



सी०एस०आइ०आर०-भारतीय पेट्रोलियम संस्थान  
CSIR-Indian Institute of Petroleum

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

पो. ऑ. आई. आई. पी., मोहकमपुर, देहरादून, भारत

P.O.I.I.P., MOHKAMPUR, DEHRADUN – 248005 (UK) **INDIA**

Ph.0135-2525762 & 2525754, Fax. 0135-2660072, 2660202-203

E-Mail- [spant@iip.res.in](mailto:spant@iip.res.in), [bharat.spo@iip.res.in](mailto:bharat.spo@iip.res.in)

Website : [www.iip.res.in](http://www.iip.res.in)



ISO-9001-2015 Regd. Institute

Reference No.: IIP/PUR/1/22-23/240/EOI/Hptd-GC/JK/ASD/PO:

Date:04.08.2022

Subject: Invitation of Expression of Interest for “**Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector**”

CSIR-Indian Institute of Petroleum (IIP), Dehradun, and ISO 9001-2015 Institute, is one of the leading constituent laboratories under Council of Scientific & Industrial Research (CSIR) engaged in R&D work in petroleum refining, natural gas and petro-chemicals and contributing towards creation of state of the art technology & products. CSIR-IIP has been working on several projects of National importance independently and also in collaboration with well-known Indian & foreign organizations.

This EOI is designed to explore the market and to finalize specifications based on technical discussions/presentations with the experienced Engineering/Fabricating companies/Firms in a transparent manner for “**Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector**”.

E-BIDS for EOI are hereby invited through Central Public Procurement (CPP) Portal (<https://www.etenders.gov.in>) and only online offers will be entertained from the registered bidders of CPP Portal.

Reference No.: IIP/PUR/1/22-23/240/EOI/Hptd-GC-ID&MSD/JK/ASD/PO:

Supply of “**Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector**”

Last date of submission : 31.08.2022 by 3:00 PM

Date of opening : 01.09.2022 at 3:00 PM

Interested bidders may download the details from our Website: [www.iip.res.in](http://www.iip.res.in) or on CPP Portal (<https://www.etenders.gov.in>).

For and on behalf of CSIR

S/d  
Controller, Stores & Purchase

**Subject: Invitation for Expression of Interest (EOI) for “Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector”**

CSIR-India Institute of petroleum (IIP), Dehradun an ISO 9001 Institute is one leading constituent under the council of scientific & Research (CSIR), engaged in R&D work in petroleum refining, natural gas and petrochemicals and contributing towards the creation of the state of the art technology & products. CSIR-IIP has been working on several projects of national importance independently and also in collaboration with well-known Indian organizations.

EOI are invited from reputed firms for supply of “**Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector**” for CSIR-IIP, Dehradun the required material properties for determination of the individual and group wise hydrocarbons in petroleum middle distillates. The entire part of Hyphenated Gas Chromatograph must be of same original equipment manufacturer (OEM).

Firms that have executed similar orders previously can apply along with documentary evidence for the same. The firms should also meet the other parameters as given below and required to submit the following information along with their applications:

- a) Name of the firm with constitution /proprietorship detail, etc with the date of establishment/ registration
- b) List of similar orders completed in the last seven years as above with testimonials from the department concerned and the details of contact persons.
- c) The firm should not have incurred any loss in more than 2 years during the last 5 years ending 31<sup>st</sup> March, 2022.
- d) List of orders in hand giving details of department, and cost, date of start and completion with present progress, and the clients’ contact details.
- e) The certified Balanced Sheet and Profit & Loss account of the firm for the previous two years (2020-2021 and 2021-2022) must be enclosed with the offer.
- f) Please submit articles of Association along with the offer to outline the scope of activities and standing of the firm.

Firms are requested to refer to the ***Order Nos. P-45021/2/2017-PP (BE-II) dt. 15.06.2017 as amended vide order of even number 28.05.2018, 29.05.2019, 04.06.2020, and 16.09.2020 and any subsequent amendments thereto*** issued by Public Procurement Section of DPIIT, Min. of Commerce & Industry, Government of India in their own interest to know about the provisions related to domestic suppliers for participation in open tenders. Firms may also refer to various other policies / programs of the Govt. related to promoting domestic manufacturing and/or supply

Offers against this EOI containing the technical aspects and contractual terms and conditions of the proposed procurement without a bid price should be submitted in form of E-BIDS through Central Public Procurement (CPP) Portal (<https://www.etenders.gov.in>) and only online offers will be entertained from the registered bidders of CPP Portal. Last date of submission of EOI is **31.08.2022 by 3.00 PM**, and shall be opened on the **01.09.2022 at 3:00 PM**. Shortlisted firms shall be called for making a presentation at a later date.

If the Procuring Entity is of the view that after EoI stage, there is likelihood of further participation by many more bidders and to avoid getting trapped into a legacy technology, the second stage bidding may not be restricted only to the shortlisted bidders of EoI stage. In the second stage, normal OTE/GTE bidding may be done.

If any information furnished by the applicant is found incorrect at a later stage, it shall be liable to be debarred from tendering/taking up of work in CSIR. CSIR-IIP reserves the right to verify the particulars furnished by the applicant; independently. CSIR-IIP reserves the right to reject any prospective application without assigning any reason.

**Technical specifications for “Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector” for CSIR-IIP, Dehradun are as follows.**

The material would include the following properties:

S.No		Specifications
1.	<b>GAS CHROMATOGRAPH</b>	Hyphenated Gas Chromatography with Flame Ionisation Detector and Mass Spectrometry Detector for the determination of the individual and group wise hydrocarbons in petroleum middle distillates.
		In Single injection, Sample should be equally distributed in two parts after column elution. One portion should go to the MS and the other part to FID.
		The entire part of Gas Chromatograph with auto sampling and detectors (FID and MS) must be of same original equipment manufacturer (OEM).
		Retention time repeatability < 0.008% or <0.0008 min or better
		Area repeatability < 1% RSD.
2.	<b>OVEN</b>	Ambient temp +4°C to 450 °C.
		Maximum achievable temp rates: 120 °C/min or better. Number of temperature-programmed ramps: 20 ramps with 21 isothermal hold or better.
		Oven cool down time should be less than 7 minutes.
		Temperature stability should be within 0.1% of the actual temp.
3.	<b>INJECTOR (01 No.)</b>	Split/splitless Inlet system with pneumatics control, Maximum temp: 450°C, 0-150 psi or better operation with 0.01psi increments, split ratio up to 7500:1 or better.
		There must be a provision for installation of second injector.
4.	<b>AUTO SAMPLER (01 No.)</b>	Should be capable of loading minimum 10 samples at a time.
5.	<b>DETECTOR 1: FLAME IONIZATION DETECTOR (FID) (01 No.)</b>	FID with pneumatic control.
		Maximum temp: 450°C.
		Minimum Detectable level ≤ 1.8 pg C/s.
		Linear dynamic range: > 10 to power 7.
		Flame out detection & auto reignite.
		Data rates 300 Hz or better.
6.	<b>DETECTOR 2: MASS SPECTROMETER (01 No.)</b>	FID with pneumatic control.
		Single Quadruple
		Ionization Mode-Electron Impact (EI)
		Electron Energy 10 to 150 eV or better
		Transfer line Temperature 100 to 350 °C or better
		Ion Source Temperature 150 to 350 °C or better
		Mass Range 1 to 1050 u or better
		Scan rate up to 20000 Da / sec
		Scan Modes: i) Full Scan, ii) Selected Ionisation Mode (SIM)
		7.
The EFC/EPC should be able to set the pressure to a minimum accuracy of 0.1 or better.		

		EPC /EFC for Capillary Inlet with resolution pressure set point 0.001 psi.
8.	<b>COLUMNS</b>	Three sets of high temperature non polar (100 % Dimethyl Poly Siloxane) columns (Spec: length 100 m, Id 0.25 mm, Thickness 0.5 um) along with pre column (5 % phenyl with 95 % Di Methyl Poly Siloxane) (Spec: length 5 m, Id 0.25 mm, Thickness 1.0 um, ).
9.	<b>CHROMATOGRAPHY MANAGEMENT SOFTWARE</b>	Original full version Latest licensed software should be supplied along with the system.
		<b>Suitable Detailed Hydrocarbon Analysis (DHA) Soft ware.</b>
		The vendor should provide the original software license certificate from the original manufacture.
		The software should be Windows10 or higher OS operative.
		<b>Original Latest NIST and Wiley Library for MS.</b>
		Integrated Chromatography software should have 21 CFR Part 11-compliance.
		Should have analytical system performance qualification with the IQ/OQ.
10.	<b>CALIBRATION BLEND</b>	<ul style="list-style-type: none"> <li>i) n-Paraffins calibration mixture nC<sub>10</sub> –nC<sub>20</sub>.</li> <li>ii) n-Olefins calibration mixture nC<sub>10</sub> –nC<sub>20</sub>.</li> <li>iii) Linear Alkyl Benzene Standards.</li> <li>iv) Perfluorotributylamine (PFTBA) for MS</li> </ul>
11.	<b>PC AND PRINTER</b>	The system should be supplied with a <b>branded computer along with double sided printing printer</b> with latest and required configuration for running the system software for data acquisition, data processing and data storing and printing purpose.
12.	<b>INSTALLATION</b>	Supply complete installation with required accessories.
13.	<b>WARRANTY</b>	12 months warranty from the date of commissioning.
		A certificate from the vendor is required stating that it will provide compulsory ten year service support with required spares after the supply of the instrument.
		All technical point should be mentioned in origin Lit or Brochure.
		On-site training: Installation, complete demonstration of the capabilities of the system with calibration standard and actual petroleum middle distillates.
14.	<b>SERVICE SUPPORT</b>	Minimum 10 Years service support with required accessories.

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