

# Indian Institute of Technology Kanpur

## Department of Materials Science and Engineering

February 14<sup>th</sup>, 2012.

Enquiry No. MSE/DG/2011-12/01

Enquiry Date: 14/02/2012

Closing date: 27/02/2012

Sealed Quotations are invited from interested suppliers for the supply of following, “Clean room Material” items as per specification given below and additional installation and validation.

The clean room is of approximately 875 sqft with additional area 43 sqft for Change Room, which will be conditioned at ISO class 7. A Garment cubicle shall be placed in the Change Room. A drawing of the clean room is attached at the end.

The area for wet bench and the Change Room shall be maintained at ISO class 7 “at rest” as per ISO 14644 – 1, and the Yellow Room shall be maintained at ISO class 6 “at rest” as per ISO 14644 – 1. We will provide upto 4 FFU as material supply. These FFU’s are Mirco Tac make, model No. MAC10XL.

The Clean Room/ Change Room area shall be temperature controlled at temperature of 23°C + 2°C and RH –NMT 60%.

Preparation of the site will be as is. Electrical power is available at one location with two distribution boards. Water supply and drains are available at one location.

### Clean Room Material Supply

S. NO.	Description	Make	Unit	Qty.
A	Air management / HVAC System			
1	AIR HANDLING UNITS:			

	<p><b>Air Handling Unit:</b> Double skin air handling unit constructed out of 22/ 24 G GI sheets with 25 mm PUF section in between and comprising of following sections:Filter section with combination of Pre filter with 10 Micron filters &amp; Fine Filter with 5-micron filter. <b>6 Row Deep Dx type</b> Cooling coil section with coils. Blower section with DIDW blower, drive set Pulley,. Mixing box with fresh air module, Common base frame with Vibration isolation pads for Motor Blower Assembly. Suitable inspection doors for filter, coil &amp; blower sections are provided in the unit. Flanged connection at the outlet of AHU provided for integrating to the main Duct line. Standard as applicable for Clean Rooms:</p>	Edgetech/ Zeco/ Equivalent		
	<b>7700 CFM/125 mm TSP/ (8.5 TR x2)</b>		No.	1
<b>2</b>	<b>CONDENSING UNITS:</b>			
<b>2.1</b>	<p><b>Condensing Unit:</b> Air-cooled condensing unit of suitable capacity with scroll compressor of reputed make complete with copper piping, refrigerant gas, HP and LP cutouts, Thermostatic expansion valves, thermostats for tripping the compressors after reaching the temperature in conditioned area and with suitable insulation of the suction line. Air-cooled Condenser coil with suitable size fan etc.</p>	Carrier/ Voltas/ Blue Star		
	<b>8.5 TR x 2 Nos.</b>		Set	1
<b>3</b>	<p><b>Ducting:</b> Ducting made out of GI sheet with proper gasketing, supports, rods etc and fabricated as per standards. Angle iron frames shall be provided wherever required as per the duct sizes. <b>All the ducts shall be sealed with Silicon Sealent for making them leak proof.</b></p>			
	24 Gauge		S.Mt.	325
	22 Gauge		S.Mt.	125
<b>4</b>	<p><b>Insulation:</b> Duct insulation with cross linked Polyethylene Foam of Trocellen Make. Duct shall be pasted on duct using suitable rubber adhesiive. All the exposed ducting shall be with Factory fabricated Aluminium foil. While rest of insulation shall be plain.</p>			
<b>4.1</b>	<b>Plain Insulation</b>			
	13mm thick for supply air.		S.Mt.	250
	9mm thick for return air duct.		S.Mt.	250
<b>5</b>	<p><b>Terminal HEPA Box</b> in MS CRCA powder coated construction with DOP/DP ports,damper and Al powder coated perforated sheet suitable for following filter size.</p>			
	610x610		No.	7
	610x610 - 500 cfm		No.	2
<b>5.1</b>	<b>Terminal HEPA filter</b>			
	610x610		No.	7
	610x610 - 500 cfm		No.	2

5.2	Return air grill with damper in Al. construction for return air risers in Clean room area		S.Mt.	2
6	<b>Volume Control Dampers-</b> In GI Construction 18 G for controlling the flow of air.		S.Mt.	2.5
7	<b>Fire Dampers-</b> For providing safety against the spreading of Fire. The fire damper shall be provided with Fusible link/ limit switch and shall be installed at SA/ RA cutout of ahu.		S.Mt.	1
8	<b>Electrical work:</b>			
8.1	<b>Electrical Control Panels: Main</b> Electrical Control Panel with incomer/outgoing, on/off push button, indication lights etc for AHU 01 . Panel should have an interlock arrangement for interlocking AHU 01 with their respective condensing units.( <b>Note: the incomer cable from user main panel shall be in scope of client</b> ) <b>Cabling between the Electrical Control Panel to the AHU / Condensing Unit shall be in our scope.</b>		No.	1
<b>B</b>	<b>CLEAN ROOM INTERNAL FINISHES</b>			
10	<b>Ceiling System-</b> Sandwich type Non Walk-on type GSS 100 mm Thick pre-coated Metallic ceiling panels with insulation of TF grade EPS / PUF with all supports and hanging arrangement. To include all cutouts for HEPA Filters and lights.		S.Mt.	102
11	<b>Wall Panelling System-</b> Sandwich type Double skin GSS Pre/ Powder -coated Metallic wall panels of 100 mm thickness with EPS insulation of TF grade with all supports and accessories. One view panel for size approximately 2x2 ft is to be included.		S.Mt.	97
12	<b>Wall Panelling System with RAR-</b> Sandwich type Double skin GSS Pre/ Powder -coated Metallic wall panels of 100 mm thickness with EPS insulation of TF grade with all supports and accessories. Risers shall be in-built into the Wall Panels to extract about 600 cfm of air nominal.		S.Mt.	64
13	<b>Door System :</b> Clean Room GSS pre coated doors with EPS as insulation complete with door frame iron mongrey, closers handles and other accessories as per specifications enclosed. Double Leaf Doors with drop seal.			
	Single leaf door of size : 2100(H)x 900(W) mm		No.	1
	Single leaf door of size : 2100(H)x 1200(W) mm		No.	1
	Double leaf door of size : 2100(H)x 1500(W) mm		No.	1

<b>14.1</b>	<b>Electrical Point Wiring</b> for single phase wiring for equipments etc. to include 16A 3 Pin Socket Points: Supply, fixing, testing and commissioning of One no. 6/16A modular socket and switch combination in a suitable size modular box in recessed system. (6/16A socket controlled by 1 Switch) Wiring to the 6/16A 5 Pin or 6 Amps using 2 Runs of 2.5 sqmm and 1 Run of 1.5 sqmm multi-strand PVC insulated copper conductor in suitable size MS pipe in open system above false ceiling and concealed system in below false ceiling in wall / column etc.		No.	10
<b>14.2</b>	<b>Electrical Point Wiring</b> for three phase wiring for equipments etc. to include 32A 3 Pin Socket Points: Supply, fixing, testing and commissioning of One no. 32A modular socket and switch combination in a suitable size modular box in recessed system.		No.	2
<b>15</b>	<b>LIGHTS</b> Clean room compatible Light fittings with CFL (3 X 36 W) , Electronic Ballast & with mirror optic finish and opal acrylic cover.	Mayfaire/ Candylite / eqvt.	No.	14
<b>16</b>	<b>Magnahelic Gauge</b> for measuring room differential pressure including PVC tubing (0-50 Pa).	Sensocon/ eqvt.	set	3
<b>17</b>	2mm thick <b>Epoxy Flooring</b> self levelling type to provide a seamless finish and suitable for clean room		sqmt	102
<b>18</b>	Wall to Wall & Wall to Ceiling <b>coving</b> of radius 50mm in PVC construction. Wall to floor coving in epoxy finish R 50.		Rmt	182
<b>19</b>	<b>Air Shower</b> of GSS Powder Coated, Broken white Shade with Electromagnetic Inter Locking of doors & Blower , overall Dimension 1700 x 1000 With Post Filter of HEPA EU-13.		No.	1
<b>20</b>	<b>Garment Cubicle</b> in GSS Powder Coated, Broken white Shade with Pre and HEPA Filter, overall Dimension 1200 x 600 mm & 2000 mm ht.		No.	1
<b>21</b>	<b>Duct mounted electrical heater</b> with humidistat			
	AHU 01		No	1
<b>22</b>	<b>Fire Detection system</b> using 4 nos. Smoke Detectors ( conventional ) with RI and cabling to nearest detector to be incorporated in the existing system.		Lot	1
<b>23</b>	<b>Minor civil works</b> for making/ breaking of walls for ductwork . Includes minor plumbing works as well.		Lot	1
<b>D</b>	<b>COMMISSIONING/ VALIDATION</b>			
<b>24</b>	<b>Validation/Documentation:</b> Validation and documentation of the complete facility as per the ISO 14644 Clean Room standards for ISO Class 7 'at rest' conditions . This shall include - Air PArticulate count using Laser Particle counter, temp & RH checks, differential pressures. this shall be 4 times per year.		JOB	1

Please mention the compliance status of each of the above items in a tabular form.

In addition, the vendor must specify the following:

1. Installation of each material of supply should be included. The price of installation may be included with the table for supply of materials.
2. Testing and Validation – mention the testing and validation schedule over all seasons.
3. Specify the exact Warranty details and mention the warranty period of one year is desirable.
4. Item/materials should be supply on FOR IIT Kanpur/Destination.
5. Clearly mention the payment terms and conditions.

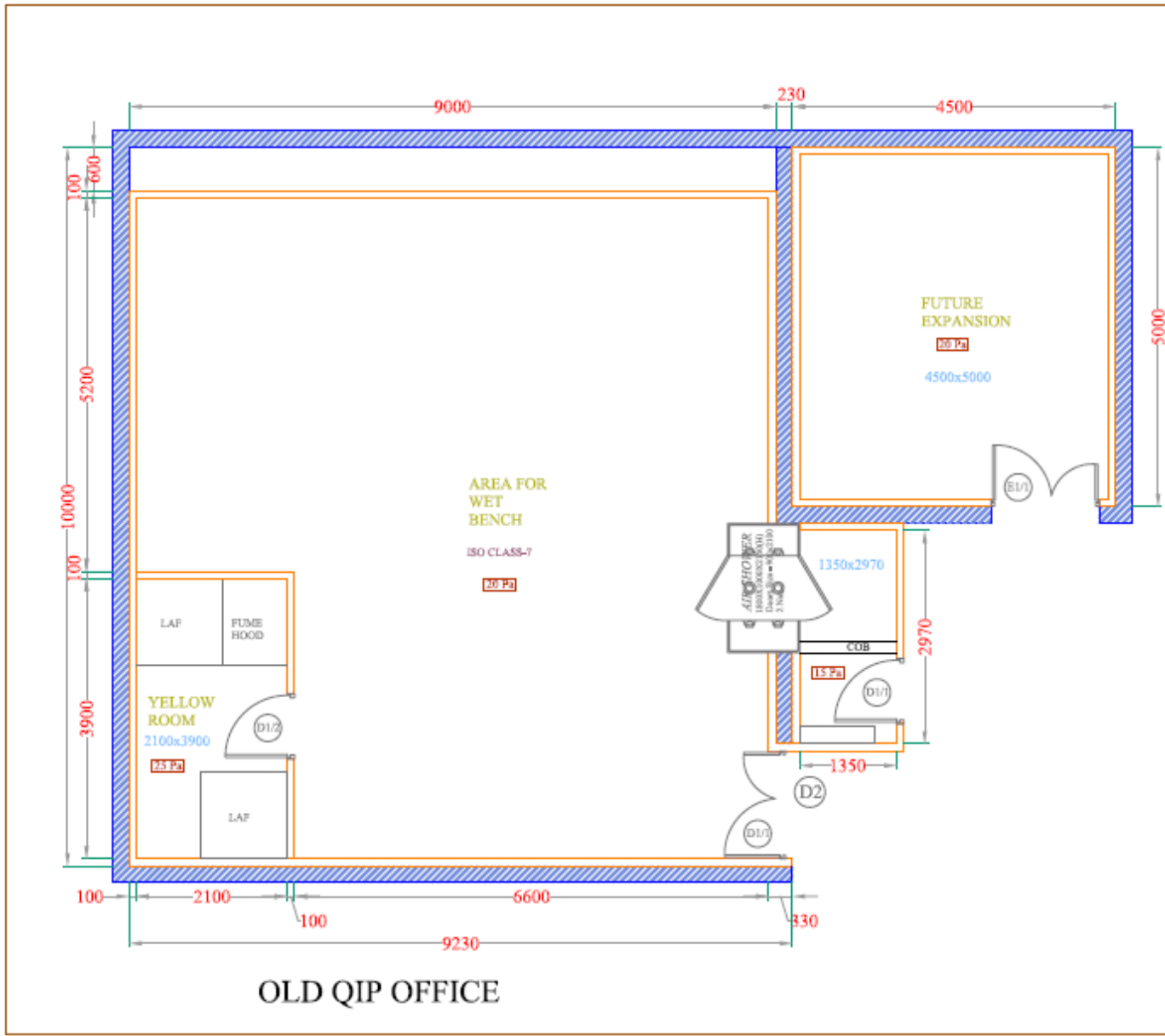
Note that those providing longer warranty, better after sales service and support, and more rigorous testing procedure, with written evidence will be given preference. Penalty clause will be applied in delayed supply.

Quotations should be reaching on or before February 27th, 2012 to the following address:

**Prof. Dipak Mazumdar**  
**Department of Materials Science and Engineering**  
**IIT Kanpur**  
**Kanpur-208016**

#### **Terms & conditions for supply of above mentioned articles**

1. In the case of proprietary please enclosed proper proprietary certificate from the manufacturer.
2. In the case of agent/dealer, please enclose the proper authorization/dealership document from the manufacturer.
3. Quotation will be sent by post/by hand to the above mentioned address; IIT Kanpur will not be liable for any kind of postal irregularity/delay.
4. The quotation in duplicate should be enclosed in a properly sealed envelope. Enquiry no and due date of opening should be mentioned at the envelope.
5. The Rate offered should be free delivery of IIT Kanpur or ex-go down in case of firms situated outside Kanpur. If items are imported then the firms should quote the price on F.D.B basis.
6. In case of Ex-go down terms the amount of packaging, forwarding freight etc. should clearly be mentioned by percentage or lump sum amount. Current rate of sales tax must be mentioned.
7. The rates offered should be exclusive or inclusive sales tax. The rates applicable should clearly be specified.
8. The delivery period/Warranty should be specifically stated.
9. The firms are requested to give detailed description and specification together with detailed drawings and printed leaflets and literature of the articles quoted. The name of manufacturers and country of manufacture should also be invariably being stated. In the absence of these particulars the quotation is liable for rejection.
10. Quotation should have validity of 90 days from the date of opening.
11. 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.
12. Institute is exempted for payment of E. Duty under notification No. 10/97.
13. Warranty period should be mentioned clearly (such as 1, 3, 5, 7, 10 Years) so that all vendors should quote for same and it will be better to compare.
14. Penalty clause in delay supply and payment term should be there.
15. Item/materials should be supply on FOR IIT Kanpur/Destination.



**General Note:**  
# All dimensions are in mm unless otherwise specified.

**Legends:**

S.No	Legend	Description	Size in mm	Qty.
01	(Symbol)	Single Leaf Door	900x2100 (H)	2 Nos.
02	(Symbol)	Double Leaf Door	1500x2100 (H)	1 No.
03	(Symbol)	Double Leaf Door (Emergency Exit)	1500x2100 (H)	1 No.
04	(Symbol)	Civil / Bead Wall		
05	(Symbol)	100 mm Thk. Wall Panel		

**Remarks:**

Rev. No.	Date	Description / Issue
REVISIONS		

Client: **INDIAN INSTITUTE OF TECHNOLOGY KANPUR**

Title: CLEAN ROOM LAYOUT WL-113

Drawing No.: 311000	Sheet No.: 1 of 1
Prep. by:	Checked by:
Appr. by:	Scale: (A3) 1:50
Released Date: 29.01.2011	Revision to: 00