



Indian Institute of Technology Kanpur National Centre for Flexible Electronics

Enquiry number: SCDT/FlexE/2017-18/16

Date: 07/09/2017

Opening Date: 25/08/2017

Closing Date : 14/09/2017 Extended till: 18/09/2017

Subject: Purchase of LAB EQUIPMENT STATION (fume hood & workstation).

Indian Institute of Technology, Kanpur “An Institute of national importance”, invites sealed two part bids from reputed manufacturer/fabricator for installation of **LAB EQUIPMENT STATION (fume hood & workstation)**:

Note- All interested vendors are requested to submit “techno-commercial bids” together in separately sealed envelopes, containing technical bid (Envelope – I) along with the documentary support of mandatory criteria of technical qualifications (as mentioned below) and Commercial bid (Envelope – II) placed in a larger sealed envelope super-scribing with reference number (Tender Inquiry No.).

(Please find the drawing attached/given to understand the requirement/specification as per tender inquiry)

Technical specification for evaluation of technical bids is provided in this document subjected to following mandatory criteria (backed by documentary support)

1. Vendor should have his own in-house manufacturing facility and must be doing manufacturing at least from last 5 years.
2. Company turnover of value above 15 Cr/yr in last three years will be preferred.
3. Bidders must have done turnkey projects of (INR) one crore and above value in past three years (document in support with work completion certificate must be attached).
4. The bidder need to submit work completion certificate for at-least one work of similar nature having a magnitude of similar or higher value, preferably project from the semiconductor and/or pharmaceutical industries as well as premium institution such as IITs/IISER/central universities.
5. Company should have laboratory fume hoods in-house testing facility with certified personal for carrying out the protocols. (document in support must be attached)
 - a. EN-14175, the European Standard EN 14175:2003, Method of Testing Performance of Laboratory Fume Hoods.
 - b. ASHRAE 110-1995, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Method of Testing Performance of Laboratory Fume Hoods.
6. Bidders must have his offices/branches in the northern Indian region for better service and support (document in support require).
7. Bidder should have SEFA membership certificates for last five years on a continuous basis.
8. All laboratory workstation, fume-hoods and equipment must meet SEFA standards

All the above mentioned criteria must be supported by the documentary proof. Inadequate documentary proof may leads to the disqualification for the evaluation of the technical bid. Failing of all mandatory criteria (S. No 1-8) may leads to the technical disqualification.

Technical Specifications for C- frame series LAB EQUIPMENT STATION (workstation) with granite worktop:

Under Bench Module on 'C' Frame:-

Completely made of 1 mm GI sheets as per IS 277 standard. CRCA corrodes and hence not acceptable. The shutter & drawer front should be of sandwich construction. The sound deadening plastic bumpers to be used to minimize banging noise while closing the shutter. The entire module is made up of GI panels and are bolted for high corrosion resistance. Welding of modules is not acceptable. The shutters are mounted to the modules by hinges which are openable to 95 degree & self-closing on return. Lockable roller bearing must use so that the drawer will not fall. The telescopic drawer slides which should be very sturdy & able to take load upto 30kg. All modules to have lock and dual key arrangement. The lock ring should be plastic & not metal. The overall weight bearing capacity of working station would be more than 300kg. Foam sheet filled in shutter gaps is not allowed.

Frame construction: Entire structure should be "C" frame type. 60 X 30 X 2 mm pipe is used for main frame structure. CO2 welded & finished with highly chemical resistant epoxy powder coating. Any rusted frame would be lead to rejection of the work station

Material of Construction: Completely made of 1 mm GI sheets.

Work top: Made of (17 to 19mm) thick Jet Black Granite Top with Chamfer molding at the front & groove at the bottom to avoid chemical spillage on the modules.

Electrical Trunking: Electrical Trunking of 120mmD x 120mmH will be installed on the back site of work station.

Switch & Sockets: Norisys/ Havells/legrand or equivalent make Electrical Socket with Piano switch 5/15amp with wiring (Default specs)/ Data point / voice point.

Powder Coating: Complete module & frame work are processed with 8 tank pre- treatment and finished with highly corrosion resistant 'Akzo nobel/PolyBond or equivalent' epoxy powder coating With 70 - 80 microns thickness and 1000 hours salt spray test passed.

Adjustable Reagent Rack (1 Tier & 2 Level) : 1 Tier Adjustable Reagent Rack with 400 mm Depth & 2 Tier Adjustable Reagent Rack with 120 mm Depth as per requirement.

Adjustable Box: Adjustable box of size 120mmDx150mmH & Length will depend on the length of a table. It is required for provision of utility in future.

Sink Unit with other accessories: Furniture Peg Board with 30 Pegs with SS Collection Tray required as per layout. One Way Water Tap-Gooseneck Type (Far-Italy) required as per layout

PP Sink - L-600Lx W-450 x D-300 mm required as per layout

Emergency Safety Shower: GI Safety Shower Cum Eye Wash Dual Action (Refer drawing Lab 01)

Technical specification of the Fume hoods is as mentioned below

Sr. No	Specification	Description
1	Model and usage	Fume hood for Regular usage in General chemistry
2	Design Basis	<p>American Design Standard: ASHRAE110- 1995 All tests including “Tracer gas containment test” passed.<u>(Third party test certificate mandatory)</u></p> <p>European Design Standard: EN-14175- 2003 ‘Inner Plane Containment test’ passed.</p> <p><u>(Third party test certificate mandatory)</u></p>
3	Design Structure	Aerodynamic, Floor mounted
4	Airflow Type	Low Constant Volume
5	Colour Combination	Grey & White
6	Powder coating	Pre-treated with 8 tank chemical processes and powder coated with highly chemical resistant epoxy Colors having dry film thickness of 70 to 80 microns. Passes all conformity performance tests as per IS standards.
7	Material of Construction of superstructure	<p>Galvanized Iron (GI) as per IS 277: 2003 standard of</p> <ul style="list-style-type: none"> • 1.0 mm thickness for all sheet metal paneling • 1.2 mm for back pillars • 1.2 mm for front corner post
8	Front Top Panel	Easily openable hinged Top Panel for easy access to Flow Control Valve and Electrical Lighting fixtures for maintenance.
9	Corner Post	Panel profiled corner post is placed on left and right side of the fume hood.
10	Construction (Interior)	<p>Chemical & Heat Resistant, Fire Retardant, Smooth Finish, Easily Cleanable Panels Made out of durable “<u>PRL</u>” integral work walls (6 mm thick). ASTM flame spread index < 25. (No other liner is acceptable).</p> <p>Entire internal structure should be boltless design and fished with premium quality 3M adhesives.</p>
11	Active Kinetics exhaust system	<u>Interstitial</u> 7-point active kinetics exhausts system (for light, normal & heavy fumes) with baffle to ensure rapid exhaust of fumes.
12	Airfoil	Aerodynamic Design, Horizontal fixed airfoil mounted on the worktop made of SS 304 (1.2mm) Teflon Coated

13	Worktop	Chemical resistant splash & spillage proof dished ' <u>Jet Black Granite</u> ' worktop (18 ±1 mm thick). Skirting of 15 mm from all sides for no chemical spillage.
14	Sink, Water tap with drain arrangement	Worktop will have sink sealed with silicon sealant for drainage with water tap on left & right back side of worktop. Sink will have a trap for waste collection. <ul style="list-style-type: none"> • Oval shaped 100 mm X 200 mm sink
15	Sash (Shutter)	Vertical rising sash counter-balanced with pulley and counter-weight system. <u>With timing belt system no SS rope or any other material rope is acceptable</u> Toughened Float Glass sash (4 mm thick). Smooth and light sash operation. Clear openable height = 750 mm. Impact Resistance of the sash (Toughened Glass) is four times higher than other sash materials (like Safety Glass and Polycarbonate). Breaking Stress value for fully toughened glass (Tempered Glass) = 24,000 psi.
16	Wet & Dry Service valves	Remotely operated Colour coded Brass Needle Valves for fine control over utilities (as per DIN 12920 norms) total 4 nos. service valves with PU plumbing with 6 mm internal dia, withstands up to 5 kgf pressure (<u>All on LHS</u>) <ul style="list-style-type: none"> • 1 for Raw water (PU) • 1 for Nitrogen(PU) • 1 for Vacuum (Teflon) • 1 for Compressed Air (PU)
18	Internal nozzles	Brass powder coated fittings are staggered in the fume hood to avoid the intermingling of the flexible hoses on the back wall. Also the taps are tapered in shape to use with flexible tubing of sizes from ¼” to ½” in dia, to provide greater flexibility to the user. Note: - Our Scope of supply for utility lines ends at 1/4 th BSP male adopter.
19	Lighting	Fluorescent light (40 watt, 2 Nos.) with vapour-proof fitting for proper illumination. Intensity approx 400 lux at worktop level.
20	Electrical Utilities	3 nos. electrical sockets 'Havells/Legrand/NorthWest or equivalent' make (230 V, 6/16 A, 50 Hz), 3nos. 'NorthWest/Havells/Legrand or equivalent' make MCBs with blower NO/NC switch with built –in starter & light switch on front fascia. Cables & wires ' <u>Fire Retardant</u> ' grade. (<u>All on RHS</u>)
21	Built-in Starter	The electrical wiring will have built-in starter of “Telemechanique” make; suitable to blower motor capacity.
22	Cable entering port	For easy access of cables from fume hood to electrical sockets.
23	<i>Chemical Storage Base Cabinet (Ventilated & on castors)</i>	Base cabinet will be ready to receive the fume hood at its top C-frame structure. It will have following feature:

		<p>1) Completely made from 1mm thick GI sheet with Highly corrosion resistant epoxy powder coating,60-80 microns thickness.</p> <p>2) Cabinet integral work walls will be Special chemical & heat resistant, smooth finish, easily cleanable panels made out of durable PRL sheets.</p> <p>3) Two exhaust ports connected to the fume hood exhaust system internally.</p> <p>4) One removable horizontal partition to store chemicals.</p> <p>5) PP Trays for chemical storage.</p> <p>6) Cabinets on castors.</p> <p>7) Roller catch of “EBCO” Make for the Base Cabinet doors.</p> <p>8) Polyamide Hinges in Black Color from outside of Base Cabinet.</p> <p>Overall Dimensions: 700 mm W X 540 mm D X 700 mm H – 2 nos.</p>
24	Apparatus Holding Grid <i>(Lattice Assembly)</i>	A grid made up of Duralumin Powder coated rod (Dia. 12.7 mm) to hold the apparatus. It will cover the entire length of the fume hood and will be built-in at fume hood backside. Installed at the distance of 150 mm from backside of fume hood.
26	Level adjusting screws	Made of SS Bolts to adjust the fume hood level by ± 10 mm.
27	Exhaust Port	Unique exhaust port design ensures that the fumes will be exhausted smoothly without any turbulence at the exhaust port. Also it ensures low noise level.
28	Flow control valve	To regulate airflow.
29	Noise Level	< 70db at 1 meter from fume hood.

Technical specification Centrifugal blower: *SEAT / PLASTIFER Make*

(For air suction in cluster of two no. of Fume Hood) -

Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller. It satisfies international safe velocity norms.

Sr. No	Specification	Description
1	Construction	SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.
2	Air Suction Capacity	600 CFM confirming to international face velocity norms and as per safe fume hood airflow pattern.
3	Motor	‘Crompton / LHP/Other Reputed’ make, <u>3HP</u> Motor 3 Phase TEFC, IP 55, Class F, continuous rating. As per IS 325.

‘DUCTING:

Chemical resistant PP + FRP (3mm + 2mm) rigid & flexible ductwork from Fume hood to exhaust stack point with weatherproof canopy. Total ducting with horizontal, vertical members, flanges, bends, bracketed supports and gooseneck exhaust stack.

INSTALLATION:

It will be carried out by skilled team with ductwork design, fitting, fixing of blower, commissioning & testing of the same. Entire IQ/OQ/PQ protocols can be filled up and submitted to us after completion of the installation without any extra cost.

Lab Wise BOQ

Lab 01 (Please refer to drawing of lab 01 and technical specification as mentioned above)

1.1 Work station (1800Lx1000Dx800H): 7 Nos.

1. Modules : 1Drawer/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking: 2 Nos. per table on the backside of work station
3. Electrical Point: 4 Nos. of switch socket at each work station.
4. Data Point: 1 Nos. at Each work station.
5. Voice Point: 1 Nos. at any work station.
6. Adjustable Box: 2 Nos. per work station.
7. Worktop: Granite (17-18mm).

1.2 Sink Unit (1560Lx900Dx900H): 1 Nos.

1. Sink PP: 2 Nos.
2. Reagent Rack (1 Tier 400mmD): 2 Nos.
3. One way water tap: 2 Nos.
4. Worktop: Granite (17-18mm).

1.3 Anti Vibration station: 1 Nos. (900Lx600Dx900H)

1.4 Safety Shower cum eye wash: 1 Nos. specification as mentioned above

1.5 Fume Hood (general chemistry): 1Nos (ducting and blower will be provided by IITK)

Overall Dimensions with base cabinet:	1500 mm W X 900 mm D X 2400 mm H
Fume Hood dimensions:	1500 mm W X 900 mm D X 1600 mm H
Base Cabinet dimensions:	1400 mm W X 540 mm D X 700 mm H
Inside Fume Hood working volume:	1220 mm W X 650 mm D X 1155 mm H
Bed size:	1220 mm W X 650 mm D

Lab 02: (Please refer to drawing of lab 02 and technical specification as mentioned above)

2.1 Work station (1800Lx1000Dx800H) : 6 Nos.

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking: 2 Nos. per work station.

3. Electrical Point: 4 Nos. at Each work station.
4. Data Point : 1 Nos. at Each work station
5. Voice Point : 1 Nos. at any work station
6. Adjustable Box: 2 Nos. per work station
7. Reagent Rack (1Tier 400mmD): 4 Nos. (2 nos. per work station)
8. Worktop: Granite (17-18mm).

2.2 Sink Unit (960Lx900Dx900H): 1 Nos.

1. Sink PP: 1 Nos.
2. Reagent Rack (1 Tier 400mmD): 1Nos.
3. One way water tap: 1 Nos.
4. Worktop: Granite (17-18mm).

Lab 03: (Please refer to drawing of lab 03 and technical specification as mentioned above)

3.1 Work station (1800Lx1000Dx800H) : 5 Nos.

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking: 2 Nos. per work station.
3. Electrical Point : 4 Nos. at Each work station.
4. Data Point: 1 Nos. at Each work station.
5. Voice Point : 1 Nos. at any work station
6. Adjustable Box: 2 Nos. per work station.
7. Reagent Rack (1Tier 400mmD): 2 nos. per work station.
8. Worktop: Granite (17-18mm).

Lab 04: (Please refer to drawing of lab 04 and technical specification as mentioned above)

4.1 Work station (1800Lx1000Dx800H) : 6 Nos.

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking : 2 Nos. per work station.
3. Electrical Point : 4 Nos. at Each work station
4. Data Point : 1 Nos. at Each work station
5. Voice Point : 1 Nos. at any work station
6. Reagent Rack (1Tier 400mmD): 6 Nos. (2 nos. per work station)
7. Adjustable Box: 2 Nos. per work station
8. Worktop: Granite (17-18mm).

4.2 Work station (1200Lx900Dx800H): 1 Nos. (Heavy Duty Table)

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking: 1 Nos. per work station.
3. Electrical Point : 2 Nos. at Each work station
1. Data Point : 1 Nos. at Each work station
2. Worktop: Granite (17-18mm).

4.3 Work station (1200Lx750Dx800H): 1 Nos.

1. Modules : 1D/2S (Each table have 1 modules of 600mmL)
2. Electrical Trunking : 1 Nos. per work station
3. Electrical Point : 2 Nos. at Each work station
4. Data Point : 1 Nos. at Each work station
5. Worktop: Granite (17-18mm).

Lab 05: (Please refer to drawing of lab 05 and technical specification as mentioned above)

5.1 Work station (1800Lx1000Dx800H): 2 Nos.

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking : 2 Nos. per work station
3. Electrical Point: 4 Nos. at Each work station.
4. Data Point : 1 Nos. at Each work station
5. Voice Point : 1 Nos. at any work station
6. Reagent Rack (2 Tier 400mmD): 1 nos. per work station
7. Worktop: Melamine (16-18mm) with 2 mm Anti-Static Sheet.

5.2 Work station (1800Lx1000Dx800H): 3 Nos.

1. Modules : 1D/2S (Each table have 2 modules of 600mmL)
2. Electrical Trunking : 2 Nos. per work station
3. Electrical Point: 4 Nos. at Each work station.
4. Data Point : 1 Nos. at Each work station
5. Voice Point : 1 Nos. at any work station
6. Reagent Rack (2 Tier 400mmD): 1 nos. per work station
7. Worktop: Granite (17-18mm).

Lab 06: (Please refer to drawing of lab 06 and technical specification as mentioned above)

6.1 Work station (4560Lx1200Dx800H): 1 Nos. (As per drawing)

1. Modules : 1D/2S (Each table have 3 modules of 600mmL)
2. Module : 1 Nos. (Sink Unit)
3. Electrical Trunking : 1Nos.
4. Electrical Point : 6 Nos.
5. Reagent Rack (1Tier 400mmD): 2 Nos.
6. Adjustable Box: 1 Nos. with electrical points.
7. Worktop : Granite (17-18mm).
8. Sink PP : 1 Nos.
9. One Way Water Tap : 1 Nos.

6.2 Work station (3660Lx900Dx800H) : 3 Nos.

1. Modules : 1D/2S (3 nos.)
2. Reagent Rack (2 Tier 120mmD): 4 Nos.
3. Electrical Point : 8 Nos.
4. Worktop : Granite (17-18mm).
5. Spot Extractor : 2 Nos.

6.3 Work station (2160Lx900Dx900H) : 1 Nos.

1. Modules : 1D/2S (Each table have 1 modules of 750mmL)
2. Worktop : Granite (17-18mm).
3. Spot extractor 1 no.
4. Electrical point 4 no.

6.4 Specification of Spot Extractor in Lab 06(work station): 02 Nos

- System Exhaust Arm: Ceiling Mounted 3 White joints, Reach: 1230 mm
- Transparent Hood: diameter 385 mm
- Centrifugal Blower (1 HP) with DOL Starter
- PP + FRP Ducting

6.5 Fume hood for general chemistry: 1 no. (Technical specification as mentioned above)

Overall Dimensions with base cabinet:	2700 mm W X 900 mm D X 2400 mm H
Fume Hood dimensions:	2700 mm W X 900 mm D X 1600 mm H
Base Cabinet dimensions:	1400 mm W X 540 mm D X 700 mm H
Inside Fume Hood working volume:	2420 mm W X 650 mm D X 1155 mm H
Bed size:	2420 mm W X 650 mm D

6.6 Walk in Fume hood for placing chemical reactors (No base cabinet, no work top) (Technical specification as mentioned above)

Overall Dimensions with base cabinet:	1500 mm W X 1000 mm D X 2400 mm H
Inside Fume Hood working volume:	1220 mm W X 750 mm D X 2000 mm H
Bed size:	1220 mm W X 750 mm D

6.7 Centrifugal blower and duct for both the Fume hood (technical specification as mentioned above)

Terms and Conditions:

1. Please find/see the drawing attached/given with tender notice, to understand the design and requirement as per specification given in our tender inquiry.
2. Please quote documents lab wise (as per drawing) as asked in the tender notice.
3. Maximum educational discounts should be applied, Please mention educational discount specifically.
4. Bidder must indicate freight, insurance and installation charges specifically, if applicable.
5. Evaluation will be done on the basis of technical specifications as well as mandatory criteria as mentioned above.
6. Financial bid will be open for those only who qualify all the mandatory criteria given above and technical specification as per our tender notice.
7. Please do mention tender number clearly on envelop.
8. Please send the name and contact details of the person to whom company had supplied a similar systems. Committee may ask for the feedback.
9. The supplier must have supplied systems to institutions of national and/or international repute.
10. Quotation must indicate FCA or FOB prices, if applicable.
11. Compulsory Payment terms & condition is 70% against delivery, 20% after installation and 10% after successful running of equipment for 3 months & approval (bidder must confirm the acceptance on payment terms).
12. Warranty/Guarantee should be clearly mentioned. The Warranty must start from the date of installation at IITK.
13. Installation, demonstration, and training-sessions at IIT Kanpur will have to be provided by the manufacturer or the vendor for the quoted system.
14. Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
15. Validity of quotation should be at least for 60 days.
16. Institute is exempted for partial custom duty (CD applicable to IIT Kanpur is 5.15%).
17. The delivery period should be specifically stated. Earlier delivery may be preferred.
18. At any time prior to the deadline for submission of bid, the Institute may, for any reason, at its own initiative, modify the bid document by amendments. Such amendments shall be uploaded on the website through corrigendum and shall form an integral part of bid document. The relevant clauses of the bid document shall be treated as amended accordingly. It shall be the sole responsibility of the prospective bidders to check the website from time to time for any amendment in the tender document. In case of failure to get the amendments, if any, the Institute shall not be responsible for it.

19. The Penalty @1% per week or part thereof subject to max 10% of the delivery price will be deducted from the balance payment, if supply is not completed within aforesaid delivery period.
20. 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.

Kindly send the quotation in sealed envelope latest by 5:00PM on 18/09/2017 to the following address;

To,
Dr Ashish,
Room No.310,
Samtel Centre for Display Technologies (SCDT), Indian Institute of Technology Kanpur,