


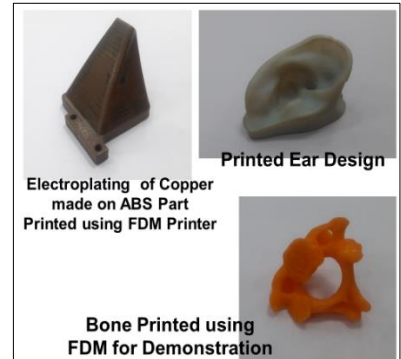
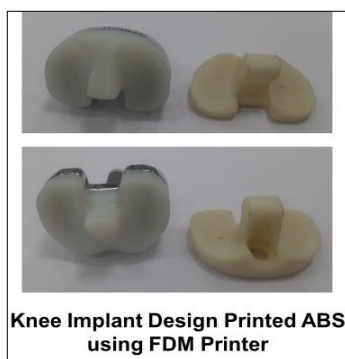
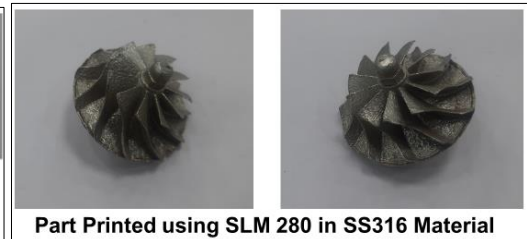


# **Research Laboratories**

## Rapid Prototyping Laboratory:

Equipment List		Cost (Rs in Lakhs)
		
<b>Fortus 450mc</b>	<b>SolidScape and Formlab</b>	<b>SLM 280 Metal Printer</b>
StratasysConnex 350		96.1
Artech Spider 3D scanner		12.48
3D Scanner David SLS		6.75
Laser Head for AM Machine SLS		32
Vision Capturing & Measuring System Rapid-I		7.99
Auto Cast XI, E foundry, Melt IT labware		19.64
SLM 280		300
Fortus 450 FDM		150
F170		26
Formlab		5.56
SolidScape		50
<b>TOTAL</b>		<b>706.52</b>

### Applications of Major Machines:



## FAB LABORATORY

Equipment List	Cost (Rs in Lakhs)
CNC Router	10.96
Epilog Laser Cutter	6.78
3D printer flash forge guider 2	1.4
Instek Function generator	0.18
Modela mini mill machine	22.5
Advanced electronic work bench	5.56
<b>TOTAL</b>	<b>47.38</b>

### Applications of Major Machines:

**CNC Wood Router:** For cutting 2D & 3D profiles on plywood, Wood & MDF Objects.

**Work size** 1219 mm X 2438mm

**Material Support:** Soft wood block, Plywood, MDF



### **PCB milling Machine:**

For SMD PCB Fabrication. Size-220mm X 160mm  
Material Support: FR4, Modeling Wax.



**CO<sub>2</sub> Laser Engraver:** For Cutting of complex Acrylic 2D Profile on Acrylic and soft materials.

**Work size** 300mm X 600mm

**Material Support:** Wood, Acrylic, AlumaMark, Painted Brass, Glass Laserable Plastic, Leather, Marble, etc.



**Vinyl Cutter:** Radium cutting, flexible PBCs & Signboards

**Work Size-** Width:22.9" (584mm) Length: 984" (25m)

**Material Support:** Redium. Copper Foil.

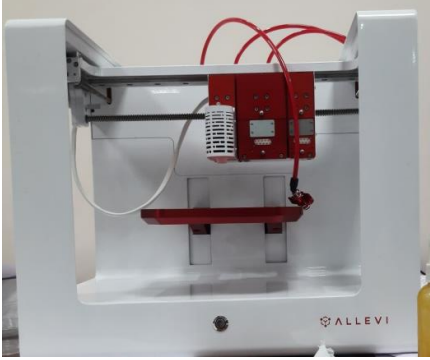



### **Advanced Electronics Workbench:**

Electronics testing workbench includes DSO, Power supply, Function generator, Soldering station & heatgun etc.



## RESEARCH LABORATORY

Equipment List	Cost (Rs in Lakhs)
 <p><b>Bioprinter</b></p>	 <p><b>Hybrid Micro EDM</b></p>
Electrospinning Apparatus	9.73
POP Plating Process	5.04
Dynamic Mechanical Analyzer	25.23
Auto Cast –XI	19.64
Hybrid Micro EDM	144.58
BioPrinter	27.5
<b>TOTAL</b>	<b>231.72</b>

### Applications of Major Machines:

#### The bioprinter for every application.



The Allevi 3 bioprinter empowers you to recreate the body outside the body. No matter what cell line, bioink, or geometry – Allevi 3 puts the power of customization in your hands.

#### Applications of Hybrid EDM Machine

- High stiffness gantry structure mounted on Natural granite table for high precision and damping characteristics
- Precision ball screw drive system with fine pitch lead screw
- High precision pre-loaded linear guide way with more than 350N/  $\mu\text{m}$  stiffness
- High resolution of 0.1 $\mu\text{m}$  optical scale based linear encoder for precise closed-loop feedback
- PC based CNC motion controller with 0.1 micrometer (100 nanometer) programming resolution
- Mikrotools in-house developed touch screen based graphic user interface (GUI) for an operator friendly machine operation
- Electrically isolated spindle to support traditional and nontraditional micro machining processes
- Travel: 200 mm (X axis) x 100 mm (Y axis) x 100 mm (Z axis)
- Compact floor footprint: 3 m X 2 m



Metal Moulding



Iron Casting



Rail Girders



Metal Process





Engine Parts



Gears

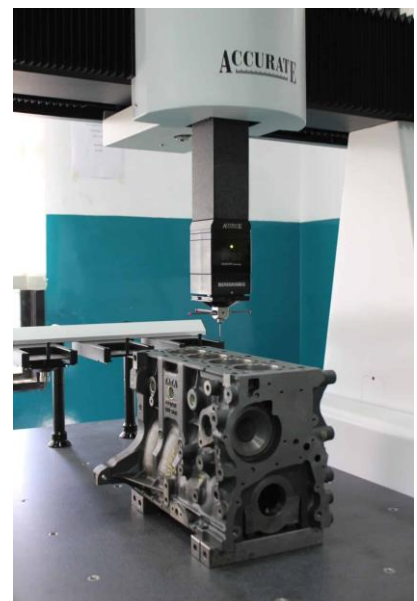
## Metrology Laboratory

Equipment List		Cost (Rs in Lakhs)
		
<b>Profile Projector</b>	<b>Coordinate Measuring Machine</b>	
Slip gauge set		8.43
Surface roughness tester sj410-		2.23
Laser interferometer		14.5
Profile projector v-12a		4.01
Dynamometer 9257b		24.6
Surface roughness tester sj20ip		1.55
Rigid optical table		5.25
Autocollimator with accessories		5.8
Micro hardness tester		7.85
Atomic force microscope		23.65
2d measurement system		3.89
Hexagon Articulated arm		25
CMM coordinate measuring machine		23.6
<b>TOTAL</b>		<b>150.36</b>

### Applications of CMM Machine:

#### Features


- Proven design with all granite construction for stable performance, Wrap around air bearing construction for high acceleration and stability.
- Zero hysteresis belt drive for smooth repeatable movement
- X & Z axis guide ways made hollow reducing mass to achieve high acceleration
- In built Y axis for better homogeneity of material
- High resolution Reader Head for better accuracy



## Machine Tool Laboratory

Equipment List		Cost (Rs in Lakhs)
		
EDM Drill M/C		5.1
CNC 3D Milling/ Engraving machine		11.3
CNC EDM Machine		28.3
Kitsler tool force dynamometer		24.5
25T Hydraulic Press		16.65
PVM 40 VMC machine		19.5
<b>TOTAL</b>		<b>105.35</b>


## Robotics & Automation Laboratory

Equipment List		Cost (Rs in Lakhs)
		
Sg 5/6 – ut robotic arm		1.5
Robot industrial arm		2.55
Motoman SV 3X plus X RC Controller		14.37
Scorbot ER VII		8.81
Humanoid Robot		8.18
<b>TOTAL</b>		<b>35.41</b>


## Non-conventional Laboratory

Equipment List		Cost (Rs in Lakhs)
		
Edm		27.7
Electrospinning apparatus		9.7
<b>TOTAL</b>		<b>37.4</b>


## TEROTECHNOLOGY LABORATORY

Equipment List	Cost (Rs in Lakhs)
	
Atomic Absorption Spectrophotometer	8.05
Direct Reading Ferrograph Model DR 5	14.96
Dual Slide Ferrogram Maker: Model FMIII	19.95
Bi-chromatic Optical Microscope (Olympus BX 51)	15.09
<b>TOTAL</b>	<b>58.05</b>


## MECHATRONICS LABORATORY

Equipment List	Cost (Rs in Lakhs)
	
PLC based Lift Simulator Model	9.00
PC-PID Based Multi- Process Control system	5.50
PLC based Bottle Filling Plant	11.11
<b>TOTAL</b>	<b>25.61</b>

## Ergonomics Laboratory

Equipment List	Cost (Rs in Lakhs)
	
Pressure mats	5.26
HAND FORCE DYNAMOMETER SET	1.85
Uniq-q12 ecg machine	6
<b>TOTAL</b>	<b>13.11</b>

## CAD/CAM Laboratory

Equipment List	Cost (Rs in Lakhs)
 <p><b>Computers with high end softwares      CNC Trainer</b></p>	
<b>Computer Lab I</b>	
H-Simulator & P Simulator (Festo Fluid Sim)	6.63
Simufact Forming	6.00
Automation Studio	11.60
<b>Computer Lab II</b>	
ProModel	1.82
Witness	3.72
CAM Lab CNC	9.05
ArtCAM Software	5.5
Simulia abaqus Research academic teaching suite	15
Rhino 7 and Rhino E	1.86
Magic RP	29.2
<b>TOTAL</b>	<b>90.38</b>

## ERP LABORATORY

Equipment List	Cost (Rs in Lakhs)
	
SAP Logon ECC-6	4.08