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IISER/PUR/PT/16/15

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(IFT)

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INVITATION FOR TENDER (IFT)

Sealed and super scribed **Two-Part** bids are invited for supply, installation and commission of the following equipments.

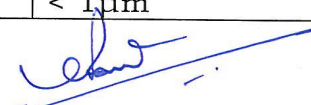
I. UHV CRYO FREE PROBE STATION -1 No.

- | | | |
|-------------------------------------|---|------------------------------------|
| 1. IFT No. | : | IISER/PUR/7200/15 |
| 2. DUE DATE | : | 21 st April 2016 [4 PM] |
| 3. DATE OF OPENING OF TECHNICAL BID | : | 22 nd April 2016 [3 PM] |
| 4. DATE OF OPENING OF PRICE BID | : | Will be notified later. |
| 5. COST OF TENDER# | : | Rs. 500 + 5% VAT |
| 6. EMD [BID SECURITY] ** | : | Rs. 3,00,000/- |

TECHNICAL SPECIFICATIONS OF UHV CRYO FREE PROBE STATION

The system should support a wide variety of characterization facilities such as DC I-V measurements with minimum current from pA level to fA level (order of maximum current is 100mA), C-V measurements as well as impedance spectroscopy, transient response, and related applications of the thin film nanoelectronic devices. All devices are mostly 2, 3, & 4-terminal configurations.

	Key Features	Specifications details
1	Order of vacuum	~ 10 ⁻⁵ Torr or better at room temperature
2	Working temperature range	~ 10K to 400K
	Temperature stability	< 0.2K with entire range
3	Number of probe arms with independent micro-manipulated probe movement	Six (6)
4	Clear viewing of the sample area and all probes	Sealed quartz window
5	Sample stage	Accommodate properly for the substrate size variation from 25mm × 25mm to 5mm × 5mm
6	Probing configurations	Triaxial, with adaptors to convert to coaxial feedthrough
7	Probe positioning	Manual with at least 25(X), 25(Y), 10(Z) in mm with ≤ 20μm increment
8	Sample vibration level	< 1μm



9	Compressor	Based on cryofree He
10	Leakage current of coax and triaxial probe	50 pA and 50 fA @100V respectively or better
11	Operational frequency of probes	Up to few GHz
12	Probe replacement	Without disconnecting the probe holder from its electrical feedthrough
13	40 Au-coated Tungsten tips	With radius 25 μm
14	40 Au-coated Tungsten tips	With radius 100 μm
15	Sample & probes viewing camera	A colored system with 5 μm resolution, including travel stages, CCD camera, and LCD monitor
16	Pneumatic vibration isolation table	At least 800 lbs or better with portable ultra-quiet air compressor
17	Compressor type	Low vibration compressor

General requirements:

- A metering flow control valve to introduce different gases into the vacuum chamber along with a gauge to monitor the pressure in the chamber.
- A Pump-line vibration isolator between the pump and the probe station.
- A suitable turbo molecular pumping station with mechanical or dry scroll backing pump.
- An automatic temperature controller also to be provided.
- Comprehensive warranty for 3 years.
- List of installation inside India.
- Installation with all essential accessories for standard operation and onsite training if needed.
- Hard copy of manual and CD

Optional requirements:

- AMC beyond 3 years
- Optical fiber feedthrough for light responsive devices
- Price for 5K to 400 K
- Upgrade to better vacuum say $>10^{-7}$ mBar
- Upgrade to pulsed tube to have lower vibrational level.



II. SUPPLY, INSTALLATION AND COMMISSIONING OF AUDIO AND VIDEO CLASS ROOM REQUIREMENT AT VITHURA CAMPUS

1. IFT No. : IISER/PUR/7238/15
2. DUE DATE : 21st April 2016 [4 PM]
3. DATE OF OPENING OF TECHNICAL BID : 22nd April 2016 [3 PM]
4. DATE OF OPENING OF PRICE BID : Will be notified later.
5. COST OF TENDER# : Rs. 500 + 5% VAT
6. EMD [BID SECURITY] ** : Rs. 1,30,000/-

***PRE-BID MEETING: 04TH APRIL 2016 AT 03:00 P.M at
*pratheeksha Building, IISER-TVM near CET
 Engineering college - Trivandrum*

Items Required

Items	Quantity
Writing cum interactive projection white board	4
Ultra-short throw interactive projector	5
55" LED screen	5
Multi-touch interactive display	2
200W 2-way indoor loud speaker	12
Dual Channel Power Amplifier	4
4 channel mixer	2
Lapel microphone, body pack transmitter and receiver	5
Handheld microphone and receiver	5
Console table with rack mountable monitor, keyboard and presentation system with touch panel	2
Console table with rack mountable monitor and keyboard	2

Deployment details

Title	Size	Items to be deployed
200 seat class room	L - 21m W - 9.5m H - 3m	<ul style="list-style-type: none"> - 20 x 6 ft white board - One Ultra-short throw interactive projector - Two 55" LED at the middle of the class room - One 55" LED at the middle of the class room in teacher view direction - 4 speakers and Power Amplifier - One lapel and one handheld microphones - Console table with presentation system near white board

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120 seat class room	L – 17.6 W – 6.6m H – 2.8m	<ul style="list-style-type: none"> - 20 x 6 ft white board - One Ultra-short throw interactive projector - Two 55" LED at the middle of the class room - 4 speakers and Power Amplifier - One lapel and one handheld microphones - Console table with presentation system near white board
60 seat class room	L – 7.85 W – 9.9m H – 3m	<ul style="list-style-type: none"> - 20 x 6 ft white board - One Ultra-short throw interactive projector - 2 speakers and Power Amplifier - One lapel and one handheld microphones - Console table near white board
55 seat computer lab	L – 16.4m W – 7.3m H – 2.75m	<ul style="list-style-type: none"> - 20 x 6 ft white board - One Ultra-short throw interactive projector - 2 speakers and Power Amplifier - One lapel and one handheld microphones - Console table near white board
Discussion room	-	<ul style="list-style-type: none"> - One multi touch interactive display
Discussion room	-	<ul style="list-style-type: none"> - One multi touch interactive display

Writing cum interactive projection white board Specifications

- 20ft x 6ft P3 ceramic matt-finish writing cum projection white board
- Should be suitable for both interactive projection and writing
- Dry erasable
- Should be able to write using marker, pen or crayon
- No ghosting after erase
- Scratch, bacteria, chemical and fire resistant
- Recyclable
- ISO Certified

Ultra-short throw Interactive Projector Specifications

Type – Ultra short throw interactive projector

Screen size – 100" to 120" measured diagonally, 120" preferred

Resolution – 1280x800

Display system – 3LCD system

Lamp replacement time (lamp mode : high)– 3000 hours

Colour Light output (lamp mode : high) – 3100 ANSI Lumens

Contrast ratio – 3000:1

Input – Input A: VGA, Input B : VGA, Input C : HDMI

Network presentation - Projection from networked PC or mobile device should be possible

Other Items – Wireless LAN module, dual interactive pen device

Functionality – PC Free interactive mode, Desktop annotation, White board

Approved Brands - Sony/Epson/NEC

55" LED Screen Specifications

Screen Size - 55" measured diagonally

Screen Type – LED backlit

Resolution - 1920 x 1080

Aspect Ratio – 16:9

Contrast Ratio – 5000:1

Connectivity Input - VGA, DVI-D, HDMI, Stereo mini Jack

Connectivity Output - Stereo Mini Jack

Approved Brands – SONY/SAMSUNG/Panasonic/LG

Multi touch interactive display specifications

Display – 65" to 70" LED backlit interactive multi touch

Resolution - 1920x1080

Contrast - 3000:1

Wireless touch pen - 2 per display with function button

Input - VGA, HDMI, 3.5mm stereo jack

Output - VGA/HDMI/DisplayPort and 3.5mm stereo jack

Other connectors - 2 x Type A USB, 10/100/1000 Base-Tx

Speaker output - 40W (minimum 2 speakers)

Accessories - AC power cord INDIAN type, remote control unit, and eraser

Built-in PC – Compact PC attaches to the rear of the display with i5 processor

Mounting stand – Floor stand cum cable manager with power strip and pen holder

Functionality -

- The screen should act as a whiteboard
- At least two people should be able to write on the screen at the same time using touch pens or fingers
- Separate eraser which can erase any part of the screen
- Each touch pen should have its own menu
- Colour and line thickness of the touch pens should be configurable
- Onscreen handwriting to standard text feature should be present
- The screen should be protected using anti-glare film
- Onscreen content should be visible simultaneously on laptops, tablets and smartphones though a wireless LAN
- At least 20 mobile devices should be able to connect to the display simultaneously
- Mobile users should be able to save on screen content to their devices

Approved Brands - Sharp/NEC/Panasonic

200W 2-way indoor loud speaker specifications

Power capacity - 200W continuous/400W program/800W peak

Nominal Impedance - 8 Ω

Sensitivity 1W/1m - 94 dB



Maximum SPL/1m - 118 dB
Coverage Pattern (H x V) - 90° x 50°
Input connections - 4-pin Phoenix/ Dual Neutrik NL4MP connectors
Enclosure - High impact polymer
Grille - Powder coated perforated steel
Mounting arm - Integrated heavy-duty Wall/Ceiling Mount bracket
Approved Brands - EV/JBL/ALTO

Dual Channel Power Amplifier specifications

Continuous Rated Power at 1KHz per channel - 270W at 8Ω, 450W at 4Ω
Amplifier gain - 32dB
Frequency response - 20 Hz - 40 kHz
Impedance - 8/4 Ω
Amplifier Protection - Audio limiters; over-temperature detection
Load Protection - Start-up/shutdown transients; dc fault; Low ac line voltage; nonlinear signal limiters
Cooling System - Airflow fans
Front-Panel Indicators - LEDs indicating signal present and limiter on, protect indicator and power on per channel
Input connections - 2 x 3-pin female XLR
Output - 2 x Neutrik Speakon NL4MP
Operating Voltage - 230V, 50Hz
Approved Brands - EV/CROWN/ YAMAHA

4 Channel Mixer specifications

Type - Analog
Channels - 4
Inputs Mic Preamps - 2 x XLR
Outputs Main - 2 x XLR/2 x ¼”
Headphones - 1 x ¼”
Phantom power - 2
EQ bands - 2 band EQ
Approved Brands - Mackie/Behringer/Allen&Heath

Lapel microphone, bodypack transmitter and receiver specifications System

Type - UHF Lavalier Microphone
Dynamic Range - Greater than 95dB
Frequency Response - 80 Hz – 18 kHz +- 2dB
Signal-to-Noise Ratio - Greater than 100dB
Number of channels - 32 preset channels
Bodypack Transmitter
Type of input connector - TA4
Mute switch - On/Off, Set, Up, Down, Sync
Back Lit LCD Display - To display Battery level, channel, Frequency,
Mute
Microphone Head - Cardioid Dynamic
Standard Lavalier Microphone - Uni-Directional Condenser
Power Requirement - Two AA batteries
Receiver
Frequency Range (RF) - 618 MHz - 806MHz
Modulation - +- 40KHz
Diversity - True Antenna
Type of output - 1/4 inch unbalanced, 3-pin XLR balanced



Display - Backlit LCD

Chassis - Metal

Approved Brands - EV/Shure/Sennheiser

Handheld microphone and receiver specifications
System

Type - UHF Handheld

Dynamic Range - Greater than 95dB

Frequency Response - 80 Hz - 18 kHz +- 2dB

Signal-to-Noise Ratio - Greater than 100dB

Number of channels - 32 preset channels

Transmitter

Type of microphone - Dynamic capsule

Polar pattern - Cardioid

Mute switch - On/Off, Set, Up, Down, Sync

Back Lit LCD Display - To display Battery level, channel, Frequency, Mute

Power Requirement - Two AA batteries

Case material - Rugged metal

Receiver

Frequency Range (RF) - 618 MHz - 806MHz

Modulation - +- 40KHz

Diversity - True Antenna

Type of output - 1/4 inch unbalanced, 3-pin XLR balanced

Display - Backlit LCD

Chassis - Metal

Approved Brands - EV/Shure/Sennheiser

17" Rackmount TFT LCD monitor specifications

Form Factor - 1U 17" Rackmount TFT LCD monitor keyboard drawer with touchpad

Signal Input - VGA and DVI-D

Resolution - 1920 x 1080

Keyboard and Pointing device - 104-key keyboard with touchpad

Power input - 100 to 240VAC, 50/60Hz

Approved brands - SAMSUNG/Panasonic/LG

Presentation System and touch panel specifications

Presentation System -

- Control processor
- Matrix signal routing for 6 video sources (4 HDMI, 2 VGA) and 4 displays
- 4 HDMI effective output
- Auto detection and auto switching of input
- 4 channel microphone mixer
- audio DSP
- should be configurable using a touch screen console

Flipup Touch Screen Console -



- Fully customizable user interface for selecting presentation sources, destinations, and for adjusting audio levels
- Colour LCD display
- Configurable connection compartment with cable retractors(VGA, HDMI, Audio, Gigabit Ethernet and USB) and Indian type 3 pin power outlet
- Flush tabletop mounting

Approved brands - CRESTRON/Extron/AMX

Console Table specifications

- BWR 16mm ISI plywood with American cherry lamination
- High quality stainless steel rails for drawers
- Magnetic lock on the CPU door
- 19mm x 25mm thread quarter turn cam lock at the split door
- Magnetic door for power strip/cable compartment
- Power sockets to be provided for connecting all the devices as indicated in the diagram
- Install the devices as indicated in the diagram
- The CPU will be provided by IISER Thiruvananthapuram
- The flip up touch panel to be configured to control class room elements
- Video source and destination should be selectable
- Audio level of the class room should be adjustable from touch panel
- Cable retractors need to be connected appropriately
- The offer should include console table drawing with dimensions
- Indicative diagram of console table is given in Appendix G

Other Conditions

- The specifications provided are the minimum required
- All components except writing cum projection board should carry 3 Year onsite warranty and 4th and 5th year onsite warranty price to be quoted separately
- Installation and testing should be done at IISER Vithura campus as per the deployment details and as required by IISERTVM staff
- VGA/HDMI cables and video distributor should be of Kramer/ Extron/ Crestron make
- IISER Thiruvananthapuram will provide input power points for projector, LED panels, wireless receivers and Console table
- Wireless mic receivers should be installed on the wall in the middle of the class room on both sides
- Interactive projector, audio system and LED displays should be wired to the console table
- When the interactive projector is under use, everything that appear on the projected screen including interactive output should get copied to the two LED screens in the class room
- HDMI over Ethernet convertors requiring no power adaptors should be used to carry HDMI signals when the length is more than 15m



- The LED displays should be ceiling mounted as suggested by IISERTVM staff
- Other components and cables required should be supplied and installed as a part of installation charges
- Training on the entire setup should be provided to IISER staff
- Product brochures of all components should be attached without which the offer is liable for rejection
- Product compliance sheet should be filled and submitted along with the offer as per Appendix A
- Price bid should be submitted as per Appendix B
- In Appendix A and Appendix B, vendor can list sub items as required
- Room diagrams with indicative device positioning are provided as Appendix C, Appendix D, Appendix E and Appendix F
- Site visit will be arranged and published at http://www.iisertvm.ac.in/tenders/active_tenders.php

Appendix A

Product compliance sheet

SlNo	Items Required	Items Offered		
	Title	Title	Brand	Product ID(s)
1	Writing cum interactive projection white board			
2	Ultra-short throw interactive projector			
3	55" LED screen			
4	Multi-touch interactive display			
5	200W 2-way indoor loud speaker			
6	Dual Channel Power Amplifier			
7	4 Channel Mixer			
8	Lapel microphone, body pack transmitter and receiver			
9	Handheld microphone and receiver			
10	1U 17" Rackmount TFT LCD monitor keyboard drawer with touchpad			
11	Presentation System with touch panel and accessories			
12	Classroom console table			



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Appendix B**Price Bid Format**

SlNo	Item	Qty	Unit Price	Total Price	Tax %	Tax	Total
1	Writing cum interactive projection white board	4					
2	Ultra-short throw interactive projector	5					
3	55" LED screen	5					
4	Multi-touch interactive display	2					
5	200W 2-way indoor loud speaker	12					
6	Dual Channel Power Amplifier	4					
7	4 Channel Mixer	2					
8	Lapel microphone, body pack transmitter and receiver	5					
9	Handheld microphone and receiver	5					
10	1U 17" Rackmount TFT LCD monitor keyboard drawer with touchpad	4					
11	Presentation System with touch panel and accessories	2					
12	Classroom console table	4					
13	Installation Charges	-					
Grand Total							



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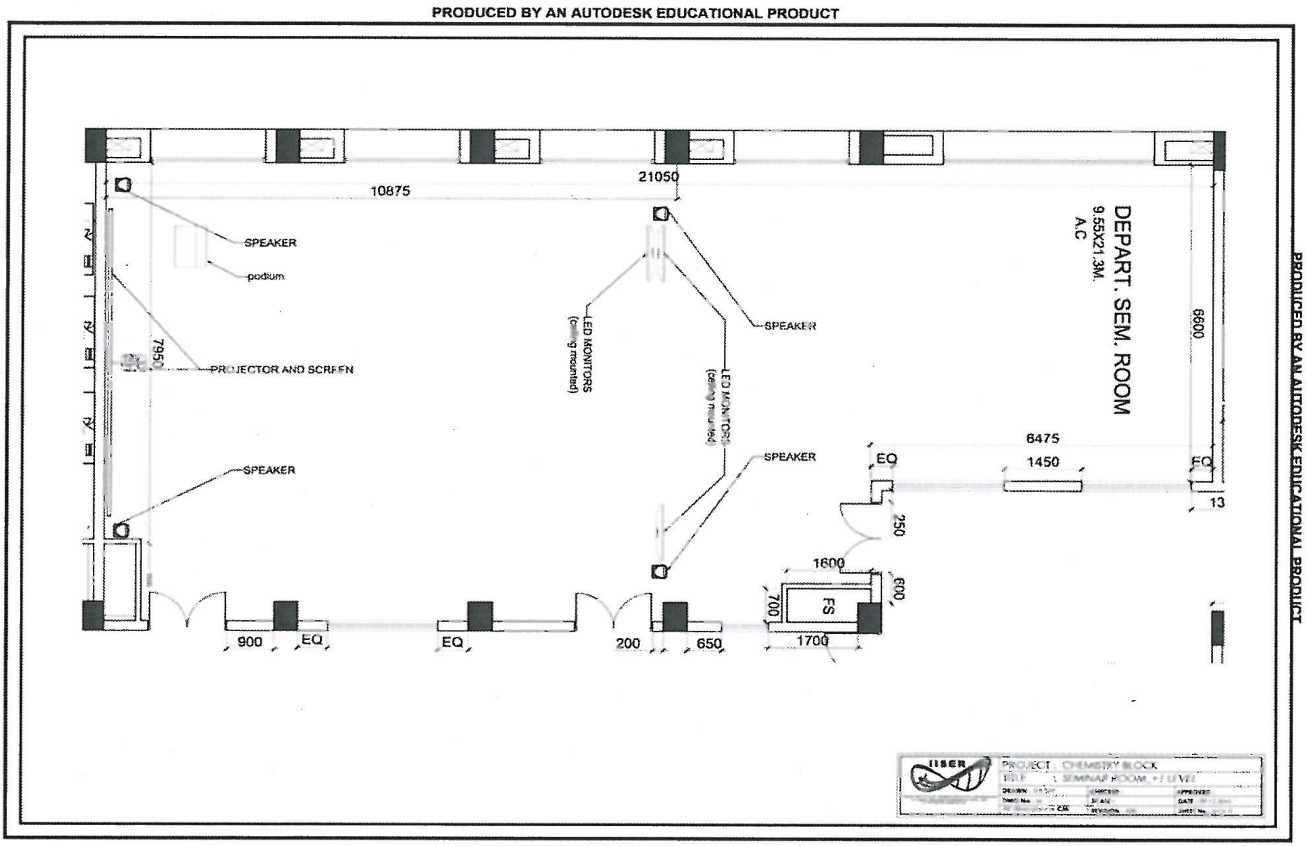
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Appendix C

200 seat class room

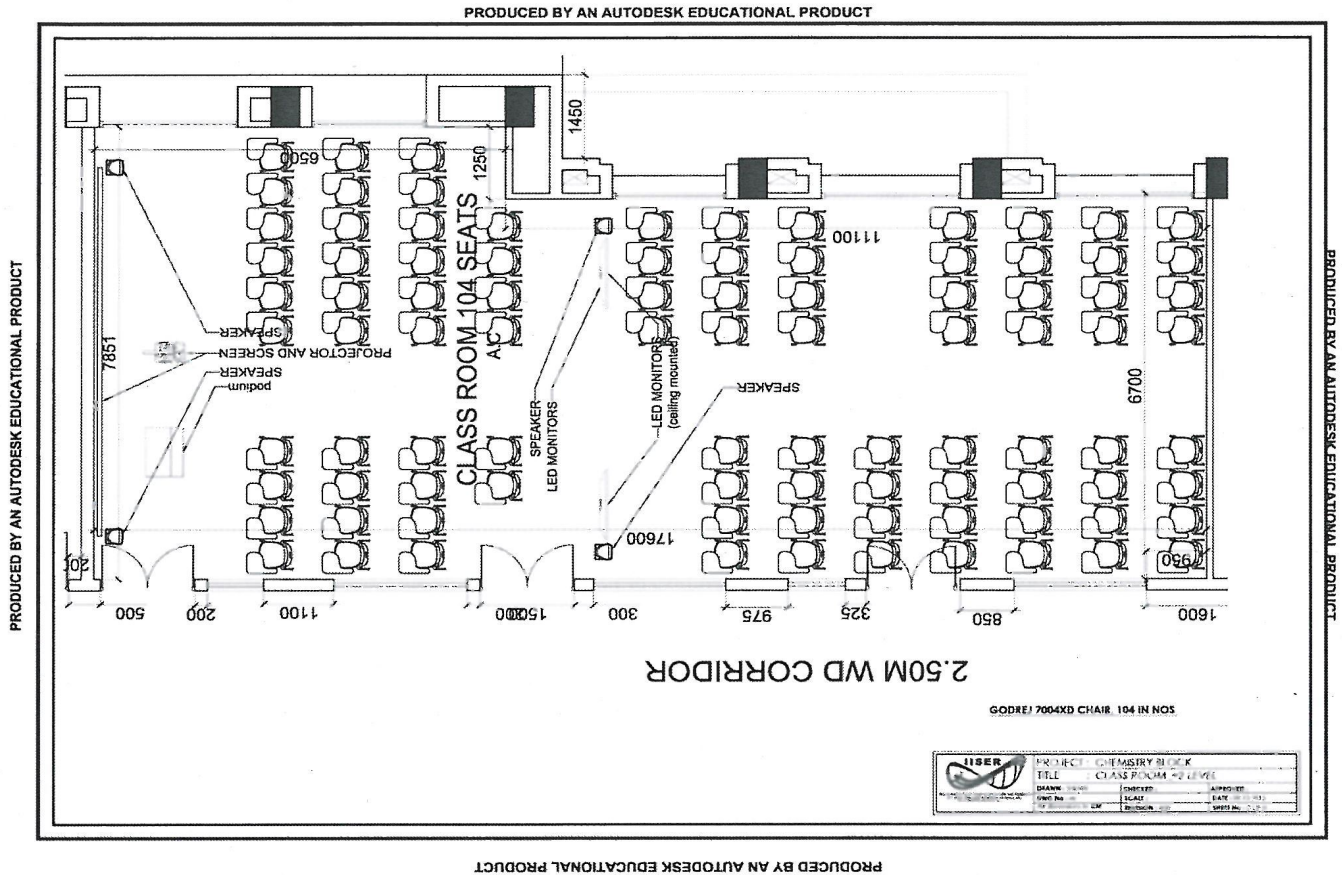


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Appendix D

120 seat class room



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