



सी एस आई आर -राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान

CSIR- National Environmental Engineering Research Institute

नेहरु मार्ग, नागपुर ४४००२०, भारत

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शीर्षक : **Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser** के लिए ईओआई एवं मांगपत्र पूर्व सम्मेलन.

TITLE: Expression of Interest and pre-indent conference for **Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser**

Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser उपकरण आपूर्ति के लिए, यह संस्थान एक्सप्रेसन ऑफ इंटरैस्ट आमंत्रित करता है।

This Institute invites Expression of Interest (EOI) for **Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser**.

एक्सप्रेसन ऑफ इंटरैस्ट दिनांक **30.05.2023** तक इस संस्थान में पहुँच जाना चाहिए। राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान, नेहरु मार्ग, नागपुर-440020 के समिति कक्ष में दिनांक **01.06.2023** सुबह **11.00** बजे माँग पूर्व सम्मेलन आयोजित किया गया है। The EOI must reach this Institute latest by date **30.05.2023**. A Pre-indent Conference has been scheduled to be held at **11:00 hrs** on **01.06.2023** in the **Committee Room of National Environmental Engineering Research Institute, Nehru Marg, Nagpur-440 020. INDIA**

ईच्छुक पार्टियां अपने उत्पाद / मॉडल के तकनीकी प्रस्तुतीकरण तथा उसकी उपयोगिता, प्रौद्योगिकी, सुविधा, साहित्य, डिजाइन, तकनीकी पैरामीटर, ग्राहकी तथा अन्य संबंधित मुद्दों पर तकनीकी समिति से चर्चा करने के लिए तकनीकी रूप से सक्षम प्रतिनिधि नियुक्त कर सकते हैं। तकनीकी समिति माँग पूर्व सम्मेलन में भाग लेने वाले कंपनी / विक्रेताओं के क्रेडेंशियल्स / तकनीकी क्षमताओं / वित्तीय स्थिति का मूल्यांकन करेगी।

Interested parties may depute their competent technical representatives to make presentation of their product/ model(s) and discuss with the Technical Committee on the aspects of utility, technology, feature, literature, design, technical parameters, clientele and other related issues of the equipment. The Technical Committee shall also evaluate the credentials/ technical capabilities/ financial standings with track record of the companies/ vendors attending PIC.

Process of EOI and PIC :

Last date of submission of EOI 30.05.2023 .

PIC : on 01.06.2023 Time 11.00 AM

- 1) OEM/Suppliers/ Agent must :
 - a) Send Expression of Interest to participate in pre-indent Conference latest by date **30.05.2023** through e-mail.
 - i) Send Printed technical Literature duly indicating point to point NEERI requirement and offered point to point technical compliance, as per Annexure-II.
 - 2) Attend Pre-Indent Conference by fully Technical Competent personnel on : **01.06.2023** to present before CSIR-NEERI Technical Committee:
 - i) Specific Model and make : meeting CSIR-NEERI technical specifications.
 - ii) One printed copy of Supporting Technical Literature.

3) Tentative Technical Specification are as per Annexure – I

मांग पूर्व संमेलन में भाग लेने के लिए तकनीकी रूप से सक्षम प्रतिनिधि को अधिकृत किया जाना चाहिए जो जगह पर निर्णय ले सकें तथा समिति द्वारा उठाए गए बिन्दुओं की पुष्टि कर सकें। तकनीकी प्रतिनिधि नीरी तकनीकी समिति द्वारा अंतिम रूप दिये गए तकनीकी विनिर्देशों पर हस्ताक्षर करने के लिए सक्षम होना चाहिए। Technically competent representative should be authorized for attending Pre-Indent Conference who can take on the spot decision and confirm on the points raised by Technical Committee. Technical representative should be able to sign the final technical specifications finalized by the NEERI Technical Committee.

Interested parties may submit EOI regarding **Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser**, addressed to the Director, CSIR-NEERI, Nehru Marg, Nagpur- 440 020 by email on st_pur@neeri.res.in, spo@neeri.res.in, n_kamal@neeri.res.in.

भंडार एवं क्रय अधिकारी /Stores & Purchase Officer

Tentative Specifications / requirement (Annexure- I)

Supply, Installation and Commissioning of Elemental, Organic, Brown and Black Carbon Analyser

Name of Analyser: Elemental, Organic, Brown and Black carbon analysis of particulate matter collected on Quartz filter media.

Brief Description of Analyser: The analyser is intended to measure elemental carbon (EC), organic carbon (OC), brown carbon (BrC) and black carbon (BC) in particulate matter collected on quartz filter media from different air pollution source and environment. The measurement should be carried out using thermal / optical, transmittance / reflection principle using minimum seven wavelengths. All these features should be housed in a single compact unit.

Specifications:

1. The analyser should measure organic carbon emitted from particulate matter at four different temperatures (120, 250, 450 and 550 degree Celsius) using reflectance and transmittance at different wavelengths.
2. It should measure elemental carbon emitted from particulate matter at three different temperatures (550, 650 and 800 degree Celsius) using reflectance and transmittance at different wavelengths.
3. The instrument should analyze organic and elemental carbon by IMPROVE-A and NIOSH 5040 protocol and EUSAAR-2 with an option to create any customised analysis protocols as per user requirement.
4. It should estimate Brown Carbon (BrC) and Black Carbon (BC) using spectral light absorption.
5. The instrument should have auto-loader of particulate matter sample collected on quartz filter media in a batch of more than 30 samples.
6. The system should use Nondispersive infrared (NDIR) detector to measure CO₂ directly and does not use a methanator. The analyzer should use mass flow controllers (MFC) for precise flow control and measurements.
7. Analyzer should work at standard input supply 220 V, 50 Hz.
8. The software should be based on LabVIEW to provide user-friendly interface and instrument control. The system should be designed to facility easy maintenance and repair.
9. Range of carbon measurement: From 0.05 to 750 µg carbon/cm².
10. Minimum Detection limit:
 - Total organic carbon = 0.43 µg/cm²
 - Total elemental carbon = 0.12 µg/cm²
 - Total carbon = 0.49 µg/cm².

Other conditions:

1. Installation requirements should be clearly mentioned & offered separately.
2. Research Papers published in leading journal using data generated from EC-OC analyser should be submitted along with technical bid.
3. Necessary UPS of minimum 3 KVA should be supplied with the instrument.
4. All connecting accessories with Gas cylinder necessary for measurement and operation of instrument along with calibration and gas purification systems should be supplied by vendor.
5. Necessary Hardware and software kits and tools for supporting remotely through telephone or internet connection shall be provided by the vendor.
6. The vendor should own complete responsibility for delivery, installation and commissioning of instrument to the satisfaction of NEERI Nagpur.
7. Comprehensive 3 years' warranty with spares from the date of installation of the instrument should be covered. Warranty will start from the date of the complete installation.
8. Notwithstanding anything stated above the purchaser reserves the right to assess the capability and capacity of the bidder to perform the contract, should the circumstances warrant such an assessment in the overall interest of the purchaser.

Annexure – II

तकनीकी विनिर्देश अनुपालन एवं विचलन प्रपत्र

Technical Specification Compliance cum Deviation Form

नीरी निविदा सं के अनुसार तकनीकी अनुपालन / Technical Compliance against NEERI Tender No.

Sr. No.	NEERI's Technical Specifications	Vendor Quoted Specification	In case of Compliance, supporting printed technical literature mentioning page no. Column & line has also to be highlighted	Deviations to NEERI specifications if any,	Reasons for deviations	Special Remarks if any,
1.	2.	3.	4.	5.	6.	7.

स्थान / Place:

तारीख / Date:

निर्माता / बोलीदाता के हस्ताक्षर एवं सील

Signature and Seal of the Manufacturer/Bidder