

List of items likely to be procured in the next 3-5 years

Note:

- 1. This list may change from time to time depending on project requirements.**
- 2. Detailed specifications will be available at the time of raising the indent.**

1. MS and SS chambers with refractory and thermal insulation linings from inside like in a furnace.
2. IGBT based power supply of rating 100kW
3. Process Instrumentation and sensors with PLC based feedback controls integrated in control panel.
4. Steam based medical waste sterilization equipment made of SS material with accessories
5. Heavy duty industrial shredder to shred sterilized red category biomedical waste
6. Effluent treatment plant to treat water from discharge of wet scrubbers and other equipment consisting of sedimentation, dosing tanks and filter press.
7. Diesel generator for emergency backup
8. Oxygen and Nitrogen generators based on swing adsorption technique
9. RF power supply (1KW, single phase along with matching network)
10. Pressure gauges
11. Heaters and heater power supply
12. Mass Flow Controller
13. Water chiller
14. High-Temperature Vacuum Furnace with High-Pressure Gas Quenching
15. Multi-stage roots pumping station
16. Vacuum Chambers of various dimensions
17. Optical Emission Spectrometer
18. Ion Source for Producing ion beam of energy range 50 - 2000 eV
19. UHV system of various dimensions
20. SNOM AFM Scanner,
21. FDTD/SPIP software
22. Portable Raman system
23. Compact e-beam evaporator
24. Turbo Molecular pump of various specifications
25. High Vacuum SS Chamber (Spherical, Diameter: 500 mm with load lock)
26. HIPIMS Power supply (6 KW, 3 phase)
27. Ion energy analyzer
28. Vacuum Chamber and subsystems
29. Power supplies
30. Quantum Efficiency Measurement
31. H₂S detectors and Upgradation of safety system
32. Diesel generator
33. Flue Gas Analyzer,
34. Power supplies,
35. Experimental system + PS for electric and magnetic fields,
36. Turbo pump
37. AFM scanner
38. Cryogen free PPMS/CFMS with magnetic measurement module Vibrating sample magnetometer (VSM)

39. Experimental plasma pyrolysis chamber
40. RF Components such as amplifier, Directional antenna system, and Broad band Antennas and SDR etc.
41. Controlling systems for vacuum and power supplies such as console, leak detector, high voltage power supply etc.
42. Radiation measuring systems such as Wein Filter, Spares gamma and neutron detectors, HV feed through, Insulator etc.
43. System for RF applications on seeds or similar etching system such as Water Contact Angle Measurement Instrument, Optical Emission Spectroscopy up gradation, Florescent Microscope etc.
44. High Voltage Probe & Current Transformers (CTs)
45. High speed RF switch 2GHz to 20 GHz (SPDT)
46. ZERO-BIAS SCHOTTKY DIODE DETECTORS 2GHz to 20GHz
47. RF Power Meter with Diode sensors 2GHz to 20GHz
48. Semiconductor devices(100 Ampere, 1.5kV) IGBT, Diodes, MOSFets, Diodes, SCRs
49. Hot Wire Anemometer, 0-30m/s
50. Vector Network Analyser (1MHz to 20 GHz)
51. Combination Vacuum gauge (1500 mbar-10(-8)mbar)
52. Turbo Molecular Pump (80 liter/sec)
53. Bidirectional couplers 2GHz to 20 GHz
54. Voltage controlled oscillator 2GHz to 20GHz
55. Gas dosing valve (high Precision)
56. Circulators 1 GHz to 2 GHz
57. Spectrum Analyser (10kHz to 20 GHz)
58. CW 13.56 MHz RF source with impedance matching network for making of plasma, impedance range=0.1 to 10 ohm
59. Stub tuner for matching impedance in frequency range of 100-500 MHz with power handling capacity 100 watt
60. RF Power meter for (-20dBm to +50 dBm) with frequency range 10-500 MHz
61. Power Amplifiers for 10-500 MHz for 100 watt output
62. Programmable software defined radio SDR (transceiver) for frequency 50 MHz to 3 GHz
63. Tunable RF filters with High power handling of 100 watt in frequency range 10-500 MHz
64. RF Fixed attenuators, high-power attenuators, digital step / programmable attenuators, voltage variable attenuators from DC to 1 GHz with 20dB attenuation
65. Signal generator (2 GHz/18 GHz)
66. Radiation measurement meter (frequency up to 20 GHz)
67. optical emission spectrometer in 320-1000 nm wavelength range and focal length >300mm, optical resolution of 0.2nm
68. CW Signal generator (9kHz-3GHz) with FM,AM modulation and output power of -120 to 10dBm
69. NF3 gas detector 0-30ppm
70. Mass flow controller (NF3 gas) 0-500 sccm
71. 40 KF FUSED SILICA (QUARTZ) VIEWPORT
72. UHV gate valve with DN 100 CF flange
73. "Wien Filter with a fixed magnetic field (with rare-earth permanent magnet circuit) and a set of electrostatic plates.
74. Fission Chamber/Boron lined proportional counter :1500 mm to 400 mm

75. Neutron and Gamma Area monitor:He3 and GM counter
76. Bending Magnet
77. Linear Induction Motors 0 to 415V, ~1kA (short pulse)
78. 3-phase, 415V, Variable Frequency Drives
79. Alpha detector
80. Workshop machines (CNC VMC, shearing machine with accessories)
81. 12 MW Water Cooling System
82. Wi-Fi Access Points & Controller
83. Containerized Data Center turnkey project with 8 racks
84. High Configuration Server
85. Routers with 10G interface
86. "Multiparty VC End Points,
87. Multi Control Unit (MCU)"
88. 2 Petabyte Storage System solution
89. VDI (Virtual Desktop Infrastructure)
90. Smart Class Room with accessories
91. "Desktop Computers
92. (All-In-One, Desktop Computers)"
93. Multi-Function Printers
94. Network Access Control solution for the campus network
95. High Configuration Server Hardware
96. Data Backup Solution for minimum 500TB storage
97. GPU-CPU cluster (NVlink or equivalent configuration)
98. Position control power supply (Feedback power supply rating 300 V, +/- 3 kA.)
99. Divertor Power Supply (300V, 30 kA)
100. Cryo valves for helium as well as nitrogen services (On-off, control or Hand valve, Electro/pneumatic valve)
101. Impurity detector (Trace Impurity of N₂, O₂, Moisture and THC in Helium gas, Range: 0-100 ppm)
102. PLC Upgradation of Cold-Box (Upgradation PLC module of cold-box Eurotherm T2750 PAC modules, IO: 140 nos. , # 02 CPU with designated 16 modules racks, 08 module AI, 09 AO, 01 DI and 12 nos. of DO)
103. Cryo Temperature Sensors (Range: 4.2 K - 325 K) , Model: Cernox or CCS
104. Cryo compatible Resin Epoxy (10 Kg)
105. Stainless Steel Pipes (SS 316 L, Size: ½ in to 4 in (NB), Length: 10 m)
106. S-Glass Roving (9 micron, 360 tex, S-Glass Yarn)
107. Oil consumables for Rotary and Roots vacuum pumps 50 L container x 02 nos., P3 grade Oil)
108. Breox Oil (B35) and Charcoal (Breox B35 Oil for He compressors 200 L x 3 drums, 200 kg Charcoal)
109. ORS, POS and Purifier Filters for periodic maintenance
110. Filter FC 410 & FC 418 for Helium cold box
111. O-rings / Gaskets / seals (10 kF, 16 kF, 25 kF, 40 kF and 50 kF)
112. Material: Viton / Nylon / Teflon PFTE)
113. Cryo Compatible Bellows (SS 316 L, Size: ½ in to 4 in (NB), Length: 0.25 -1 m)
114. Multi-layer Insulation (MLI) (Aluminized Mylar, Fibre Glass Net as spacer material, Punched holes, 100 m L and 1 m width Roll)

115. HTS Tape – BISCCO or YBCO (Bi-2223 or Di-BSSCO, YBCO, L : 50 m, Critical Current at self-field at 77 K: > 120 A)
116. MgB₂ wires (L : 500 m, Critical Current at self-field at 77 K: > 50 A)
117. Helium gas (Qty: 2000 M3, Purity: 99.999% (4.6 Grade Helium gas))
118. Liquid Nitrogen (Qty: 24 Lacs Liters (Every Year 8 Lacs x 3 Y), Purity: 99.999%)
119. PLC cards AO/AI for Compressors station
120. Consumables for Pneumatics Utility
121. Sub-components for Current leads
122. Helium Leak Detector (3 nos.) (1. Backing pumps capacity from 15 to 35m³/h. 2. Pumping Speed capacity from 2 to 10 l/s. 3. Vacuum and sniffing leak detection)
123. UHV Gauge Heads (15 nos.) (Replacement gauge heads with CF fitting compatible with M/s. Granville Phillips (MKS) make 356 Micro-Ion Plus modules -P/N: 356006-YG and 274 UHV Nude Gauge Flange - P/N: 274042.)
124. RGA Ion Source (10 nos.) (Replaceable Open Ion Source with Dual Thoria Filaments for MKS022 Series RGA (MKS make) P/N: 842-043)
125. Ionization Gauge (4 nos.)
126. Turbo molecular pump Hi pace 300 bearings (15 nos.)
127. Turbo molecular pump Hi pace 2300 bearings (15 nos.)
128. Oil consumables for Rotary and Turbo molecular vacuum pumps
129. Annual maintenance contracts
130. AMC of Pfeiffer make Pumps and helium leak detectors
131. Divertor Power Supply for Aditya-U
132. PF-6 Power Supply for SST-1
133. Up-gradation of Plasma Control System H/W and S/W Controller, A/D, D/A, Timer and DIO modules along with software drivers
134. Supply and Installation of Turbo Molecular Pumping System with 150 CF Inlet Flange and Nitrogen Pumping Speed \geq 650 l/s
135. Supply and Installation of Turbo Molecular Pumping System with 250 CF Inlet Flange and Nitrogen pumping Speed \geq 1900 l/s
136. Mass Flow Controller (MFC) with Local Display Unit and mass Flow rate 50, 100, 300 SCCM
137. Residual Gas Analyzer with 200 AMU Including Electronics Unit
138. Supply and Installation of Cryo Pumping System with 300 CF Inlet Flange and Water pumping
139. Speed \geq 9000 l/s
140. DCCT for pulsed and continuous operation; a) +/-2 kA; a) +/-5 kA; a) +/-14 kA; a) +/-20 kA
141. Power supplies and DAQ for magnet system
142. Upgradation of 82.6 GHz, 200 kW Gyrotron
143. 35kV Power supply
144. UV-VIS Spectrometer (200 – 700 nanometer)
145. CCD cameras
146. X- ray (0.5 KeV-100 KeV) Imaging systems
147. Fast Optical imaging system in visible spectrum
148. Phase Quadrature (IQ) Analyser (1-42 GHz) + Lab Equipments
149. Heterodyne Interferometer Systems (140 GHz) – 7 nos.
150. Microwave assemblies for 16-channels Radiometer (60 -110 GHz)
151. Millimeter Wave vibration time-series systems (90 GHz) & VCO assemblies (26 – 40 GHz)
152. Closed Loop Detector System for Michelson Interferometer (75 – 1000 GHz)
153. Vacuum pumps and components for Time of Flight System of Neutral Particle Analyzer (NPA).

154. Infrared cameras
155. Compact Charge Exchange- Neutral Particle Analyzer (for 100 eV – 1 KeV ion temperature) System
156. Vacuum, RF components, Electrical component, Power Supply
157. Fabrication and testing of TF coils (12.5 kA, 250 ms flat top Multi-stage Capacitor bank based Power Supply with a ramp rate of 1.5 MA/s)
158. New VF Power Supply
159. Equipment related with LN2 sub cooled system
160. Fabrication of one shaped coil
161. Fabrication of a solenoid coil producing magnetic field up to 3T
162. Procurement of vacuum components
163. Procurement of cryogenic components
164. Procurement of diagnostic equipment
165. Procurement of control equipment
166. Equipment for Characterization facility of different structural & functional materials
167. Equipment for integration of EHCL and HHF Test Facility
168. Cryocooler Assembly with standard accessories having cooling capacity in Vertical Orientation: Minimum 20W @ $\leq 16K$ at 50 Hz, in Horizontal Orientation: Minimum 20W @ $\leq 19K$ at 50 Hz
169. Calorimeter
170. Enhance data acquisition system of existing tokamaks -Aditya-U diagnostic data acquisition system: SST-1 central data storage capacity expansion; Server hardware for various DAC services
171. DAC system for ST
172. Motors + Gearbox + controllers + IPC for Hyper-redundant Inspection System
173. Power supplies, oscilloscope, function generator, Isolation transformers, soldering de soldering stations
174. 70 kV, 42 A HVDC power supply for ECRH and LHCD System
175. 35 kV, 105 A HVDC power supply for ICRH System
176. Tunable Diode Laser
177. RF Generators
178. Visible Spectrometer
179. TMP, Gate Valves & Gauges
180. DAC modules
181. Experimental chambers
182. High current power supplies for different magnet systems
183. Magnets
184. High Power microwave Coupler
185. Microwave components
186. Optical and Opto-Mechanical components
187. Energy Storage Capacitor
188. Thermogravimetric Analyzer, Vickers hardness tester, FTIR Spectrometer
189. W-Cu made segmented plasma torches
190. Electrical & Electronics components
191. Instrumentation feedthrough and view ports
192. Optical and Opto-Mechanical components
193. Graphite electrodes Sod. Hydroxide, etc.

194. Consumables for nano powder production; Consumables for sterilization; Consumables (Ag, Au, wafers, sharp tip, gas, Desiccators, Freezer, maintenance of all systems, AFM tips, TEM grids, thermocouples etc.)
195. Consumables like targets, AFM tips, TEM grids, heaters, thermocouples, H₂S Gas, SS foil, Ar, N₂, O₂ UHP gases and commercial gases
196. Different gases and materials required for etching and neutronics such as deuterium, silicon wafers and Tritium Target
197. Installation and commissioning of hardware for digitization and integration for electrical distribution system of 132 kV Substation
198. Rooftop Solar Power System, LED lightings & spares and maintenance of Utility Power systems
199. Ferrous and non-ferrous metallic and nonmetallic materials for Workshop
200. Pipes, fittings, valves, tanks, pressurizers, cables, PLCs etc. for Water Cooling Plant
201. VFPS Upgradation
202. OTPS and Wave shaping circuit upgradation and new VFPS
203. Procurement of power supply spares and transformer overhauling
204. Liquid nitrogen and helium gas consumables
205. Cryogenic accessories and spares
206. Manufacturing of current leads
207. Cryo-plant maintenance and spares
208. Manufacturing of 4 Nos. of current leads
209. Upgradation of hot N₂ system
210. Delivery of hardware components
211. Delivery and testing of controller
212. Testing and commissioning of rectifier circuit
213. Components for Solid state crowbar Thyristors etc.
214. Components for Solid state Switch (IGBTs), Power supplies, CTs, probes etc.
215. Liquid Helium
216. HVDCPS, Consumables, Ferrite, Ceramic, Magnet, Copper disc, SS disc, etc.
217. Accessories and parts of Hard x -ray and soft ray systems
218. Thomson Scattering System Installation at Aditya-U
219. Prototyping and fabrication work of components
220. Procurement HTS tapes/2G HTS wire and associated consumable
221. Procurement of structural materials for shaped coils
222. Procurement of cryogenic accessories and consumables
223. Procurement of flexible cryostat
224. Professional services required for experiments performed in EHCL and HHF facility
225. Fabrication, Assembly and Testing of Target Handling System for HHFTF
226. RCC-MR double walled bellow of diameter ~2m
227. elliptic metallic seals 2 m x 0.7 m for UHV boundary
228. CFC Tiles
229. Prototype THE with improved design
230. Fabrication of faraday cage
231. Vacuum vessel and vacuum pumps for xenon pumping, gate valves, gauges, mass flow controllers, water cooler, vacuum feed-through
232. CNC machining of extractor Grid and fixtures
233. Electrodeposition of OFHC copper
234. UPS power for tokamak systems.

235. Gases (Deuterium, helium, argon etc.)
236. Motors + Gearbox + Encoders + controllers + IPC for Single Arm Manipulator and Dual Arm Manipulator System
237. Gripper for Single Arm Manipulator and Dual Arm Manipulator System
238. Vision (Hand and Head Camera) and lighting system for Single Arm Manipulator and Dual Arm Manipulator System
239. Motors + Gearbox + Encoders + controllers for Winch System
240. Force Torque sensors, temperature sensors, electrical feed-throughs for Single Arm Manipulator and Dual Arm Manipulator System
241. Prototype Single Arm Manipulator and Dual Arm Manipulator System
242. Design, Fabrication, Assembly, Installation and Commissioning of Single Arm Manipulator, Winch System and Dual Arm Manipulator System
243. Design, Fabrication, Supply, Installation, Testing and Commissioning of Anechoic chamber of size 5m x 5m x 4 m (lbh) at 2 GHz to 26.5 GHz with shielding effectiveness of -80dB and cylindrical quiet zone with quietness level of -30 dB in the total frequency region
244. Inverted Metallurgical Microscope
245. Stereo Microscope
246. Impression Creep testing Machine
247. AFT Arrow software (network license)
248. Aluminum Extruded T-slot Profile 60 mm X 60 mm (150 meters) along with compatible accessories (90 deg. Al Die cast Corner bracket, Button Head Hex Screw (M8) SS304, Hammer Head T-bolt (M8) SS304, Flat nut slot-block sliding type (M8) CS, Floor Mounting Brackets Al, End Cap Plastic)
249. Continuous Emission Monitoring System (CEMS) to monitor stack gas.
250. Flue gas scrubbing system consisting wet scrubbers, heat exchanger, cyclone separator, Induced Draft fans.
251. Bottom ash collection system to remove residue from the waste disposal chamber.
252. Gate Valves made of SS / MS with cooling jackets to isolate waste processing chamber.
253. Industrial Chimney to exhaust flue gas as per standards stipulated by pollution control board.
254. Conveyor system to handle and feed bulk waste packets in semi continuous mode with full automation and control.
255. Process Calibrator with multifunction to calibrate temperature and pressure transmitters at field.
256. Temperature sensors and transmitters such as thermocouples, RTD
257. Pressure Sensors and Transmitters such as manometers
258. Bulk density Graphite electrodes for plasma arc generation
259. Input Power Cables Three & Half Core for Power Supply
260. Output Cables Single Core for DC Power Supply
261. Turbo Molecular Pump
262. Customized chamber for cylindrical sputtering system with heater, power supplies and other accessories.
263. TF PS for SSST
264. PS for Ohmic Coil of SSST
265. PF-1 PS for SSST
266. PF-2 PS for SSST
267. PF-3 PS for SSST
268. Flow Meter & Flow Switch for Water
269. PLC and LabVIEW SCADA system

270. PXIe based DAQ digitizer cards
271. Servicing & Calibration of PXIe based DAQ modules through OEM/ Supplier
272. Probe Drive Systems
273. Fast Camera Diagnostic system
274. CO2 LASER, optical fibers, high quality lens system, optical benches, refractive materials, ZnSe vacuum windows
275. Microwave source of 22 GHz Diode Oscillator, flexible and fixed wave guides, bends, detectors
276. Electron Gun and power supplies for electron gun system
277. Miscellaneous Items(IC's, Band Pass Filters, Amplifiers, Tungsten, Molybdenum, Ceramic tubes, Bush, Paint & Adhesive, Attenuator Probes, Computer Consumables, Vacuum Connectors, feed-through, Measurement Units, Flow Switches, Temperature sensors, Pump Oil, Clean & Overhauling kits for pumping system, Optical Fibres, Fibre Optic vacuum interface, Pneumatic valves, Gate valves, Coaxial/ Tri-axial Cables & Connectors, Varactor diodes, Surface mountable electronics components, precision high vacuum compatible leak valves, hydraulic clamps).
278. Oxygen Free Electronic (OFE) Copper Plates
279. Rigidax Tolling compound (Special wax)
280. Liquid Crystal Films (LCF) for temperature measurement (application in continuity check of ion extractor grid cooling channels)
281. Vacuum Oven 200oC at 10-4 mbar [size: 600 mm (L) × 600 mm (W) × 500 mm (H)] with several diagnostic ports and temperature recorder.
282. Vacuum chamber [size: 600 mm (L) × 600 mm (W) × 500 mm (H)] @ 10-5 mbar] with several diagnostic ports
283. Turbo Molecular Pump (TMP)
284. Route Pump
285. Pirani, Penning gauges
286. Pressure gauges (17 bar Nitrogen and 16 bar Helium)
287. Precision CNC machining of OFE copper for fabrication of ion extractor grids
288. Electro-deposition of OFE copper of 3 mm thickness for fabrication of ion extractor grids
289. Machine for wax filling in ion extractor grid's water cooling channels and manifolds grooves
290. Machine for wax scrapping from the surface of OFE copper base plate of ion extractor grids
291. Storage box for safely keeping ion extractor grids
292. Instrument of ultrasonic measurement of OFE copper layer thickness.
293. High Power laser optics, Mirror, lens wave plates etc.
294. Opto Mechanical components like mirror mounts, translation stages etc.
295. Laser Power meter
296. Precision actuators
297. Vacuum gauges
298. Pulsed White light sources
299. Accessories to for the Nd:YAG laser system
300. Pulsed Nd:YAG lasers
301. Fiber coupled diode laser
302. Programmable power supplies
303. High speed high sampling digitizers
304. Band pass and notch Filters
305. Digital storage oscilloscopes
306. Electronics components

307. Optical fibers
308. Fabrication of laser transport line
309. Developing the dust free lab and associated components
310. FPGA based DAQ system
311. Digital force gauge
312. Fabrication and supply of TF coils
313. Fabrication and supply of Central solenoid coil
314. Fabrication and supply of TR and PF coils
315. Vacuum contactors
316. Pulse CT
317. Resistive load
318. Voltmeter
319. Optical sensors
320. Impulse tester
321. Hi-pot tester
322. Linear Induction Motor (LIM)
323. Linear guides with bearing
324. Carriage
325. Softcatch
326. Structural components (e.g. Steel plate, aluminum channel, brackets)
327. Container for Control Room
328. Pulsed Alternator system
329. Optical Tachometer
330. Jaw coupling
331. Residual Gas Analyzer
332. Palladium Membrane based Hydrogen Purifier O/P flow rate: 12slpm nominal
333. Mass flow Controller
334. Double stage rotary Vane pump
335. Capacitance menometer
336. Ionisation Gauge and controller
337. Convection gauge
338. UHV compatible view port
339. UHV compatible electro pneumatic and manual gate valve of different size
340. UHV compatible electrical feed through
341. Helium leak detector
342. Temperature scanner
343. Fabrication, Assembly, Testing & Supply of Prototype Central Stack (PCS)
344. Procurement of Water Cooling System, Sensors, I&C, electrical cables for PCS
345. Fabrication of support structure for SSST, and Assembly, Integration and Commissioning of SSST machine
346. Shielded enclosure + Radiation protection + Associated test equipment
347. S-Magnetron
348. VNA + Spectrum Analyzer + Power meter
349. DC Field Probes
350. E-dot, B-dot probes
351. Diode Detectors
352. Terminators

353. Attenuators
354. Adaptors
355. Differential Probes
356. Waveguide coupling
357. Signal Generator (up to ~ 18 GHz)
358. Coaxial High Power RF Stub Tuner
359. Coaxial Phase Shifter High Power RF
360. High Power RF Coaxial Line and Its Components
361. Coaxial High Power RF Switch
362. Antenna system
363. CRO
364. EHV Grade Oil
365. AMC for Fire Fighting
366. Fire Fighting upgrade
367. Copper Earthing Pits
368. O&M of 132kV SS and associated 11&22kV, 415V distribution system
369. Spares for 132KV & 11kV, OC/EF relay, Fire Fighting
370. 11kV / 415 V Distribution Transformer, 2 MVA
371. 415 V LT Panel
372. 11KV VCB Panel
373. 11KV Power Cables of various sizes
374. 132KV Lightning Arrester
375. High speed diesel fuel
376. LT power cables of various sizes & PTFE cable
377. AMC of both 1700KVA DG sets
378. consumable spares for DG sets
379. Distribution Transformer spares
380. DG BATTERIES
381. ACB SPARES
382. Up-gradation of controllers in 1700KVA DG sets
383. Up-gradation of LT Panels
384. Licensing and conditioning of underground tank for Diesel Generators
385. VF Power Supply for ADITYA-U
386. Electrical Tools and tackles
387. Transformer overhauling
388. DCCT
389. Spares for existing power Supply
390. Control spares for power supplies
391. Manufacturing and supply of VW converter parts
392. CTC conductor
393. Air core reactor
394. Crystal : 100 MHz
395. VCO-1 : 5-10GHz
396. VCO-2 : 13-20GHz
397. Freq Doubler-1 : 6-10GHz (input)
398. Freq Doubler-2 : 13-20GHz (input)
399. Amplifier : 6-20GHz

400. Balanced Mixer : 26-40 GHz
401. Freq. Sources (up to 40 GHz)
402. Signal source (analog)
403. Dry Cryogenic Detection System
404. Exposed Linear Encoder with Grating Scale
405. Wire Grid Polarizers in THz range
406. Silicon carbide based black body hot calibration source
407. Fixed Frequency Gunn Oscillators (E,W- band)
408. Balanced SSB Mixers (E,W- band)
409. Band Pass & Notch Filters (E,W- band)
410. Isolators (E,W- band)
411. Low Noise Amplifiers (1-20 GHz)
412. Noise Source (E,W- band)
413. Passive Waveguide components like directional couplers, Twists, etc.
414. Multi – channel IF Receiver (1 -20 GHz)
415. PLL source - 100 GHz
416. PLL source - 101 GHz
417. Biased balance mixer (100GHz, w-band)
418. Horn antenna (w-band)
419. Directional coupler (w-band)
420. DRO 7 GHz
421. DRO 16 GHz
422. DRO 17 GHz
423. Frequency Multiplier for w-band
424. IQ demodulator (MHz range)
425. Filters and amplifiers (MHz)
426. Waveguides parts in W,F, and D-band
427. Waveguide Filters (W, F, D- Band)
428. Lab furniture
429. Passive Waveguide Components: Directional Couplers, Bends, Twists etc.
430. Source: Gunn Oscillators, VCO's, PLDRO's etc.
431. Amplifiers: Power and Low Noise
432. Balanced / IQ Mixers
433. Band Pass and Notch Filters
434. Noise Sources
435. Directive Antenna
436. Schotkky Detectors
437. Cryogenic Detectors
438. Exposed Linear Encoder with Grating Scale
439. Wire Grid Polarizers in THz range
440. Fused Silica View port
441. Line Laser
442. Tripod, Motors & its accessories for Antenna Movement
443. Up-gradation of existing R & S VNA (ZVA-50) for Time gating facility
444. Material Measurement set-up
445. Cables & Connectors (0 - 40 GHz)
446. Power Supply (30 V, 5A)

447. Supply and Testing of 200kW Solid State Rectifier with Crowbar Switch Panel
448. Power supplies
449. Integrated circuits
450. Passive components
451. Racks & Chassis
452. Test and measurement Instruments
453. Programmable logic devices
454. Soldering station
455. PLC systems for automation
456. Transformers
457. Evaluation boards
458. Laptops
459. Wavelength Meter with Accessories
460. Acoustic Optical Modulator & Driver unit
461. Piezo Mirror Shifter and modulators
462. Accessories to for the Excimer laser system
463. Accessories to for the diode laser system
464. Spectrum Analyzer (DC to 100 MHz)
465. Photo-multiplier Tube Detectors and accessories
466. Control panel of AMPS
467. Flow analysis and modeling software for compressible fluid (gaseous) systems
468. Edge welded bellows
469. SS 316 VCR fittings
470. Data logger
471. Rare earth Magnets(NdFeB/SmCo)
472. Pipe feed through fittings
473. Flush face melt pressure sensor for liquid metals
474. Differential pressure transmitter of gaseous medium
475. Variable Frequency Drive for electric motor
476. High temperature bellow sealed valve Make Swagelok
477. Pb-Li ingots
478. Pb-Li to Air heat exchanger
479. NI make Data Acquisition module
480. VEGA make Radar Level Transmitter
481. Emerson Make Radar Level Sensor
482. Vortex Flow Meter
483. Pb-Li to Pb-Li recuperator
484. Therminol-55 (Heat Transfer Fluid)
485. High temperature compatible strain gages
486. Digital mass flow meter
487. Input Modules for Eurotherm T2550 Programmable Automation Controller
488. VFD Control panel for Canned Motor Liquid Metal Pump
489. Supply and Installation of Cable trays for EHCL Lab
490. Various Type of Electrical Heaters
491. UPS
492. Power Cables for VFD applications
493. Aluminum alloy plate

494. Floor crane
495. ON/OFF pneumatic valves
496. Solenoid valves
497. Electric motor for liquid metal pump
498. Fabrication of MHD test mock ups
499. Cover gas pressure transmitter
500. Circulation type heater for Pb-Li
501. Temp control panel
502. Mass flow indicator and controller
503. SS flexible hose with 16 & 25 KF flange
504. SS 316 Ferrule fittings for 1/8, 1/4 & 3/8 inches sizes (Connectors, Reducers, and Unions etc.).
505. SS 316 Tubing 1/4, 3/8 inches
506. SS 316 Tubing 1/4, 3/8 inches SS 316/304 Ball and needle valves
507. Digital gauges/transmitters
508. Cylinder trolleys
509. Recirculating chiller
510. Pressure transmitter
511. UHV DN 160 CF Manual Gate Valve
512. Vacuum chamber, heating system and other accessories of the system for reactive sputter coating inside a pipe
513. Fabrication and supply of Magnet Coils for Hydrogen Isotope Permeation Barrier Coating System
514. Lithium & titanium-based chemicals
515. Chemicals for lithium titanate preparation
516. Spares & Consumables for simultaneous thermal analyzer, model Linseis STA PT 1600
517. Spares & Consumables for Laser flash apparatus. Model Linseis LFA 1000
518. Spares & Consumables for high-temperature dilatometer, model Netzsch Expedit Select
519. Spares & Consumables for mercury porosimeter, model Quantachrome PM 60
520. Spares & Consumables for planetary ball mill, model Fritzsche P5
521. Spares & Consumables for particle size analyzer, model Brookhaven nanobrook omni
522. Spares & Consumables for extruder and spheronizer model Umang UICE lab
523. Spares & Consumables for Helium pycnometer model Instruquest
524. Spares & Consumables for pellet press model techno search instruments
525. Spares & Consumables for laboratory freeze dryer model model SP scientific BTP9EG
526. Spares & Consumables laboratory sieve shaker model electrolab
527. Rotary pump and its subsystems
528. X-Ray fluorescence spectrometer
529. Spares & Consumables for nabertherm muffle furnaces
530. Spares & Consumables for laboratory vacuum oven
531. Spares & Consumables laboratory deep freezer model REMI
532. Spares & Consumables for keysight datalogger
533. Gas flow distribution line
534. Thyristor & PID controlled power supply for compatibility experiments
535. Pressure and vacuum gauges, Vacuum valves and its accessories
536. Laboratory Rheometer
537. Peristaltic pump and its accessories
538. Alumina crucibles

539. DC power supplies
540. Platinum wires of different diameter
541. Load cell with indicator
542. True RMS Clamp meters
543. A universal type datalogger
544. Inconel material machined parts
545. A mass flow controller
546. A differential pressure transducers
547. Thermal sensors
548. Displacement sensors
549. Twin Jet Polishing Machine
550. Low speed Cutting Machine
551. Filler wire P91, RAFMS, 316L, 309L, Ni alloy
552. 316LN plates
553. Spares and Consumables for Metallography Instruments
554. Spares and Consumables for Mechanical Testing Instruments
555. Mass Flow controllers
556. Mass flow meters
557. Thermocouples
558. Heat flux sensor
559. Data loggers
560. Heaters and heating elements
561. Test channels and mockups
562. Insulations
563. Piping connectors and accessories
564. Power supply
565. Belt Grinder
566. Spares for Optical and Stereo Microscopes
567. SS316L Seamless pipes (and fittings) of different size e.g. DN 100, DN50, DN25, DN 40 etc.
568. Structural steels of different types e.g. ISMC channels, sheets, plates and bolts/fasteners, etc.
569. Insulation material of different thickness
570. Temperature and pressure transmitter and DPT for helium and water application
571. Flow meter for water application (Rotameter for chiller)
572. Flexible pipes (hose/bellows)
573. Manual ball valves for isolation/vacuum purpose (spare)
574. Replacement Batteries for UPS
575. Multicore instrumentation cables
576. Communication cables
577. High voltage DC power supply
578. Helium leak detector with helium pumping speed greater than equal to 2.5 l/s on buy-back basis.
579. Helium leak detector with helium pumping speed greater than equal to 10 l/s on buy-back basis.
580. Indenting concertina coil and Chain Link fencing for the work of increase in height of Compound wall at IPR campus
581. Supply, routing and installation of busbar
582. Supply of 300kV DC Earthing System
583. Electroformed Mesh
584. RF Detectors

585. Magnetron Sputtering Gun
586. Full range vacuum gauge
587. Water Cooler
588. IR Camera
589. Manipulator
590. Dehumidifier
591. CZT based X-ray spectrometer for the measurements of X-ray in 30 keV - 300 keV
592. Multipocket electron beam evaporator
593. 400k Ohm, 250 watt Non inductive Wire wound resistor
594. 100k Ohm, 100 watt Non inductive Wire wound resistor
595. ONLINE 5 KVA UPS with SNMP CARD
596. Rotary encoders (Absolute)
597. Rotary encoders (Incremental)
598. ISO 200 F UHV gate valve
599. Chiller Unit for Turbo Molecular Pump (TMP)
600. Transient field calibration set-up
601. Isolation transformers
602. Permanent Magnets
603. In-line IV probe
604. MS Sections (Angle, C-channel, I-Beam, Flat, SHS, RHS, etc.) of various sizes
605. Dehumidifier
606. Handheld digital multimeter
607. MF controllers (0 - 100 sccm)
608. Roots / Scroll Oil free Dry Vacuum Pump with exhaust silencer
609. Manually operated Fine / Precision Gas dosing valve / Manual leak valve
610. Manually Operated Vacuum Ball valve
611. HV Sine Wave Generating HF Power Supply
612. 20 kHz Variable High Voltage Power supply
613. Small Table top Tesla Transformer
614. Compact Table top Tesla Transformer
615. High Voltage rectifier Diodes
616. 3-Axis Stabilized Handheld Gimbal
617. Superconductor-Yttrium barium copper oxide (YBCO) disk (Diameter=50mm, Thickness=10mm)
618. Superconductor-Yttrium barium copper oxide (YBCO) disk (Diameter=28mm, Thickness=10mm)
619. High frequency transformer core
620. Air compressor
621. Femtosecond Laser system
622. Dry scroll vacuum pump
623. Vacuum Test Facility (1. Internal diameter of vessel - 1.5 m and Overall length - 3.5 m; 2. Xenon pumping speed : 30,000 l/s; 3. Vacuum gauge: 1000 mbar to 1e-7 mbar)
624. MS sheets of various sizes
625. Hylam Sheet and round bar of various sizes
626. Perspex (Acrylic) sheet and round bar of various sizes
627. CAD-CAM software (Mastercam, Solidworks, etc.)
628. High Vacuum Chamber With Support Stand For Large Area Plasma Source

629. Ceramic 5kV Electrical Isolator (Maximum Pressure: 17bar; Temperature range: -269 °C to 350 °C, Voltage isolation: 5kV; Compatibility with vacuum during operation: $\leq 10^{-6}$ mbar outside; Helium leak tightness: 10^{-9} mbar-l/s or better (at ambient conditions); Size - O.D.32.00±0.25mm, I.D. 29.00 ±0.25mm; Qty - 10Nos.
630. Supply of 300kV DC Connector (Plug) and Receptacle (Socket) assembly.
631. Self-contained Breathing Apparatus (SCBA) as per the IS 10245 Part-2.
632. Vacuum chamber with accessories for nanopowder synthesis.
633. Safety relief valves for Liquid Nitrogen service.
634. Flow diverter ball valves for Liquid Nitrogen service.
635. Vacuum View ports
636. Vacuum feed through
637. Consumables: Copper tape, Aluminum tape
638. Full range vacuum gauge
639. Swagelok tube fittings: Ferules nuts, VCR fittings, tube fitting connectors for high pressure application
640. Gas flow valves
641. Needle valves
642. Angle valves
643. PLC based control systems with associated input/output modules and control box.
644. Fabrication related to vacuum and cryo systems, flanges and associated components
645. Laser diode and accessories
646. Photo diode and accessories
647. Rotary vane pump
648. Digital storage oscilloscope with 4 channels and 100 MHz bandwidth
649. CMOS camera with 300 fps for Schlieren Imaging and acoustic field analysis related to nanopowder collection mechanism
650. Ultrasonic Cleaner
651. WR340 rectangular waveguides
652. 19 inch/ 42U Enclosures Networking/ Server rack
653. Digital Storage Oscilloscope-Qty:01
654. Two channel function generator-Qty:01
655. RF simulation software for active and passive devices
656. VIS Spectrometer
657. Magnet DC Supplies
658. Chiller-1TR-3no.s
659. Chiller-3TR-1no.s
660. Experimental Chambers
661. Vacuum Vessel (High Density Helicon System)and consumables[present]
662. UHV Gate valves 200 ISO [present]
663. Xe Gas High purity (300 Ltrs)
664. Kr Gases (500ltrs)
665. Materials (Copper, Steel, Aluminum) for lab purpose
666. Magnets [present]
667. Electronics & Electrical Items
668. Function Generator
669. Signal Generator
670. Oscilloscope (500MHz DSO)

671. Oscilloscope (200MHz-analog DSO)
672. Electronics Multimeter (4 nos)
673. Electrical Panel Distribution System
674. 100A Cables 500 mtrs
675. 1kVA Isolation Transformers
676. Diagnostics Cables and Electronics circuits and Amp etc. related items
677. Instrumentation feedthrough [present]
678. (Vac & High Current & High Voltage)
679. Ceramics Consumables
680. Quartz Plasma source tubes
681. Permanent Magnets Rare Earth (NdFeB)
682. Laboratory Storage Items Almirahs
683. Lab Tool Trolleys and others
684. UHV compatible re-entrant viewport
685. Laboratory bench with electrical sockets
686. Toolkit filing cabinet
687. Supply of 11 kV harmonic filter inductor
688. Digital Vernier Caliper for measurement purpose
689. Procurement of process pump with VFD for secondary cooling system of HHFTF
690. Electronic Water Conditioner
691. Procurement of tube fittings of various sizes and sizes: 100 Nos (approx.)
692. Pipes of various sizes: 2 inch, 1 inch, 1/2 inch of sch-80: 30 meter (approx.)
693. Fabrication, Assembly and Testing of target handling system for HHFTF
694. Fabrication of extension chamber
695. Railing system / trolley arrangement & modifications in existing target handling system
696. Repairing of Magnetron sputtering system and its component such as MFC
697. Magnetron sputtering heater parts
698. Tungsten alloy Rod
699. Upgradation of SCADA of Vac Brazing Furnace
700. Power conditioning equipment for HTTD laboratory in new lab building (Stabilizers, Isolation Transformers, Harmonic filter)
701. Hire external agency to do Market Survey to identify probable customers from plasma spray coating industries and their requirements of tungsten electrodes including Technical Specifications & Quantity of Electrodes.
702. Repairing of Laser Flash System
703. Modification of hardware interlock system of DACS-HHFTF
704. Machining of parts of helium cooled divertor.
705. Graphite block
706. Cable, Connectors, Junction Boxes (to interface EHCL target handling system with DACS-HHFTF)
707. Vacuum Feedthroughs (Electrical, BNC and Thermocouple) for Helium cooled target handling system
708. PXI ROFINET interface module for DACS or OPC Server license (to establish interface between EHCL with DACS-HHFTF)
709. AMC for Gleeble 3800 system.
710. K type Thermocouples (50 Nos.)
711. MS Plates of different sizes

712. MS Square Channels of different sizes
713. SS 316L Pipes of different sizes
714. Ball valves for vacuum line
715. Vacuum pump (rotary)
716. Fabrication of Lithium Injector
717. Fabrication of Sn-Li based liquid metal loop
718. PID based temperature control panel for Sn-Li based liquid metal loop
719. fiber glass flexible heaters, spiral heaters, and different types of heaters elements
720. Earthing for HHFTF (Earth electrode, earth strip, etc)
721. Procurement of HV gate valve
722. 1/2" bellow seal valve
723. Procurement of Water chiller for Brazing Furnace
724. KF 25, KF 40 and KF 50 Right angle valves for Vacuum application
725. KF 25, KF 40 and KF 50 Stainless steel flexible bellows (hoses) for Vacuum application
726. Up-gradation of 82.6GHz Gyrotron for ECRH system in SST-1
727. Liquid Helium
728. Electronic components Solid state crowbar (Thyristors, Capacitor, Resistors, etc.)
729. Electronic components Solid state Switch (IGBTs, Capacitor, Resistors, etc.)
730. 30kV-100mA Power supply
731. Data Acquisition and control (DAC) system a) PXI based DAC system b) Electronic cards for the DAC system
732. Power supplies for Gyrotrons (Filament, Ion-pump, Magnet etc...)
733. Electric equipment's like CTs, HV Probes, HV cables, etc.
734. Electronics and fiber optic components
735. Mechanical components (vacuum, cooling including LN2 cooling, etc.)
736. Microwave components like detectors and low power components