



जवाहरलाल नेहरु उन्नत वैज्ञानिक अनुसंधान केन्द्र
(मान्यता प्राप्त विश्वविद्यालय)

JAWAHARLAL NEHRU CENTRE FOR ADVANCED SCIENTIFIC RESEARCH
(A Deemed University)

जक्कूर, बेंगलूर - 560 064, भारत / Jakkur, Bengaluru - 560 064. INDIA

विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार / Department of Science & Technology, Government of India

JNC/SR/NM/NS-1125/2015(G)2016-2017/FE

28/10/2016

Request for Quotation

Sub: Procurement of Gas Chromatograph system.

JNCASR is interested to procure one set of Gas Chromatograph system as per broad specifications shown in **Annexure – I**. You may send the Technical specifications of the system you would be proposing and the commercial aspects of the same in two separate sealed covers on or before **4.00.P.M. on 15.11.2016**. A Technical committee of the Centre will evaluate the technical configurations and shortlist the Vendors for further considerations. If required a Techno-Commercial Meeting will be arranged with the shortlisted Vendors. For short listing the Vendor both technical features and commercial advantages will be considered.

You may send the technical and commercial bids in two separately sealed covers addressed to the **Senior Stores & Purchase Officer, JNCASR, Bangalore 560 064** with a superscription of the RFQ # JNC/SR/NM/NS-1125/2015(G)2016-2017/FE and date. Please indicate taxes and duties, delivery schedules, after sales support and any other technical information in support of your offer.

JNCASR Payment terms:-

1. Irrevocable Letter of Credit. 90% against supply, balance 10% against installation/acceptance and submission of Performance Bank Guarantee of 10% of Purchase value valid for one year from date of installation.
2. Warranty minimum three years from the date of supply/installation/acceptance.
3. Delivery within six weeks from the date of Purchase Order.
4. Mode of shipment FCA basis under INCO Terms 2010.
5. Bids submitted by vendors with very poor after sales service record at JNCASR will not be considered. To establish this JNCASR may review the services with reference to the service rendered by various suppliers at this Centre and at similar institutions.
6. Technical cover should have all the technical details in the form of brochures, catalogues/published data for the tendered specifications. Further a compliance sheet for the specifications should be provided. All the commercial terms and conditions also should be part of this cover. A copy of the bill of materials without the price information also to be part of technical bid.
7. Please note that JNCASR is exempted from Central Excise Duty under Government Notification No. 10/97 and Customs Duty under Government Notification No. 51/96.

(K. Bhaskara Rao)

Senior Stores & Purchase Officer.

के. भास्करा राव / K. BHASKARA RAO
वर्तमान भंडार एवं क्रय अधिकारी / SR. STORES & PURCHASE OFFICER
जवाहरलाल नेहरु उन्नत वैज्ञानिक अनुसंधान केन्द्र
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Ph: Off: (080) 2208 2750 / 2755 □ Fax: (080) 2208 2784 □ E-mail: purchase@jncasr.ac.in □ Website: http://www.jncasr.ac.in



ANNEXURE – I

JNCASR is developing electrocatalyst, photocatalyst and heterogeneous catalysts to convert CO₂ to various chemicals. The heterogeneous catalysis products will have mainly CO, CO₂, CH₄, C₂H₆O (dimethyl ether), ethane, ethylene, methanol and other hydrocarbons can be analysed by collecting the sample in bulb by offline. The photocatalyst and electrocatalysis produce products such as CO, H₂, H₂O, acetylene, formaldehyde, formic acid and methane. Since, the formed products are generated in very less quantity collection in a bulb and injecting offline will be difficult, therefore a direct injection (online) of the formed products into the GC need to be set up. Minimum injection volume in the following case should be around 200 µl to 1 ml.

The multiple channels (2 or 3) light gas analyser must provide a guaranteed gas sample analysis of H₂, O₂, CO₂, CO (PPM LEVEL), methane, ethylene and acetylene in 5 to 15 min run using two thermal conductive detectors (TCD/TCD) and FID. All the gas control should be fully electronic, all the values should be controlled by GC and no manual supply should be controlled.

Gas analysis system should be fully tested, guaranteed system at the factory. Vendor should quote latest model available and should guarantee for the availability of necessary spares and service support for next ten years from the date of installation.

Specific Requirement of GC

Column oven

GC Column Oven Operating temperature should be from ambient temperature to 450 °C and should have set resolution of 1 ° or better than that. GC should have minimum heat of rating of 0.1° /min. Oven heating rate up to 100 ° /min. Number of temperature ramp 6-10.

Detectors

TCD detectors

All the detectors should be mounted in the GC. Two TCD detectors, one for H₂ and other for CO, CO₂, O₂. Temperature range up to 400 °C. Automatic gas control including carrier gas. Detection limit should be around 1 PPM.

FID detector

Temperature range – ambient to 450 °C. Auto ignition and flame off warning. Automatic gas control for air and hydrogen.

Methanizer: to detect CO in PPM level should be installed separately, with bypass valve.

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28/11/16

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INJECTOR

Split/Split less injector, 1/ 16 fittings, and automatic gas control.

Head space

Intended to analyzer the online small gas molecules and hydrocarbon. Offline injection facility should also be provided.

Run Time:

The analysis of all the components should be finished by 45 min at the max.

Flow control system

Electronic flow control such as constant pressure and ramped pressure, constant flow and remapped flow of carrier gas. Pressure accuracy of 0.1 %.

Standard

Necessary calibration gas for calibration at the time of installation.

Warranty

Comprehensive 3 year warranty form the date of installation.

Installation and Commissioning

Supplier /Indian Agent should install the instrument at our site and should demonstrate and train the chemists at site for the operation, method development and routine maintenance of the instrument.

Results should match with test certificate

(K. Bhaskara Rao)

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