

Indian Institute of Technology, Kanpur
Centre for Environmental Science and Engineering

Tender Enquiry No.: [CESE/PCI/2018/1](#)

ITEM: High sensitivity Pressure Chamber for PCI

A) Technical Specifications

We require a high sensitivity pressure chamber for the determination of pressure -composition-isotherms (PCI), along with other accessories and items as specified in this document.

The specifications of the chamber can be found in Table 1. Accessories, spares and other required items can be found in table 2.

Table 1) Specifications of high sensitivity PCI chamber

Specifications of the PCI chamber	
Constructed Cell	Stainless Steel (SS 316) with 1/8" tubing and 0.5 cc sample chamber volume.
Vacuum	$>10^{-5}$ Torr.
Pressure	Upto 50 bar.
Valves	High Pressure Diaphragm Valve for pressure isolation.
Seal	Metallic SS 316 Gasket with VCO Connection.
Temperature	Should be able to operate in the temperature regime: -196°C to 400°C.
Gases	The atmosphere in the chamber can be any of the following gases: Ar, H ₂ , N ₂ , He, etc.
Temperature measurement	Ability to measure sample temperature (with type K thermocouple) close to the sample
Make and model of the PCI unit for which the chamber is required	Model LPB, 2 Channel (S/N 0356Q), Advanced Materials Corporation, Pittsburg, USA

Table 2) Accessories, spares and other items

Name	Specifications	No.
PCI fittings and spare parts	2 micron in line particle filter (high pressure 200 bar), VCO O-ring face seal fittings. Swagelok (e.g.)	1
Temperature controller	range: ambient to 400 °C, PID Controller with feedback loop, Omega (e.g.)	1
Thermocouples	K-Type with SS 304 sheath, rugged transition joint (1/4 "OD) to withstand 200 bar pressure. Omega (e.g.)	4
Gas compressor	Single Drive, single Action, Minimum inlet pressure (30 bar), Maximum outlet pressure (700 bar), Maximum air drive pressure (7 bar). Typical gases of operation include hydrogen, argon, nitrogen. Hydraulic International Inc (HI) (e.g.)	1

B) Terms and conditions

Warranty

Two year onsite comprehensive warranty required (from date of successful installation at IITK).

Installation

The price should be inclusive of installation on site with full functionality.

Delivery

- 10 weeks maximum from the date of purchase order. For any extension in the delivery date, permission should be sought with valid reasons.

Payment & Taxes: As per IIT Kanpur Norms.

Concessional rate of GST (@ 5%) will be applicable with reference to Notification No. 45/2017 Central Tax (Rate) dated 14/11/2017. IITK will provide relevant certificate for this purpose. On import items for research purpose presently the GST applicable is 0% (Zero percent). DSIR certificate along with CDEC will be provided by IITK to vendor for availing concession. *Vendor should use these GST rates in their quotation.*

Customs/Excise Duty

The institute is exempted partially from payment of customs duty (The rate applicable will be @ 5.50%). Under notification 51/96 and a road permit will be provided (wherever applicable). It is to be noted that the Concessional Form 'C/D' have been abolished w. e. f. Apr 01, 2007.

Spares

All required spares for operation for two years have to be provided.

Certificate of satisfactory performance

The company should provide certificate of satisfactory installation and performance from 3 (three) I.I.T. Kanpur customers, to whom a similar product has been supplied. Additional certificates may be provided from other I.I.Ts and reputed scientific organizations like BARC or CSIR labs.

Details of Quotation

- Two separate bids, Technical and Financial bid to be submitted in separate sealed envelopes. Write enquiry number, item name and last date of tender on the envelope.
- Quotation should be valid for 90 days. All quotes should be in Indian Rupees (INR) with total cost (including taxes as applicable). Prices of individual components and the total should be given.
- The main envelope should clearly mention the Tender Number at the top.
- Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
- Maximum educational discount should be offered wherever applicable (i.e. pricing should be for educational institute).
- The Quote should cover insurance and transport up to Kanpur.
- The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.
- **Quote: Quote should reach the address as below by 11 June 2018. Extended date is 22 June 2018.**

Dr Anandh Subramaniam
Department of Materials Science and Engineering (MSE)
I.I.T. Kanpur, Kanpur 208016
Email: anandh@iitk.ac.in,
Phone : (+91) (512) 259 7215