



सी.एस.आई.आर. मद्रास कॉम्प्लेक्स

CSIR MADRAS COMPLEX

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद Council of Scientific & Industrial Research)

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निविदा आमंत्रण सूचना NOTICE INVITING TENDER

समन्वय निदेशक, सीएसआईआर मद्रास कॉम्प्लेक्स, चेन्नै मूल उपकरण निर्माताओं अथवा उनके अधिकृत वितरकों (डीजीएस एंड डी के अंतर्गत सूचीबद्ध) से निम्नलिखित सामग्री की आपूर्ति के लिए दो बोली सिस्टम (भाग-1 - तकनीकी वाणिज्यिक बोली तथा भाग-2 - मूल्य बोली) के अंतर्गत मोहरबंद निविदाएं आमंत्रित करते हैं।

Co-ordinating Director, CSIR Madras Complex, Chennai invites sealed tenders under **TWO BID SYSTEM (PART-I - TECHNO COMMERCIAL BID & PART - II - PRICE BID)** from original equipment manufacturers or their authorized distributors (enlisted under DGS&D) for the following item:

क्रम सं. S. No.	मि. सं. File No.	सामग्री का विवरण Description of Item	मात्रा Quantiy	ईएमडी भारतीय रु. में EMD in INR-Rs.	निविदा की समय-सारणी Tender Schedule
1.	A3/CMC/81254/17/EC	कम्प्यूटर द्वारा नियंत्रित फ्यूल सेल टेस्ट स्टेशन की आपूर्ति, प्रतिष्ठापन और संचालन Supply, Installation and commissioning of computer controlled Fuel Cell Test Station.	1 इकाई Unit	रु./ Rs.4,50,000/- मात्र/only	निविदा प्रस्तुत करने की अंतिम तारीख Last date for Receipt of Tenders: 11.05.2017 at 05.00 pm तकनीकी बोली खोलने की तारीख Date of Technical Bid Opening: 12.05.2017 at 11.30 am

निविदा दस्तावेज नि:शुल्क डाउनलोड कर प्रस्तुत किये जा सकते हैं।

Tender document can be downloaded at free of cost and submitted.

अधिक जानकारी के लिए वेबसाइट देखिए For more details visit: www.csircmc.res.in

भंडार एवं क्रय नियंत्रक CONTROLLER OF STORES & PURCHASE
कृते समन्वय निदेशक, सीएमसी For Co-ordinating Director, CMC

Annexure -1

The 6 kW fuel cell test station with the below specifications

1. Fully automated and unattended operation is required.
2. Controller for safe test stand operation is required.
3. Safety system sensors for detecting hydrogen leak are must.
4. Following advanced safety features are essential in the fuel cell test station
 - i. Redundant hydrogen gas shut-off valves and nitrogen purging
 - ii. Safety temperature limit should be provided
 - iii. Provision for multiple thermocouples is necessary
 - iv. Separate safety control system should be provided
5. Electrochemical Impedance Analyser for the fuel cell test station with the below specifications should be included.
 - i. Maximum current: 500 A DC with minimum accuracy ± 0.05 A
 - ii. Maximum voltage: 100 V DC \pm with minimum accuracy ± 0.05 V
 - iii. Frequency range: 200 μ Hz to 100 kHz ± 0.5 kHz
 - iv. Modulation current: ± 5 A
 - v. Minimum Accuracy: 0.05 mOhm
6. Gas Flow for fuel cell test station should match below specifications
 - i. Anode gas flow with check valve, gas filter, Mass Flow Controller (MFC) and solenoid valve (0 to 200 slpm for hydrogen or artificial reformat, accuracy ± 0.1 %)
 - ii. Cathode gas flow with check valve, gas filter, Mass Flow Controller (MFC) and solenoid valve (0 to 750 slpm for air, accuracy ± 0.1 %).
7. Fuel cell test station should have humidity control for gases at both anode and cathode (20-100 % relative humidity, Dew-point control range: Ambient to 90 °C and gas temperature range: Ambient to 130°C).
8. Dry gas feeds to the anode and cathode side of the stack (by-passing the humidification chamber) is essential.

9. Heated hose connection from humidifier to gas inlets is must to avoid condensation and to achieve precise gas temperature control in the gas lines.
10. Provision for stack cooling (fluid chiller with circulator) should be provided.
10. The test station should have option of pressure control: Back pressure range 1 to 5 bar.
11. Dead End mode operation and Purging for the stack is essential.
12. Two separate PID loops for cell end plate heaters should be included. Heater output capability: 2 x 50 W / 24 VDC
13. Zero voltage option: minimum operating voltage: 0 V should be made available in the test station
14. Individual cell monitoring probes should be provided (up to 100 cells) with the test station.
15. Computer with reputed make with advanced automated software with multi-screen operations which interfaces with the test station should be provided.

Computer Specifications are as follows:

1. Monitor: 24 inch or higher
2. Hard disk: 1TBz memory or higher
3. Processor: Intel CORE i7
4. Operating System: Windows 7 64 bit or higher.
5. RAM: 8 GB DDR RAM or higher
6. DVD drive, Keyboard and mouse should be included
7. Color Laserjet Printer for data acquisition should be provided.
16. Preinstallation requirements like dimension of the room to house the machine needs to be mentioned. Prescribed Dimension in our facility is 130 cm length x 105 cm width and 210 cm height. Installation site will be slightly modified at our place depending upon the size of the instrument.
17. UPS of 10 kV_a should be supplied along with the machine.
18. 3 Phase connection (220 V) supply plugs / sockets with suitable cables are required during installation.
19. Installation and training at our site needs to be provided.
20. One year onsite plus additional 2 years of warranty should be provided with spares requirement of minimum period of 5 years.