

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Council of Scientific & Industrial Research
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
National Aerospace Laboratories



CSIR - NAL Estd. 1959
ISO 9001 : 2015
Certified Organization

INVITATION FOR BIDS/NIT

Tender No: CCFP/PUR/2K19/124

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), an autonomous body under Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

Sl. No.	Description of Items	Unit	Quantity
1	Supply, installation, testing and commissioning of Silicon carbide(Sic), heating element network in existing high temperature furnace zone 1 with integration of heaters with power control scheme and Onsite fabrication for Gas proof connection to the heaters (as per attached specification)	Set	1

Single / Double Bid	Single
Bid Security (EMD) (in INR)	Bid Securing Declaration Form to be submitted.

01. Tender Documents May be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.
02. Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in>, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select NAL-Bengaluru-CSIR' in department type Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www.etenders.gov.in> as per the schedule given in the next page.
03. Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different foreign principals in one tender.
04. Unsolicited / conditional / unsigned tenders (Quotations) shall not be considered. Quotations received after the due date and time shall be summarily rejected.
05. . The amount of the **Performance Security** shall be **10% of the contract value** to be submitted within **21 days** from the date of Purchase Order valid up to 60 days after the date of completion of performance obligations including warranty obligations.

पी बी सं. 1779, एचएएल एयरपोर्ट रोड , बेंगलूर- 560 017, भारत,
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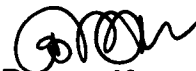


<http://www.nal.res.in>



purchaseccadd@nal.res.in

06. The Bidder shall comply the terms and conditions of the tender, failing which; the offer shall be liable for rejection.
07. The Director, CSIR- National Aerospace Laboratories, Bengaluru reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reasons there for.



Raman Kumar
Section Officer (S&P)
For & Behalf of CSIR-NAL

NAL - CCFP SiC heating network for HT furnace Zone-1

Supply, installation, testing and commissioning of silicon carbide (SiC), heating element network in existing high temperature furnace zone — 1, with integration of heaters with power control scheme and on site arrangement for Gas Proof Connection to the heaters.

Details specification:

- a) Work package includes supply of SiC Heaters and installation integration with existing system.
- b) The heater network for the Zone -1 HTF (existing furnace) consists of 6 x 2 (six columns at top and bottom of the muffle and two rows one at top and one at bottom) totally = 12 heaters.
- c) The muffle is, made up of Graphite supported by appropriate mechanical structure and thermally insulated to its service temperature of 1250 deg. C.
- d) The Proposed SiC heater bank of Zone-1 shall produce and withstand a service temperature of 1200 deg. C at the muffle.
- e) Silicon Carbide heating element of the following type and dimension is preferred, however the best suitable configuration and dimension spec. can be designed as required.

Dimension = 40x640x1580 (all mm) (DIA, HOT ZONE, TOTAL LENGTH)
TOLERANCE: DIA (+/-) 2 MM, HOT ZONE (+/-)3 MM, TOTAL LENGTH (+/-) 5MM,
RESISTANCE (+/-) 5%

Type: Alpha Ultra Non Joint Single Piece
Recrystallized Silicon Carbide Heater
Note: Heater Should Not Have Any Joints
Resistance: 0.4ohms each.

TOLERANCE: DIA (+/-) 2 MM, HOT ZONE (+/-)
3 MM, TOTAL LENGTH (+/-) 5MM, RESISTANCE (+/-) 5%

- f) The incoming electric power feeder gas proof connection to be established on site as required during construction of the heating system.



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- g) NAL will provide variable output appropriate power source of 0-415V (3Ph) or 230V (1ph.) range with continuous variable output. (power panel located 50m from furnace at MCC5 room. Up to 150A.
- h) The power cable of appropriate rating and laying of power cable up to the HTF zone-1 will be done by NAL.
- i) The heater element shall be in Nitrogen gas environment, N₂ is purged continuously to protect the graphite muffle/furnace material, the supplied SiC elements shall be safe to operate in this environment.
- j) The new arrangement shall not disturb in anyway the existing adjacent heating network.
- k) This is continuous duty heating system suitable for round the clock production process.
- l) One year warranty period for product and workmanship

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SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	CCFP/PUR/2K19/124	
3	Tender Type (Open/Limited/EOI/Auction/Single)	Open Tender	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	One	
6	Tender Category (Services/Good/Works)	Goods	
7	Allow Resubmission (Only in online mode within scheduled period)	Yes	
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes	
9	Allow Offline Submission	No	
10	Work Item Title	Supply, installation, testing and commissioning of Silicon carbide(Sic), heating element network in existing high temperature furnace zone 1 with integration of heaters with power control scheme and Onsite fabrication of Gas proof connection to the heaters	
11	Work Description	Supply, installation, testing and commissioning of Silicon carbide(Sic), heating element network in existing high temperature furnace zone 1 with integration of heaters with power control scheme and Onsite fabrication of Gas proof connection to the heaters (as per attached specification)	
12	Delivery Schedule	60 days from the date of purchase order	
13	Product Category (Civil Works / Electrical Works / Fleet Management / Computer Systems)	R & D Equipment	
14	Is Multi Currency Allowed	No	
15	f) Tender Publishing Date -	22 Nov 2019	1800 Hrs
	g) Document download start Date:	22 Nov 2019	1800 Hrs
	h) Bid Submission Start Date	22 Nov 2019	1800 Hrs
	i) Bid Submission End Date-	16 Dec 2019	1000 Hrs
	j) Bid Opening Date-	17 Dec 2019	1100 Hrs
16	Bid Validity Days	90 days	
17	Address for communication	Stores and Purchase Officer CSIR-National Aerospace Laboratories, HAL Airport Road, Kodihalli, Bengaluru - 560017	
18	Inviting Officer	Director, CSIR-NAL	
19	Contact No	080-25086097, 25086710	
20	E-mail Address	purchaseccadd@nal.res.in/spo@nal.res.in	
21	Detailed specification of item	Invitation for bids / NIT	
22	Tender Terms & Conditions & Instruction for online bid submission	The prospective bidders are requested to refer to the Standard Tender Document available on NAL internet(www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids.	