_\_\_\_/- [In Words Rs.....])** inclusive of duties & taxes at [A] above within the period specified in the Invitation for Quotations. We also confirm that the normal commercial warrantee /guarantee of **36 months** shall apply to the offered goods.

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 6**

**FORMAT OF QUOTATION / BILL OF MATERIAL**

REF No.: VNIT/STR/FIST/ 2018-19/03

dt.19/09/2018

Sr. No.	Description of Goods	Specifications	Qty.	Unit	Quoted Unit Rate in Rs. /	Total Amount	
						In Figures	In Words
	Please refer enclosed "QFA/Bill of Material" for complete details.	As per "QFA/Bill of Material"					
						GST % GST Amt.	

**Gross Total Cost : Rs. ....**

We agree to supply the above Goods/Equipment/Software in accordance with the technical specifications for a total contract price of ..... (In figure) (In word Rs .....) within the period specified in the Invitation for Quotations. We also confirm that the normal commercial warrantee /guarantee of **36 months** shall apply to the offered goods.

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date:

**FORM 7**

**PRICE SCHEDULE**

**REF No.: VNIT/STR/FIST/2018-19/03**

**dt.19/09/2018**

1	2	3	4	5					6	7	8
Schedule No	Item Description	Country of Origin	Quantity & Unit	Price for each unit					Unit Price	Total Price	GST (%) & Amount payable
				Ex-factory, Ex-ware House, Ex-Show Room, Off the shelf	Custom Duty, as per actual	Packing & Freight	Inland transportation insurance and other local Costs Incidental to delivery	Incidental services			(To be mentioned clearly as Extra)
				(a)	(b)	(c)	(d)	(e)	a+b+c +d+e	4 x 6	

**Note:** In case of discrepancy in unit price and total price, the unit price shall prevail.

Total Bid Price in figure \_\_\_\_\_

In word \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address \_\_\_\_\_

Place:

Date:

Signature of Bidder  
(Authorized Signatory)

Stamp:

Date: