

## List of items likely to be procured in the next 3-5 years (updated till 21-05-2026)

### Note:

**A. This list may change from time to time depending on project requirements.**

**B. Detailed specifications will be available at the time of raising the indent.**

1. AMC of CAD software – Solidworks Premium
2. AMC of the IPR Virtual Reality facility
3. Supply of spares for the machinery components, such as sensors and actuator systems
4. Supply of Replacement motors, gears, drives, etc.
5. Supply of Replacement Control System components – PLCs, servo drives, etc.
6. Supply of robotic systems consumables for RH lab development
7. Supply of Consumables for RH systems operations and testing – cables, communication connectors, etc
8. Supply, Installation, Testing and Commissioning of Intelligent Analog Addressable
9. Fire Alarm and Detection System
10. Automated External Defibrillator (AED)
11. Fire Fighting Equipment
12. Safety Equipment
13. Personal Protective Equipment
14. Cold box of helium plant
15. Cold box of cold circulator/pump/compressor
16. Cold box for heat exchanger test bed and turbine test bed.
17. Cryostat for different applications.
18. Cryogenic valve box, custom cryogenic system, vacuum duct
19. Cryocooler with accessories
20. Cold circulator/pumps
21. Cold compressor
22. Turbines of helium plant
23. Turbines controllers and accessories
24. Spares and spare parts for turbines, controllers and accessories
25. Different type of cryogenic and room temp. heat exchangers (plate fin, finned tube, tube in tube, shell and tube, etc.).
26. Fitting and mounting accessories
27. Atmospheric vaporiser/heater
28. Thermal Shields
29. Compressor and oil removal system for He, N<sub>2</sub>, air, R410A, NH<sub>3</sub>, etc.
30. Vacuum screw compressor for helium gas, nitrogen gas, etc.
31. Compressor cooling and ventilation system using water or air
32. High Pressure Helium recovery compressor
33. Spares parts for different type of compressors and oil removal systems
34. Compressor Oil of different grades (Breox, Rotextra, etc.)
35. VFD, soft-starter, thermistor block for electrical heaters, contactors, phase relay, overload relay etc.
36. Coalescer Filter Cartridge.
37. Different adsorbents and filtration media: Charcoal, silica gel, molecular sieves, SS wire mesh, glass fibre filters, sintered metal, etc..
38. Alumina for air compressor dryer etc.
39. TMP (turbo-molecular vacuum pump)
40. Cryopump and cryosorption cryopump , Adhesive for charcoal
41. Cryo-absorber and their parts
42. Different type of vacuum pumps(Rotary pumps, root-rotary vacuum pumps, roots vacuum pumps, etc. )
43. Diffusion pump
44. Scroll pump
45. Pumps for different type of gases (room temp and cryogenic temp.)
46. Ceramic vacuum break, bellows, house
47. Vacuum Gauges and controller of different types
48. Vacuum Fitting and Vacuum valves

49. Vacuum Chamber
50. Air blowers and pumps
51. Analog Gauges and Dial Gauges with display units
52. Cryogenic long stem valves of various sizes (EP type, manual type, vapor vent valves, NRV, etc)
53. Safety valves for various applications
54. Room temperature valve of various sizes ((EP type, manual type, NRV, etc)
55. Solenoid valves
56. Burst disc
57. High pressure and medium pressure hand valves and E/P valves
58. Needle valves
59. Long Stem Hand Valve for LN<sub>2</sub> Operation
60. LHe, LN<sub>2</sub>, etc.
61. LHe Dewar, LN<sub>2</sub> Dewar
62. LN<sub>2</sub> tanks
63. Different type of gases: He, N<sub>2</sub>, Ar, zero air, H<sub>2</sub>, etc.
64. LHe transfer siphon
65. Gas storage tanks
66. Concrete base construction work for helium storage tanks and pipe layout work
67. Gas regulator
68. Gas chromatographs
69. Gas impurity Analyzer
70. Spares of gas chromatographs
71. Calibration gas for gas chromatographs
72. Helium MSLD, portable leak detectors
73. MLI and MLI adhesive tapes
74. Transfer lines (cryogenic and room temperature, with thermal shield and vacuum jacketed) for helium, nitrogen, etc.
75. copper rods
76. Cryogenic transfer lines (with shield & vacuum jacketed)
77. Pipes cutting machine with accessories
78. Different type of insulating materials: G10, G11CR, stycast, S-glass, E-glass, nitrile rubber, glass wool, PUF, perlite, etc.
79. pipe (seamless and welded type) and tubes and its fittings
80. of austenitic steel.
81. Plates, tubes, pipes, rods, braids and sheets of normal Copper, OFHC and OFE copper
82. Flexible hoses, bellows for cryogenic and room temperature application.
83. Different type of structural material: SS, MS, CS, etc.
84. Painting material of MS and CS structures.
85. Pipe layout work.
86. Epoxy Resin, insulation (S-glass, E-glass etc)
87. Consumables for Mechanical devices and fittings
88. Dissimilar Metal Joints.
89. High-Pressure Flexible Bellows of Various Sizes
90. Ferrules and Push-Fit Connections of Various Sizes
91. Different sealing items: Gaskets of Al, Cu etc., O-rings/gaskets of Viton, neoprene, soft iron, Al, Cu, helicoflex metal seal, etc.
92. Welding and brazing machine with accessories
93. Blower (Air, helium N<sub>2</sub>) with magnetic bearing or with normal bearing
94. Overhead Cranes.
95. Cryo Plant Development Supporting Devices
96. Water cooler
97. Tachie tapes- for sealing of leaks.
98. Feed through - different types
99. Spares for PLC Panel, Process instrumentation (pressure, temperature, diff. Pressure), Valves, valve positioner, maintenance/ repair kit of valves, Analyser, Water flow switch, dew point, transmitter, etc.
100. Phase separator & it's components

101. Fabrication work of MS/CS platform and different support structures
102. Welding works / bronzing
103. Maintenance (Comprehensive, preventive, AMC, etc) of various LAB devices (UPS, Gas Chromatographs, compressors, etc.
104. Maintenance for Hydraulic clamp, vacuum pump, TMP controller, Gate valves, overhead cranes, etc.
105. Pressure (Hydro or pneumatic) Test of storage tanks (for different Gases, LN2, LHe), gas Cylinders, safety equipments (safety valves, burst discs, etc.).
106. CCOE/PESO approvals for different storage tanks
107. Nuclear radiation test on different samples.
108. Repairing / Up-gradation of LN2 Lines, Phase separators.
109. Break-down maintenance with consumable of recovery/ air compressor / Helium compressor / Helium Plants/ Cryogenic subsystems etc.
110. Maintenance for heat exchangers
111. Calibrated and uncalibrated temperature sensor for application in room temperature and cryogenic temperature: Silicon diode type, Cernox type, FBG type, Pt resistor type,
112. thermal sensor type,
113. Dew point meter
114. Temperature sensor monitor.
115. Power meters, energy meters
116. Pressure transmitter.
117. Differential pressure transmitter.
118. LHe level sensor
119. Electrical clamp meter and generator
120. Cables of different size for electrical, instrumentation (shielded, un-shielded), control, Ethernet, etc.
121. HMI panels, Ethernet switch, cables and their accessories etc.
122. PLC, PLC programming software and their spares (modules, cables, battery, relay modules, pre-wired distribution modules, etc.)
123. HART communicator with accessories
124. PLC Panels
125. DAQ, accessories such as signal cables, vacuum feed-through, sensors, etc.
126. Electrical cables and instrument wires
127. PLC
128. Different type of flow meters (Coriolis, orifice, venture, thermal, electromagnetic, etc)
129. Manganin Wire (24 SWG) for LHe Level Sensor
130. Teflon Wire, Electrical Insulation Wires, and Ethernet Cables
131. Cables/wires of different size for electrical, instrumentation (shielded, un-shielded), Ethernet, etc.
132. In-house developed temp sensors, monitors, Mass flow meters, LHe level sensors, Improvement and finishing items - Enclosures, PCBs, ele components.
133. DPT/PT/Temperature sensors calibrator with accessories, including precision sensors.
134. Electronics Integrated chip (IC).
135. Electrical consumable of Air-compressor, recovery compressor.
136. UPS
137. Batteries for UPS
138. Electrical General consumables
139. Procurement of 3 nos. of MCCB 630 A for Helium Compressor
140. Earth Pit Installation work
141. Electrical Panel
142. HMI panels
143. Procurement of Electrical Heaters, controller, spares, accessories etc.
144. Electrical distribution panel.
145. Consumables for electrical
146. Earth Pit Installation
147. Sound level meter
148. camera and tools
149. Laboratory Furniture such as Chairs and Almira
150. Oscilloscope and Precision Millimetres
151. CRO (Cathode Ray Oscilloscope)
152. CMM(Coordinate measuring machine)

153. Balancing machines for rotating parts for turbines and other rotating machineries
154. Safety Equipment: Cryogenic Safety Equipment, Safety Belts, Safety Shoes, Helmets
155. Control Room for Operation Control and Operation DESK
156. Clean Room
157. CCTV Camera System .
158. Miscellaneous mechanical tools, electronics tools, etc. for lab application.
159. Normal and Industrial category Computer, server, monitors, projectors,
160. Printer and cartridges, toners, etc.
161. Plant Analysis software (Aspentech, ecosimPro, etc.)
162. HART communication software
163. SCADA Programming software, Ethernet switch, cables and their accessories etc.
164. HMI - small and big - software
165. Software for process automation, instrumentation sizing, etc.
166. Control cables
167. Power cables
168. Signal cables
169. Electrical switch gear
170. power contactor
171. MCCB/ELCB/RCCB/MCB
172. Circuit breaker
173. SS pipe and pipe fittings.
174. SS ball valves
175. Tube fittings
176. Braided hose pipe
177. Pressure gauges
178. SS Allen head nut bolt
179. SS hex head nut bolts
180. SS double ferrule fitting
181. Hydraulic oil
182. Establishment of water distribution lines
183. Fabrication of safety enclosure
184. Procurement of vacuum items viz flanges, gaskets, gate valves, gauges.
185. Residual gas analyzer
186. Gas flowmeter
187. Differential pressure transmitter
188. LN2 Dewar
189. Repair of Heater bank
190. High Temperature Bellow Sealed Valve
191. Pure Lithium Material
192. Oxygen Trapper & Indicator
193. Wire Heaters
194. Jacket Heaters
195. Pedestal fan
196. Wall mounting fan
197. Mechanical Toolbox and spanner set
198. Storage Cabinet for PPE kit and safety items
  
199. Data logger
200. PXIe controller/cards
201. Differential measurement probe
202. PLC modules/controller
203. HMI
204. Electrical Repair and maintenance
205. X-ray area monitor detector unit/ tube/ GM counter
206. UPS
207. UPS battery

208. UPS repairing  
209. Power/voltage stabilizer  
210. power/control transformer  
211. feed-through Electrical/BNC/Thermocouple  
212. Optical fiber cable for pyrometer  
213. color pyrometer  
214. Infrared camera  
215. ZnSe viewport  
216. Lead glass  
217. Calibration of OMNISCAN MX machine  
218. Calibration services for thermal diagnostics (IR camera, 1 and 2 color pyrometer)  
219. Probes for Nondestructive testing (Ultrasonic testing and Eddy current testing)  
220. Dye penetration kit (Penetrant, Developer, Cleaner)  
221. Ceramic connectors for K-type thermocouples  
222. Ceramic bids  
223. Plastic connector for K-type thermocouple  
224. Maintenance AND Spares for workstation  
225. Spares for Cavity Blackbody  
226. Spares for thermal diagnostics (IR camera, 1 and 2 color pyrometer)  
227. Butane torch  
228. Handheld Infrared gun  
229. Temperature sensors (Thermocouples, Resistance Temperature Detector (RTD))  
230. Multimeter  
231. Clamp meter  
232. Earth resistance measurement meter  
233. Television/Monitor  
234. Helium Leak Detector.  
235. Standard leaks  
236. Vacuum Item CF type (Cross, I, Blank flange, rotatable flange etc..)  
237. Auto Transformer  
238. Variac  
239. Vacuum gate valve HV type  
240. Printer  
241. Scanner  
242. Copper/Aluminum gasket 300CF, 200CF  
243. Viton O-ring, bush for furnace and D chamber  
244. Flow Switch  
245. Pressure Switch  
246. Thermocouple bare wire.  
247. Vacuum Grease  
248. Vacuum pump oil  
249. Graphite foil  
250. Vacuum brazing furnace brake down maintenance & Spare.  
251. Needle valve  
252. Dual stage pressure regulator  
253. Wire type thermocouple  
254. Safety face mask  
255. Chemical hand gloves  
256. DOL Starter  
257. 1/3 phase Motors/pumps  
258. Almirah  
259. metal storage rack  
260. storage cabinet  
261. PU tube and PU fitting  
262. Rupture disk  
263. Calibration services  
264. K-type thermocouple wires  
265. Diffusion pump oil

266. Rotary pump oil
267. Pressure Gauge
268. Hydraulic pump oil
269. Bench Vise
270. Hand drill
271. Pneumatic solenoid valves
272. Vacuum gauge
273. Rotary pump
274. Mass flow controller
275. Safety Shoes
276. GM Counter
277. Spares for Workstation
278. Blackbody cavity
279. Spares and consumables for Laser Flash system
280. Spares and consumables for magnetron sputtering system
281. Spares and consumables for metallographic equipment
282. TC1200 Electronic drive unit for HiPace 2300 Turbomolecular pump
283. Disposable shoe covers
284. Calibration of various instruments from certified agencies
285. Brazing filler
286. Diamond paste for polishing
287. Emery paper
288. Digital Vernier Caliper & Micrometer Screw Gauge
289. Capacitor for Laser Flash System
290. Laser rod
291. Graphite Spray & Carbon Paper
292. Xenon Flash lamp
293. Servicing of Laser flash lamp
294. Breakdown service for Magnetron sputtering
295. Spare parts for magnetron sputtering unit
296. Coolant for cutting machine
297. Diamond blade for cutting machine
298. Abrasive blade for Cutting machine
  
299. Mold release spray
300. Plastic Boxes and Plastic Zip Zag Bags
301. List of Items for Capacity Building Project of Divertor & First Wall System for SST-Bharat
302. Fabrication of Outer Vertical Target (OVT)
303. Fabrication of Inner Vertical Target (IVT)
304. Fabrication of Dome and Reflector Plate
305. Fabrication of First Wall
306. Fabrication of support structure
307. Fabrication of Masks and fixtures
308. Procurement of Digital equipments viz. scanner, printer, barcode reader & printer
309. Up gradation of High Pressure High Temperature Water Circulation System (HPHT-WCS) with existing Water Polishing Unit (WPU)
310. Up gradation of thermal diagnostics: IR camera, pyrometers, IR view port glasses.
311. Up gradation of NDT facilities: Ultrasonic system and Eddy current system.
312. Hot Radial Press (HRP) system.
313. X-ray flat panel detector
314. Hot helium leak test facility
315. Pressure test setup
316. Vacuum Brazing Furnace
317. CIVA simulation software
318. Workstation
319. CCTV systems & CAMC CCTV
320. Wireless Hand-Held Radio Sets

321.RFID based Boom Barriers  
322.Binoculars  
323.Trunstile  
324.Card Reader  
325.Door Access Controller  
326.Door Frame Metal Detector with battery Back-up  
327.X-ray screening system  
328.Watch Towers  
329.Dragon Light  
330.High Volume Alram System  
331.Hand Held Metal Detector  
332.Installation charges etc.  
333.Atta Maker  
334.Double Door Fridge  
335.SS two Door Vertical Fridge  
336.Dosa Tava  
337.Veg Processor  
338.Potato Pillar  
339.Active and passive electronic components  
340.FPGA, SBC (Single Board Computer)  
341.DSP and microcontroller integrated circuits  
342.Customized Electronics system for Plasma Diagnostics  
343.Cables and connectors  
344.Power supply  
345.Function generator  
346.Oscilloscope  
347.Enclosure/Rack for electronics systems  
348.Isolation Transformer  
349.Soldering station  
350.Multimeter  
351.PCBs (Printed Circuit Boards)  
352.UHP/Industrial grade Process gases (He, H<sub>2</sub>, O<sub>2</sub>,N<sub>2</sub>,Co<sub>2</sub> Ar, Deuterium, calibration gases,etc  
353.High temperature bellow sealed ON/OFF valves  
354.Radar level sensor for molten Pb-Li  
355.Pb-Li to Air heat exchanger  
356.Fabrication of permanent magnet based magnetic field source  
357.Data Logger  
358.Power Supplies and control equipment  
359.VFD Control panel  
360.Desktop/Workstations/digital monitor etc.  
361.Various Type of Electrical Heaters  
362.Power Cables for VFD applications  
363.Pb-16L eutectic alloy  
364.Mass flow indicator and controller for gaseous medium  
365.Pure Pb and Li material  
366.High temperature diaphragm type Pressure transmitter  
367.Pressure sensor for gaseous medium  
368.Air blower  
369.Fabrication of test mock ups for MHD and EHCL experimental facilities  
370.Rare earth magnets (NdFeB/SmCo)  
371.Differential pressure transmitter for gaseous medium  
372.Cerawool/silica based high temperature thermal insulation  
373.Fabrication of Pb-Li to Helium heat exchanger  
374.CCTV camera  
375.Humidifier /Dew point generator  
376.Gas chromatograph  
377.Cupboards/Almirah  
378.Pd-Ag membrane Module

- 379. Zirconium Cobalt/similar hydrogen isotope getter material
- 380. Pure Iron Foils
- 381. SS tubes/ pipes
- 382. Various types of SS connectors
- 383. Valves for gaseous medium
- 384. Various types of cables and connectors
- 385. Temperature control panel
- 386. Hydrogen sensor
- 387.
- 388. Dew point transmitter (dew point meter)
- 389. Magnesium Powder
- 390. Vacuum pump and gauges
- 391. Tool Trolley
- 392. Cylinder trolley
- 393. Thermocouples
- 394. Instrumentation/signal Cables
- 395. Electrical Connectors
- 396. UPS Batteries
- 397. Chemicals, Li<sub>2</sub>CO<sub>3</sub>, TiO<sub>2</sub>, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, LiOH and other process chemicals
- 398. Austenitic stainless steel plates (SS316/316L, SS304/304L etc)
  
- 399. Filler wire consumables, Metal Powders: RAFMS, W, Cr, Fe etc and ODS Powders
- 400. LVDT, Thermocouples, heaters, Quartz rod, quartz tube and other consumables
- 401. Customized spare parts and testing specimens
- 402. Lab Consumables + miscellaneous (Glass wares, Alumina crucibles, etc) + computer consumables
- 403. Heaters, RTD, thermocouples, pipes, insulation, sensors, valves, pressure gauges and setup fabrication raw material
- 404. X-Ray Fluorescence (XRF)
- 405. Moisture generator/humidifier/hygrometer
- 406. Thermal desorption spectroscopy
- 407. Laboratory Glassware Washer & Dryer
- 408. Softwares: Thermo-calc Dictra, Abaqus, AKTS Thermokinetics, JMatPro, Origin etc
- 409. Laboratory furniture
- 410. Air purifier, hot plate, stirrers, die punch, UPS
- 411. Arc melting furnace
- 412. Vacuum Induction melting furnace
- 413. Gas Atomizer
- 414. Rolling Mill
- 415. Uniaxial Vacuum Hot Press
- 416. Residual stress Analyser
- 417. Portable Hardness testing system
- 418. Handheld XRF PMI analyzer
- 419. Upright Optical Microscope
- 420. Electro polishing machine
- 421. EBSD for SEM
- 422. Upgrade of Hardness Testing machine
- 423. Small Punch set-up
- 424. Induction Heating System
- 425. Joule heating system
- 426. Expansion Joints
- 427. Water Chillers
- 428. Fabrication of Helium cooled mock-ups
- 429. Rate contract manpower works
- 430. Repair of helium compressor
- 431. Spring supports
- 432. Miscellaneous items like flanges, pipe, pipe fittings
- 433. Upgradation of Turbo-Circulator control system

434. Coriolis Mass flow meters  
435. Mass flow controller  
436. Instrument calibrator  
437. Pressure transmitters  
438. Temperature transmitters  
439. Manifold valves  
440. Tubing's and fittings  
441. PLC I/O Modules  
442. PLC interface modules  
443. Rotameter  
444. PID Controller  
445. Multimeter  
446. Pressure Gauges  
447. Solenoid valves  
448. Proximity switches  
449. Tube bender  
450. MCCB / MCB  
451. Relays  
452. Heat flux sensors  
453. Strain gauges  
454. Heating Furnaces  
455. Radiative heaters  
456. Heating elements  
457. Electrical insulation materials  
458. 20 kW RF 13.56 MHz Generator with matching Network  
459. 50 kW RF Generator with matching network @ 50-450 KHz  
460. 60 kW Programmable DC Power Supply  
461. VNA for Microwave Interferometry  
462. Horn Antennas  
463. Fabrication of electromagnets  
464. Dual Power supply (programmable Low current ,High voltage)  
465. Quartz / Alumina Plasma Source  
466. Fabrication of water-cooled Helicon and ICRH antenna  
467. Electric Panel for high-power generators and power supply.  
468. Procurement of different types of gas cylinders (Hydrogen, Argon, Helium, etc)  
469. Spectrum Analyser  
470. Titanium for probes  
471. Ceramic tubes for probes  
472. Arbitrary Function Generator  
473. PMT detectors and associated amplifier units  
474. Arbitrary function generator  
475. Iodine Cell kit with accessories  
476. Dye Laser System  
477. Diode Laser System  
478. Optics and Opto-mechanical components  
479. Spectrograph system with detectors  
480. UHV viewports  
481. RF chokes  
482. Amplifiers  
483. Oscilloscope  
484. TMP stations with Rotary pump  
485. MFC and Gas dosing valves  
486. UHV Gatevalve  
487. Aluminium profiles  
488. 19" Electronics racks  
489. Copper Ground Strips  
490. Temperature sensors  
491. Directional coupler

492. Current transformer  
493. Probe drive system  
494. Power Amplifier ICs  
495. Electronics Kit  
496. Cables and connectors  
497. Variac  
498. Feedthrough

499. Turbo molecular pump with Dry scroll/rotary backing pumps  
500. Ion pump  
501. Residual Gas Analyzer (RGA)  
502. Bayard-Alpert ionization and Extractor gauges along with gauge controller  
503. Vacuum-compatible electrical feedthroughs  
504. UHV cabling and connectors  
505. Vacuum baking system  
506. Heating tapes/heating jackets  
507. Temperature controllers  
508. Vacuum-compatible glass viewports  
509. High-voltage vacuum feedthroughs  
510. Coaxial vacuum feedthroughs  
511. TF coil copper conductor and insulation materials  
512. DC magnet power supplies  
513. Hall probes/Gauss meter for magnetic field mapping  
514. Sected toroidal trap electrodes fabrication, with support structure and suitable insulators  
515. Fast HV switches/pulsers  
516. Isolation transformers and grounding hardware  
517. Microchannel Plate (MCP)  
518. Phosphor screen assembly  
519. MCP high-voltage power supply  
520. CCD or scientific CMOS camera  
521. Image acquisition frame grabber  
522. Faraday cup diagnostics  
523. Imaging lenses and optical mounts  
524. Optical viewport assemblies  
525. Optical filters  
526. RF amplifiers for diocotron excitation  
527. Phase-sensitive detection electronics  
528. Analog and digital I/O modules  
529. Timing and synchronization modules  
530. Control workstation/computer systems  
531. Data storage server/workstation  
532. Remote monitoring and automation interfaces  
533. Low-noise DC power supplies  
534. HV cables and SHV connectors  
535. RF coaxial cables  
536. Rack cabinets for electronics  
537. Temperature monitoring system  
538. Current probes  
539. Bellows,  
540. UHV Ceramic Isolator  
541. Machinable Ceramic block  
542. Ceramic Tubes  
543. Convection Gauge  
544. Digital Storage Oscilloscope  
545. UHV Feed Through  
546. UHP Pressure Gauge  
547. Helium Gas Leak Detector

548. Hydrogen Purifier  
549. B/A Type ionization gauge  
550. Digital Combination Gauge  
551. Double Stage rotary vane pump  
552. UHV Pneumatic gate valve  
553. UHV Manual gate valve  
554. UHV needle valve  
555. Mass flow controller  
556. Piezo Electric Leak Valve  
557. Residual Gas Analyzer  
558. Turbo Molecular Pump  
559. UHV compatible View Port  
560. Three dimensional positioning system/Actuators  
561. RF source 13.56MHz  
562. Matching Network  
563. Vacuum Variable Capacitor  
564. Microwave components  
565. RF isolator  
566. RF detector  
567. Microwave detector  
568. Network Analyzer  
569. Arbitrary Function Generator  
570. Gauss meter for magnetic field measurement  
571. I-Q mixer  
572. RF modulator and demodulator  
573. Phase shifter  
574. Phase detector  
575. Baking pads  
576. Displacement sensors  
577. Stress sensors  
578. Optical Fibers  
579. Coaxial DC break  
580. Arc detector  
581. Photodiode  
582. Temperature sensor  
583. High Temperature Superconducting (HTS) Wire  
584. Heat Exchangers for prototype current lead  
585. Test set up for prototype HTS module  
586. Fabrication of SS Adapter for Test facility  
587. Metallographic consumables  
588. Mounting press  
589. Stereo Microscope  
590. Micrometer  
591. LCR Meter  
592. Heat Exchanger for current lead  
593. End Connection/Linker for current lead  
594. HTS current lead module / Prototype  
595. Consumable items for current lead  
596. Induction heater test set-up for joints  
597. Programmable DC power supplies for signal conditioning electronic system up-gradation  
598. PCB fabrication indent for various signal conditioning cards

599. Circuit breaker/Power contactors  
600. Semiconductor switches  
601. Insulation consumables and tapes  
602. Resistors  
603. Ceramic feed through

604. Instrumentation feedthrough  
605. Optical sensor with interrogator  
606. Multicore cable for electronics  
607. Integrated IC for electronics development  
608. Electronics components  
609. Multifunction process calibrator  
610. Online UPS with batteries  
611. Cryogenic sensors  
612. Variable Frequency Drive (VFD)  
613. Copper BUSBAR with support structure  
614. SS DM water tank 2500 ltr  
615. IGBT's with Driver cards  
616. Temperature Sensors  
617. Multimeter  
618. High current 3 pole contactors  
619. Clamp on A-meter  
620. IR temperature gun  
621. High power resistors (Few k $\Omega$  and kW range)  
622. Fabrication of flanges and installation of Cryostat  
623. Procurement of structural materials and supports  
624. Procurement of cryogenic accessories  
625. Fabrication of superconducting cable  
626. Fabrication of magnet  
627. Procurement of HTS cable  
628. DAC system for Power supplies  
629. Electronic cards  
630. Controller & HMI for Power Supplies  
631. Embedded controllers  
632. SCR with gate drivers  
633. IGBT with gate drivers  
634. IGCT with gate drivers  
635. Power diodes  
636. Control racks  
637. Auxiliary power supplies  
638. Heat sinks (air and water cooled)  
639. Protection components for power supplies (fuse, snubber, MOV, BOD, temperature dependent resistors, ground resistors, thermostat, pulse DCCT)  
640. Isolators and change over switch  
641. Power electronic circuits and pulse transformers  
642. AC voltage sensors (synchronizing transformers)  
643. Temperature monitoring system with sensors  
644. Programmable power supply  
645. Panel and frames  
646. Multi core signal and power cables  
647. Inductive loads  
648. Transducers  
649. Current sensors (DCCT)  
650. Voltage sensors  
651. Bus bars for interconnection  
652. Water cooling system for power supplies  
653. Miscellaneous items for lab (Tools, tool box, hot air gun, air blower, drill machine, soldering station etc.)  
654. 4-Channel Oscilloscope  
655. Differential Voltage Probe  
656. DCCT-current sensor  
657. Voltage transducer  
658. LCR Meter, Capacitance measurement meter  
659. Programmable DC Power Supply  
660. SMPS Power Supply

661. Converter Transformer  
662. Auto/Isolation Transformer  
663. Digital Signal Processor (DSP)  
664. FPGA Development Board  
665. Function Generator(programmable)  
666. IGBT Modules  
667. IGBT Gate Driver Boards  
668. MOSFET with driver modules  
669. Thyristor Modules and driver  
670. RC Snubber circuit  
671. Voltage divider  
672. Heat Sink and Cooling Setup  
673. Soldering + Rework Station  
674. Offload isolators  
675. Thyristors  
676. Relays for Circuit Breakers  
677. High Speed HRC semiconductor fuses  
678. Fast Make Switch  
679. High Precision Current Transducer  
680. Tools and tackles for power electronics lab  
681. Capacitor banks ( Super capacitor, Electrolytic, MPP, APP)  
682. Load bank – Resistive and inductive  
683. High Current and High Voltage Power Supply for Tokamak coils  
684. Power/Distribution Transformer  
685. Battery Bank  
686. SCADA system for HT Panels  
687. LT Panels  
688. MFM for HT Panels  
689. Transformer oil  
690. Diesel Fuel  
691. Switchyard steel structure barricading using HDPE netting(green net)  
692. HT Panel spares  
693. LT Panel spares  
694. DG set spares  
695. APFC spares  
696. DC Charger spares  
697. EDM Wire Cut Machine  
698. Shearing Machine

699. Plotter printer  
700. Colour Xerox machine  
701. Work Stations for Computer Aided Design (CAD)  
702. Computer Aided Design (CAD) Soft wares  
703. Software for CAD data base configuration management  
704. Item Details  
705. Graphite electrodes  
706. Sensors  
707. plastic waste shredder  
708. Coke / coal  
709. SEM spares and consumables  
710. FTIR Spares  
711. Oscilloscopes and probes  
712. Temperature Controllers  
713. Thermocouples/Temperature Sensor  
714. Hydrogen, Nitrogen, Argon, Oxygen, Helium gases  
715. Gas Regulators and flowmeters

716. Insulation material ceramic/wool - 2 boxes  
717. Optical Emission Spectroscopy  
718. Electric Motors  
719. Industrial water chiller  
720. Power supplies (DC/Pulse)  
721. Mass flow Controllers  
722. MW directional couplers, 1000W dummy load  
723. Vacuum pumps and spares  
724. Pressure gauges  
725. heaters  
726. UV lamps  
727. Sputter targets  
728. AFM tips  
729. Glass wares  
730. Multimeter  
731. Conductivity/TDS meter  
732. Chemicals  
733. Cuvette  
734. Hardware like, connectors, valves, reducers, nuts bolts etc.  
735. O-rings and gaskets  
736. Electrical components and spare items  
737. Electronics components and spare items  
738. 20 TR Chiller  
739. 1000 LPM Rotary Pump  
740. Convection Enhanced Pirani Gauge  
741. Substrate Manipulator  
742. Pneumatic Valve  
743. Water Flow Meter (100 LPM) – 2 Nos.  
744. Thermocouples  
745. capacitance Gauge  
746. Compressor  
747. Tungsten Powder of Different Particle Sizes  
748. Iron Powder of Different Particle Sizes  
749. B4C powder  
750. Copper Rod  
751. Rotary Pump Oil – VG100  
752. Booster Pump Oil – S2G150  
753. Micalex Ceramic Purchase  
754. AMC of Vacuum Pump Set  
755. AMC of Chiller  
756. AMC of Power Supply  
757. AMC of Powder Feeder  
758. Filter Elements for Vacuum Line  
759. Spare Pneumatic Fittings and Tubing  
760. Spare for AMC roots pump  
761. Probe drive system  
762. Gas dosing valve  
763. 2 kVA UPS + Battery  
764. Chiller (3TR)  
765. Ultra Isolation Transformer(2kVA)  
766. LN2 Container  
767. Full range gauge  
768. LaB6, thoriated tungsten, Graphite heater  
769. molybdenum anode, ceramic, specialized springs of molybdenum, NdFeB magnet etc....)"  
770. Consumables such as gases, cables, connectors, grease for translator etc.  
771. "Procurement related to Vacuum conditioning such as Chamber Buffing, Rotary  
772. Pump oil, diffusion pump oil etc....."  
773. Kapton insulated wire

774. Materials related to the fabrication of magnetic coil system and its support structure  
775. "Materials Related to the development of power supply for creating reverse  
776. field configuration/ current sheet formation"  
777. Materials related to development of Antenna Excitation pulse power supply  
778. Materials Related to the Development of Plasma Diagnostics  
779. Fabrication of large area Plasma Source  
780. Fabrication of support structure for magnetic coil assembly  
781. Alum  
782. Caustic Soda  
783. Thermocouples  
784. Flow meters  
785. Flow sensors  
786. Pressure sensors  
787. Induction motors  
788. Stepper motors  
789. Plastic waste  
790. High Power resistors  
791. Rogowski coils mA to 10s of A ratings  
792. High-voltage probes for a few 10s of kV voltage rating  
793. Vacuum variable capacitors for high-power RF operation  
794. Diodes with higher power ratings  
795. Integrated circuits  
796. Power supplies and their components  
797. Spares & consumables of HV power supplies  
798. AMC of Air circuit breakers

799. Magnetic cores for high-power RF transformer  
800. AMC/Repair of HVPS and its sub-system  
801. Fiber optical links  
802. Electronic cards, Signal conditioning modules  
803. Workstations  
804. Hardware for DAQ/DACS  
805. Optical diodes  
806. Vacuum gauges (1bar to  $10^{-10}$  mbar range)  
807. Vacuum feedthroughs for electrical and optical fibers  
808. Gas dosing valves  
809. Needle valves  
810. Vacuum On/OFF valves  
811. Piezo valves  
812. Solenoid valves  
813. High-vacuum gate valves of different sizes with different operating schemes.  
814. Pressure regulators  
815. Gas detector  
816. Cryopump  
817. Turbo Molecular Pump  
818. Rotary pump  
819. Vacuum grease  
820. High vacuum Ceramic paste or sealing  
821. Indium foil  
822. Metal, Viton, Neoprene Gaskets, O-rings  
823. Air compressor  
824. Different Gases & Element; H<sub>2</sub>, Ar, N<sub>2</sub>, Cs  
825. Lasers  
826. Optical Detectors  
827. Thermocouples  
828. Spectrometer  
829. Consumables and spares of TEM and its ancillaries

830.FEG Emitter  
831.Float rod  
832.DRCU board  
833.QCRB board  
834.Lens apertures  
835.Objective pole piece  
836.Water cooling unit  
837.TDK Lens power supply  
838.Lens Power heat sink  
839.SF6 Gas  
840.Indium seal  
841.High-vacuum grease  
842.Rotary pump and its oil  
843.Air compressor  
844.Spare PC for TEM with necessary cards  
845.Consumables and spares of sample preparation equipment  
846.Consumables and spares of slow speed wire saw  
847.Consumables and spares of PIPS-II  
848.Consumables and spares of Dimple grinder  
849.Consumables and spares of Ultrasonic disc cutter  
850.Display for slow speed wire saw  
851.Consumables and spares of EDAX attachment  
852.Consumables and spares of UPS  
853.Consumables and spares of DG  
854.Consumables and spares of water cooling unit  
855.Consumables and spares of air compressor  
856.UPS batteries  
857.Consumables and spares of PIII system  
858.Aluminium targets, plates and rods  
859.Substrate heating mechanism  
860.Rotary and diffusion pump oil  
861.Pressure regulators  
862.Pressure gauges  
863.Fabrication of Indigenous Positive Ion Source System  
864.Fabrication of Beam Dump for Calorimetry Applications  
865.Roots Rotary Pumps  
866.Electropneumatic Vacuum Gate Valves  
867.Full-Range Vacuum Gauges  
868.Foreline Traps for Rotary Pumps  
869.Quadrupole Mass Analyzer (Residual Gas Analyzer – RGA)  
870.Vacuum-Grade Electrical Feedthroughs  
871.Vacuum and Gas Fittings, SS Tubes, Vacuum Seals, Bellows, and Accessories  
872.Vacuum-Grade Gas On–Off Valves  
873.Spares, Consumables, and Oils for:  
874.Roots Rotary Pumps  
875.Turbomolecular Pumps  
876.Helium Leak Detectors  
877.Consumables for Vacuum Systems  
878.Mass Flow Controllers (MFCs)  
879.Process Gases with Cylinders:  
880.Hydrogen (H<sub>2</sub>)  
881.Argon (Ar)  
882.Helium (He)  
883.Nitrogen (N<sub>2</sub>)  
884.Xenon (Xe)  
885.Consumables for Gas Feed Systems  
886.Experimental DC Power Supplies  
887.Discharge Power Supplies

888. Bleeder Loads for HVPS (High Voltage Power Supplies)  
889. Hardware Interfaces for RHVPS Control Systems  
890. Current Transformers (Various Ratings/Sizes)  
891. Teflon Wires for Electrical Signals  
892. Integrated Circuits (ICs) – Various Types  
893. Oscilloscope  
894. Data Logger  
895. Beam Imaging Camera  
896. Spectrometer Accessories:  
897. Optical Fibres  
898. Optomechanical Components

899. Langmuir Probe Consumables and Electronics  
900. Test and Measurement Equipment  
901. Hardware Interface for PXI Systems  
902. Thermocouple Signal Conditioning Hardware Systems  
903. Cooling Water Accessories:  
904. Flow Meters  
905. Pressure Gauges  
906. Thermocouples  
907. Consumables for Cooling Water Systems  
908. Samarium–Cobalt Permanent Magnets  
909. Tungsten Wires for Filament Fabrication (Various Sizes)  
910. OFHC/ETP Copper Tubes and Sheets  
911. Molybdenum Rods and Sheets  
912. Alumina/Ceramic Isolators and Spares for NBI Ion Source Maintenance  
913. Siemens PLC Modules  
914. Desktop Computers  
915. Optical Fibre Cables and Connectors  
916. Portable Clean Room and Accessories for NBI Ion Source Maintenance  
917. Hydrogen Generator -  
918. RF power supply 5kW for Helicon launching  
919. Electromagnets and DC High-current power supply water cooling  
920. Probe linear drive system for acquiring data  
921. Automation of APPEL power supply-  
922. Pulsing capacitor unit with voltage current probe  
923. ECR source and accessories for Plasma generation  
924. Vacuum chamber and rotary pumps.  
925. Electronic components for microwave and RF  
926. Ferrites and permanent magnet assembly  
927. Signal generators and measurement devices  
928. High power vacuum and optical feed-throughs  
929. Data-acquisition solutions.  
930. Precision ceramic and metallic tubes  
931. Tungsten wires.  
932. Inline Tritium Monitor  
933. HPGe based Gamma Spectroscopy System  
934. Tritium Targets  
935. Neutron Area Monitor/Dose Rate Monitor  
936. Dosimetry Foils  
937. Fission Chamber  
938. Boron lined proportional counter  
939. NIM Bin Crate  
940. Preamplifier for Diamond Detector  
941. Gas Dosing System for Ion Source  
942. LaBr<sub>3</sub> Gamma Detector/Lanthanum Bromide Scintillation Radiation Detector  
943. Nuclear Instrumentation Module/Electronics

944.TraceWin Software  
945.Tritium Respiratory Mask  
946.Gamma Dosimeter/Personnel Radiation Detector  
947.Tesla Meter  
948.Lead Apron  
949.Gamma Sources  
950.Alpha Sources  
951.Gate Valve  
952.Roots/Scroll Oil free Dry Vacuum Pump  
953.Aluminum edged seal for ISO-KF, Clamping ring for metal seals of ISO-KF  
954.Narrow band high OD Interference filter, polarizer etc  
955.Optics and opto mechanics  
956.Vacuum components and gauges  
957.Electronics components  
958.MW and MI waveguide, component and antenna  
959.Optical fiber cables  
960.Raw material for customized cabinet and experimental set up  
961.Boron Nitride, molybdenum, other probe materials.  
962.detectors  
963.radiometer components  
964.Phase lock source for Micro wave  
965.Chillers and vacuum system  
966.Microwave components  
967.Optical Head + wire grid polarizer  
968.Equipments for Calibration  
969.RF amplifiers and filters  
970.Repair and Maintenance of Clean Room System  
971.Laser servicing  
972.sCOMS/CCD /ICCD/EMCCD detector  
973.IF and Detector assembly  
974.Power supplies  
975.Energy Meters  
976.Spectrographs  
977.Vacuum Pump  
978.Multichannel heterodyne trans receiver system  
979.Electronics card like FPGA, IF-DAC Sweeper Unit and other signal processing cards and power supply.  
980.Signal generators  
981.Microwave front end and data acquisition module  
982.High speed camera  
983.wound imaging fiber bundle  
984.Metal foil bolometer  
985.AXUV bolometer  
986.Laser and light sources  
987.DAQ systems  
988.Ion source  
989.Digital storage oscilloscopes  
990.Components for insitu Raman system  
991.image intensifier  
992.Laser profiler and energy meter  
993.Multi axis antena positioner  
994.Pattern recorder  
995.GM counter (detector tube)  
996.Inline tritium monitor