

# Indian Institute of Technology Kanpur

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**Enquiry No: IITK/CHM/RA/2017-18/001**

**Last Date: April 4, 2018**

***Quotations in sealed envelopes are RE-INVITED***

For the procurement of **“Glove Box and Accessories including Pumps and Solvent Drying Units”** comprising the following specifications, addressed to

**Dr. Raja Angamuthu**  
**Department of Chemistry**  
**Indian Institute of Technology Kanpur**  
**Kanpur 208016**

**Glove Box Work Station with solvent purification system**

Material should be Stainless steel, US304

Bolted side panels for expansion.

Inside surface should be brushed finished.

Internal Dimensions 900-950mm x 1200-1250mm x 775-800mm [H x L x D]

2 Nos. of Glove ports, 220mm dia, should be polymeric type.

One pair of gloves as spare must be provided.

Glove box front should be a Polycarbonate window.

Additional coating for chemical and scratch resistance must have been performed.

One Dust filter of 0.3 micron (class H13) should be supplied.

Three Height Adjustable, Stainless Steel shelves should come with system.

Automatic Box pressure range should be from -15 mbar to +15 mbar

Positive pressure regulation without vacuum pump should be possible

Integrated with Non-oil over pressure safety system

Box be fitted with Water proof Foot pedal

Box should be fitted with 2 DN 40 feed through, one should be electrical.

Fluorescent lamp should be front mounted. With automatic cut off.

Stand, height 1000 mm, with castors and machine feet (height adjustable)

Glove Box should be integrated with heat exchanger

Cylindrical Antechamber of 390mm diameter and Length 600mm.

Material should be stainless steel, US 304, should be Brushed finish inside.

Fitted with one stainless steel Sliding tray, Spindle lock Type Door

Purifier must be a Single filter.

Attainable purity should be less than 1 ppm H<sub>2</sub>O and O<sub>2</sub>.

Removable capacity, oxygen minimum 35L and moisture minimum 1300 g.

Integrated circulation blower, Flow rate must be more than 85m<sup>3</sup>/hour.

Automatic Blower speed reduction/increase with oxygen or moisture levels.

Glove box should come with Rotary vane pump, dual stage type.

Vacuum pump should include Oil mist filter and Oil re-circulation and Automatic gas ballast control, Vacuum pumps speed should be 17m<sup>3</sup>/h.

Purifier should have a automatic PLC controlled regeneration program.

Antechamber -150 (D) x 400 (L) mm, Hinged doors, with sliding tray

Position should be 1/3rd inside and 2/3rd outside.

Solid state oxygen sensor, 0- 500 ppm range, PLC controlled via system control panel.

Refrigerator -35c with 3 stainless steel shelves should be fitted on left side.

Solvent adsorption system with 5kg activated carbon fitted with inline & bypass valves.

PLC Controller with Color Touch panel for operation of all Glove box functions.

Remote monitoring of glove box parameters such as oxygen, moisture, pressure levels.

System should send alerts and notifications of upcoming maintenance.

Solvent Purification system fitted with double purification columns (2 nos.).

Solvent reservoirs -min 15Litres (2 Nos.).

Independent regulator and gauges.

Glassware (2Nos) of 250 ml round bottom flask - NS 29/32 connection  
with ground neck + NS 14/23 opening with ground neck & PTFE cut-off cock.

Opening to draw solvents with a syringe, inner  $\varnothing$  10 mm with screw cap for septum plug;  
with PTFE cut-off cock. NS 14/23 opening with ground neck and PTFE cut-off cock on the  
bottom

Vacuum Pumps: an oil free diaphragm vacuum pump, 35l/min, ultimate vacuum 8mbar.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Raja' with a stylized flourish.

Raja Angamuthu