

CAM/CAM – LAB

CAD/CAM LAB



CAD/CAM LAB SOFTWARE

- CREO 1.0
- Solidworks
- Ansys Academic 18.2
- Ansys CFD18.2

CAD/CAM LAB



CAD/CAM LAB SOFTWARE

- Abaqus 6.3
- FLEXSIM
- CADEM CAD-CAM Simulation
- MSC ADAMS

COMPUTER LAB



COMPUTER LAB

- Auto CAD
- Turbo C & C++

SMC HYDRAULIC TRAINER KIT



SMC HYDRAULIC TRAINER KIT

Specification:

- Hydraulic unit
- Power : 1.1KW
- Rotating speed : 1420r/Min
- Voltage : 380V,50Hz/60Hz
- System flow : 4.5L/min
- Working pressure : ≤ 6 Mpa
- Workbench size : 1590 X 760 X1650mm
- Aluminum panel size: 1200 (L) X 600 (W)

BASIC PNEUMATIC & ELECTRO PNEUMATIC TRAINER KIT



Specification:

- Power Supply: AC 220 V
- Power Consumption: ≤ 0.3 kVA
- Dimensions: 1681 mm x 180 mm x 140 mm

FREE & FORCED VIBRATION KIT WITH SIGNAL GENERATOR



Specification:

- Nett dimensions and weight:
- 1280 wide x 450 mm front to back x 800 mm high (assembled) and 80 kg
- Other parts approximately 4 k
- Storage tray and tools
- Spring for beam and spring tests
- Dashpot damper
- 500 mL of non-toxic fluid (for dashpot damper)
- Vibration absorber

COMPUTATIONAL LAB

COMPUTATIONAL LAB



COMPUTATIONAL LAB SOFTWARE

- CREO 1.0
- SOLIDWORKS
- ANSYS Academic 18.2
- ANSYS CFD18.2
- ABAQUS 6.3
- FLEXSIM
- CADEM CAD-CAM Simulation
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ENGINEERING WORKSHOP



WORKSHOP PRACTICE (ME 151 ES)

LIST OF EXPERIMENTS.

1. Carpentry shop
 - Cross lap joint with wood
 - End Lap/ Tee Lap Joint with wood
2. Fitting shop
 - Step cut with Mild Steel flat
 - Semicircular and V-cut with Mild Steel flat
3. Sheet metal shop
 - Funnel with GI Sheet
 - Rectangular box with GI Sheet
4. House wiring
 - Cleat wiring
 - casing wiring
5. Welding shop
 - Butt joint using Arc Welding
 - Lap Joint using Arc Welding
6. Machine shop
 - Step turning on MS cylindrical rod
 - Taper turning on MS cylindrical rod
7. Foundry shop
 - Preparation of casting using single piece pattern
 - Preparation of casting using core pattern
8. Smithy shop
 - Forging of square shape peg from cylindrical work piece
 - Forging of square shape L-bend peg from cylindrical work piece

ENGINEERING WORKSHOP

CARPENTRY



FITTING



HOUSE WIRING



SHEETMETAL



FOUNDARY



SMITHY



MACHINE SHOP



WELDING



| EQUIPMENT | SPECIFICATIONS | | | | | | | | | | | | | | |
|--|--|-------------|----------------|------------------------|--|----------------------|-------|-----------------------|------------------------------|--------------------|--|------------------------|---|----------------------|---|
| <p style="text-align: center;">SINGLE DISC AUTOMATIC GRINDING/POLISHING MACHINE</p>  <p>The image shows a white and green single disc automatic grinding/polishing machine. It has a control panel with a digital display and several buttons. A specimen holder is mounted on top of the machine. In the background, there is a blue sign that reads 'PURCHASED UNDER TEQIP-III' and lists details about the machine's purchase, including the cost (₹ 5,00,182/-) and the department (PG and RESEARCH PROGRAMMES 60%).</p> | <table border="1"> <thead> <tr> <th data-bbox="863 472 1098 506">PARTICULARS</th> <th data-bbox="1098 472 1377 506">SPECIFICATIONS</th> </tr> </thead> <tbody> <tr> <td data-bbox="863 506 1098 618">Type of machine</td> <td data-bbox="1098 506 1377 618">Single Disc Automatic Grinding / Polishing Machine</td> </tr> <tr> <td data-bbox="863 618 1098 651">Disc diameter</td> <td data-bbox="1098 618 1377 651">10</td> </tr> <tr> <td data-bbox="863 651 1098 685">Variable speed</td> <td data-bbox="1098 651 1377 685">50 to 600 rpm</td> </tr> <tr> <td data-bbox="863 685 1098 763">Led display</td> <td data-bbox="1098 685 1377 763">Rotational speed / timer</td> </tr> <tr> <td data-bbox="863 763 1098 875">Specimen holder</td> <td data-bbox="1098 763 1377 875">Dia. 15 – 60 mm Thickness 10mm – 25 mm</td> </tr> <tr> <td data-bbox="863 875 1098 981">Magnetic disc</td> <td data-bbox="1098 875 1377 981">for easy removal magnetic disc should be mounted</td> </tr> </tbody> </table> | PARTICULARS | SPECIFICATIONS | Type of machine | Single Disc Automatic Grinding / Polishing Machine | Disc diameter | 10 | Variable speed | 50 to 600 rpm | Led display | Rotational speed / timer | Specimen holder | Dia. 15 – 60 mm Thickness 10mm – 25 mm | Magnetic disc | for easy removal magnetic disc should be mounted |
| PARTICULARS | SPECIFICATIONS | | | | | | | | | | | | | | |
| Type of machine | Single Disc Automatic Grinding / Polishing Machine | | | | | | | | | | | | | | |
| Disc diameter | 10 | | | | | | | | | | | | | | |
| Variable speed | 50 to 600 rpm | | | | | | | | | | | | | | |
| Led display | Rotational speed / timer | | | | | | | | | | | | | | |
| Specimen holder | Dia. 15 – 60 mm Thickness 10mm – 25 mm | | | | | | | | | | | | | | |
| Magnetic disc | for easy removal magnetic disc should be mounted | | | | | | | | | | | | | | |
| <p style="text-align: center;">INVERTED METALLURGICAL MICROSCOPE</p>  <p>The image shows an inverted metallurgical microscope with a white base and black upper components. It has a stage with a circular opening for the specimen, and several objective lenses are visible. The microscope is placed on a dark wooden surface.</p> | <table border="1"> <thead> <tr> <th data-bbox="879 1160 1098 1193">PARTICULARS</th> <th data-bbox="1098 1160 1361 1193">SPECIFICATIONS</th> </tr> </thead> <tbody> <tr> <td data-bbox="879 1238 1098 1294">Type</td> <td data-bbox="1098 1238 1361 1294">Daskh</td> </tr> <tr> <td data-bbox="879 1294 1098 1373">Model No.</td> <td data-bbox="1098 1294 1361 1373">DQS41</td> </tr> <tr> <td data-bbox="879 1373 1098 1451">Magnification</td> <td data-bbox="1098 1373 1361 1451">50X,100X,200X, 500X,1000X</td> </tr> <tr> <td data-bbox="879 1451 1098 1608">Observation</td> <td data-bbox="1098 1451 1361 1608">Binocular inclined 45 Degree & Rotatable 360 Degree</td> </tr> </tbody> </table> | PARTICULARS | SPECIFICATIONS | Type | Daskh | Model No. | DQS41 | Magnification | 50X,100X,200X, 500X,1000X | Observation | Binocular inclined 45 Degree & Rotatable 360 Degree | | | | |
| PARTICULARS | SPECIFICATIONS | | | | | | | | | | | | | | |
| Type | Daskh | | | | | | | | | | | | | | |
| Model No. | DQS41 | | | | | | | | | | | | | | |
| Magnification | 50X,100X,200X, 500X,1000X | | | | | | | | | | | | | | |
| Observation | Binocular inclined 45 Degree & Rotatable 360 Degree | | | | | | | | | | | | | | |

MATERIAL TESTING LABS

MUFFLE FURNACE



| PARTICULARS | SPECIFICATIONS |
|---------------------------|--|
| Type/Size | Muffle Furnace 150*150*200mm ³ |
| Material Loading Capacity | Upto 50kg |
| Max. Temp | 1000°C |
| Power | 20A,220V AC |
| Accuracy | + 2°C |
| Controller | PID Controller |

DIGITAL ROCKWELL HARDNESS TESTING MACHING



| PARTICULARS | SPECIFICATIONS |
|-----------------------|--|
| Test Scales | HRA, HRB, HRC |
| Max. Test Height (mm) | 295 |
| Depth of Throat (mm) | 148 |
| Load Control | Automatic |
| Test Force kgf | 150 |
| Dimensions | 470(Length)* 627(Height)* 80(Weight) |

ADVANCED MANUFACTURING MACHINES

CNC EDM



SPECIFICATIONS

| | |
|------------------------------------|----------------------|
| • Description | • Size |
| • Work tank dimensions [mm] | • 750 x 400 x 350 |
| • Work table dimensions [mm] | • 500 x 300 |
| • Longitudinal travel [mm] | • 300 |
| • Transverse travel [mm] | • 250 |
| • Quill travel [mm] | • 200 |
| • Maximum work piece height [mm] | • 200 |
| • Maximum load on the table [Kg] | • 500 |
| • Tank capacity [Ltrs.] | • 450 |
| • Filtration | • 1-pulse generators |
| • Maximum working current [Amps] | • 60 |
| • Pulse on time [micro-sec.] | • 0.5 to 3000 |
| • Pulse frequency [cycle per sec.] | • 0.25 to 500 |

CNC MILLING



SPECIFICATIONS

| | |
|----------------------------|---------------|
| • Description | • Size |
| • Work table dimensions | • 770 *450 mm |
| • Pallets size | • 400 x 300 |
| • Spindle Power | • 3.7 kW |
| • Spindle Taper | • ISO 40 |
| • Spindle Speed | • 8000 RPM |
| • Cutting Speed | • 10 mm/min |
| • Maximum tool weight [Kg] | • 6 Kgs |
| • Maximum Tool Length | • 250 |
| • Controller | • Fanuc |
| • AC Servo Axes | • X Y Z |

CNC LATHE



SPECIFICATIONS

- Description
- Work table dimensions [mm]
- Distance between Centre
- Spindle Speed
- Spindle noise
- Spindle Motor
- Check Diameter
- Maximum bar Length
- Controller
- AC Servo Axes
- Size
- 350 *450
- 415 mm
- 4000 RPM
- A 2.5
- 7.5 kW
- 165 mm
- 25 -38
- SIEMENS 802D
- X Y Z

COORDINATE MEASURING MACHINES



SPECIFICATIONS

- Model:
- Range:
- Remarks:
- Accuracy:
- Guide system:
- Axis clamp:
- Fine feed:
- Scale:
- Loading
- Weight:
- Mass:
- CRYSTA-PLUS M544
- 500 x 400 x 400 mm
- With temperature compensation
- E0, MPE from:
- (3+0,4L/100) μ m
- Air bearing
- One-touch air clamp
- Entire range
- High accuracy linear encoder
- 180 kg
-
- 512 [kg]

ABRASIVE CUTTING MACHINE



SPECIFICATIONS

- Cutting Size 60mm dia
- 3HP motor, 3 Phase
- Spindle Speed 2800 rpm
- Wheel dia. 10" max

LATHE TOOL DYNAMOMETER



SPECIFICATION

| | |
|-------------|--------------|
| Tool Bit | Size 25 mm |
| Sensor Type | Strain Gauge |
| Force Range | 0 -500 kgf |
| Direction | XYZ |
| Resolution | 1 Kgf |

CYLINDRICAL GRINDER



SPECIFICATION

- Capacities : 600 mm
- Maximum grinding length : 500 mm
- Maximum grinding diameter : 100 mm
- Table feed : 0.005 to 5
- Work head motor : 5 H P
- RPM of grinding wheel : 1800 RPM
- Maximum Length of Table : 450 mm

VICKERS HARDNESS TEST



SPECIFICATION

| | |
|--------------------------------|---|
| System configuration | CCD camera, CCD camera attachment, personal computer, printer, 17-inch LC monitor, image board, connecting cable, exclusive control, and data processing software |
| Min. measurement unit | 0.1 μm |
| Measurement scale | HV (Vickers), HK (Knoop) |
| Measuring method | Light-and-dark image processing system |
| Repeatability | $\pm 0.5\%$ / approx. HV500 Load: 500gf |
| Manual measurement | Video line system |
| Automatic reading time | Approx. 0.3 sec / 1 indentation |
| Min. read indentation diameter | 10 μm (diagonal length) |
| Data processing | Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc. |



PIN ON DISC WEAR TESTER






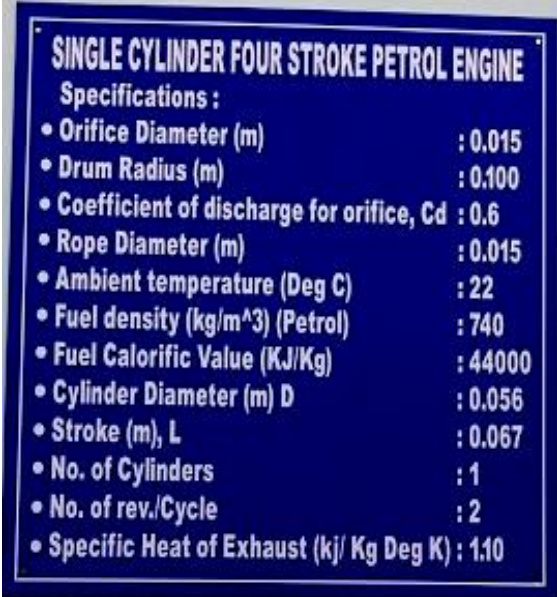
SPECIFICATION

- Load: 2 N to 1000 N,
- Speeds: 0.3 rpm to 3000 rpm and
- Three different types of wear profiles.
- Ducom Rotary Tribometer is a modular system comprising of environment control modules like heating (up to 1000 $^{\circ}\text{C}$), vacuum (up to 10⁻⁶ Torr) a
- humidity (up to 80 % RH).
- Ducom Rotary Tribometer complies with ASTM G99

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|--|--|
| <p>COMPUTERISED SUB – SONIC WIND TUNNEL</p>  | <div style="background-color: #000080; color: white; padding: 10px; border: 1px solid white;"> <p style="text-align: center; margin: 0;">COMPUTERISED SUB-SONIC WIND TUNNEL</p> <p>Specifications :</p> <ul style="list-style-type: none"> • Wind Tunnel Type : Low Speed Subsonic, Open Circuit, Suction type • Contraction Ratio : 9:1 • Honey Comb Construction : Square Cross-Section (Wood) • Test Section Size : 600 X 600 X 1200 mm • Test Section Velocity : 40 m/s • Fan Type : Axial Flow • Number of Blades : 9 • Motor Capacity : 15HP AC Motor • Motor Control : Ac Drive (50Hz Frequency) • Velocity Measurement : Pitot-Static tube connected to digital air velocity indicator • Speed Measurement : Proximity sensor connected to digital speed indicator • Force Measurement : Using Load cell connected to digital Load/Force indicator • Pressure Measurements : Using pressure sensor and multibank manometer • Angle Changing : Manually • Pitot Displacement : DC Motor connected to toggle switch • Power Requirement : AC 3Ph, 440V, 32A with Earth & Neutral Connection • Software used : Lab View • Computer Interface : RS485 </div> |
| <p>WIND TUNNEL</p>  | <div style="background-color: #000080; color: white; padding: 10px; border: 1px solid white;"> <p style="text-align: center; margin: 0;">WIND TUNNEL</p> <p>Specifications :</p> <p>Cascade Details :</p> <p>1. Turbine cascade :</p> <ul style="list-style-type: none"> No. of blades : 5 Axial chord : 100mm Span : 150mm Pitch chord ratio : 1.12 Design inlet angle : 45deg (from tangential) Zweifel loading coefficient : 1.18 Airfoil metal inlet angle : 38deg (from tangential) Airfoil metal exit angle : 23.7deg (from tangential) <p>2. Compressor cascade :</p> <ul style="list-style-type: none"> No. of blades : 5 Axial chord : 120mm Span : 150mm Pitch chord ratio : 0.728 Design inlet angle : 45deg (from tangential) Airfoil metal inlet angle : 46.8deg (from tangential) Airfoil metal exit angle : 90deg (from tangential) </div> |

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|--|--|
| <p>DOUBLE STAGE AIR COMPRESSOR TEST RIG</p>  |  <p>DOUBLE STAGE AIR COMPRESSOR TEST RIG</p> <p>Specifications :</p> <ul style="list-style-type: none"> • Length of Stroke L = 0.078 m • Bore diameter d = 0.0935 m • Diameter of orifice d_o = 0.011m • Diameter of pipe d_p = 0.022 m • Efficiency of Motor = 0.8 • Power supply : 1 Phase, 220 V AC • Water supply : 2LPM @ 1 Bar • Floor Area : 2.5 m x 1.25 m |
| <p>SINGLE CYLINDER FOURE STROKE PETROL ENGINE</p>  |  <p>SINGLE CYLINDER FOUR STROKE PETROL ENGINE</p> <p>Specifications :</p> <ul style="list-style-type: none"> • Orifice Diameter (m) : 0.015 • Drum Radius (m) : 0.100 • Coefficient of discharge for orifice, C_d : 0.6 • Rope Diameter (m) : 0.015 • Ambient temperature (Deg C) : 22 • Fuel density (kg/m^3) (Petrol) : 740 • Fuel Calorific Value (KJ/Kg) : 44000 • Cylinder Diameter (m) D : 0.056 • Stroke (m), L : 0.067 • No. of Cylinders : 1 • No. of rev./Cycle : 2 • Specific Heat of Exhaust (kj/ Kg Deg K) : 1.10 |

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|-----------|----------------|
|-----------|----------------|

COMPRESSION RATIO ENGINE TEST RIG



| VCR DIESEL ENGINE TEST RIG | | |
|------------------------------------|------------------|--------------|
| Specifications : | | |
| Make and Model | TV1 | Kirloskar |
| Cooling | Water cooled | Water cooled |
| No. of Cylinders | 1 | |
| Bore x Stroke | 87.5x110 | mm |
| Cubic Capacity | 0.661 | Ltr |
| Compression Ratio | 17.5 : 1 | |
| Rated Output KW/HP | 5.2 kW / 7.5 HP | |
| Rated Speed | 1500 | RPM |
| Specific Fuel Capacity(SFC) | 185+5% | gm/hp-hr |
| Lub oil Consumption | 0.8 of SFC | |
| Lub oil sump Capacity | 3.7 (Max.) | Ltr |
| Fuel tank capacity | 6.5 | |
| Engine Weight (dry) | 160 | kg |
| Starting | Hand Start | |
| Governing | Class "A2/B1" | |
| Combustion System | Direct Injection | |

RUSTON OIL ENGINE



| RUSTON OIL ENGINE | |
|---|-----------------------|
| Specifications : | |
| • B.H.P. | = 10.14 |
| • Speed | = 400 rpm |
| • Piston Diameter | = 14.28 cm |
| • Stroke length | = 26.67 cm |
| • Clearance volume | = 295 cc |
| • Effective circumference of the brake wheel | = $\pi(D+t) = 3.12$ m |
| • Air fuel ratio | = 18:1 |

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|--|---|
| <p data-bbox="220 376 841 409">4 STROKE TWIN CYLINDER DIESEL ENGINE</p>  |  <p data-bbox="922 504 1469 562">4 STROKE TWIN CYLINDER DIESEL ENGINE</p> <p data-bbox="938 566 1134 600">Specifications :</p> <ul data-bbox="922 600 1485 1025" style="list-style-type: none">• Make : Kirloskar• Speed : 1500 RPM• BHP : 7.5 Kw• No. of Cylinders : 2• Compression Ratio : 17.5 : 1• Bore : 87.5 mm• Stroke : 110 mm• Orifice Diameter : 20mm• Type of Ignition : Compression Ignition• Method of starting : Crank Start• Method of Cooling : Water Cooled• Method of Loading : Mechanical Loading |
| <p data-bbox="231 1137 831 1196">FOUR STROKE FOUR CYLINDER PETROL ENGINE TEST RIG</p>  |  <p data-bbox="981 1281 1437 1314">FOUR STROKE FOUR CYLINDER PETROL ENGINE TEST RIG</p> <p data-bbox="997 1319 1177 1352">Specifications:</p> <ul data-bbox="949 1352 1449 1720" style="list-style-type: none">• Engine : 4S 4C Petrol Engine• Fuel : Petrol• Compression Ratio : 8.5:1• No. of Cylinders : Four• Bore : 84 mm• Stroke Length : 82 mm• Starting : Self Start• Working Stroke : Four Stroke• Cooling : Water Cooled• Ignition : Spark ignition• Capacity : 1817 cc• Battery : 12V 45A• Alternator : 12V 45A |

THERMAL ENGINEERING LAB

Equipment

Specifications

AIR ZOZZLE TEST RIG



AIR ZOZZLE TEST RIG

Specifications :

- 1) Nozzle - Material Brass.
 - A) Convergent = 15° angle.
Inlet diameter = 11.11 mm
Exit diameter = 4.9 mm
Length = 30 mm
 - B) Convergent - Divergent
Convergent portion length = 7.5 mm
Divergent portion length = 30 mm
Convergent = 7.9 mm to 4.9 mm dia.
Divergent = 4.9 mm to 10.2 mm dia.
 - C) Pressure tapping No. 1 to 8.
- 2) FRL unit with - Filter regulator - lubricant unit,
1/2" dia. Size pressure gauge
- 3) Compressor - 0 - 14 Kg./Cm²
Make - K.N.D.
Discharge - 11.8 cfm.
- 4) Temperature indicator - For measurement of inlet and outlet in °C
Temp. Digital type
Make EUTACH system.
- 5) Pressure indicator in - For measurement of pressure of various tapping in kg./cm², Make - Krishtech.
- 6) Rotameter - Make Eureka = 13.4 gm./sec, Air flow.

AIR CONDITIONER TEST RIG





AIR CONDITIONER TEST RIG


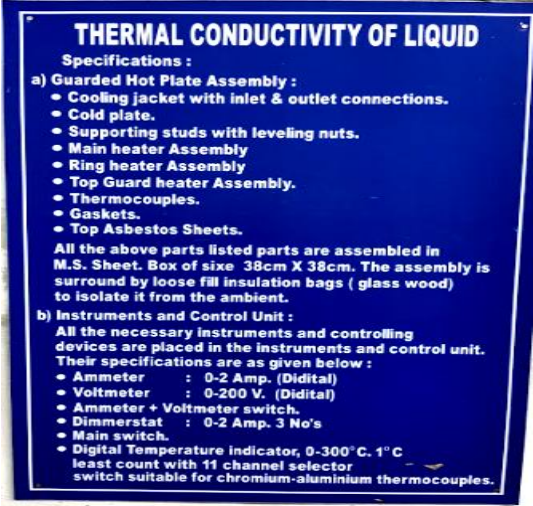
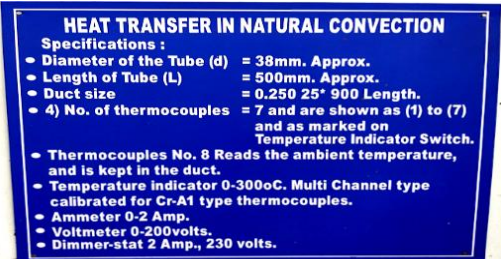

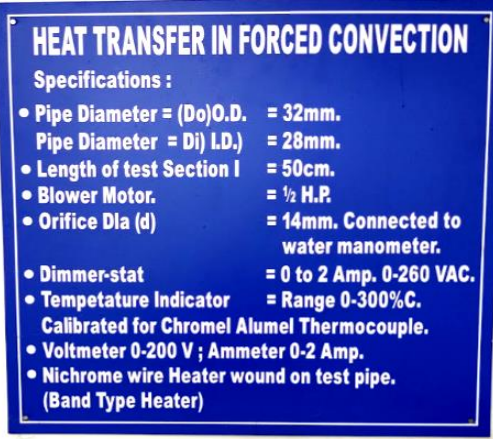
Specifications :

- Compressor Capacity : 1 Ton
- Refrigerant : R22
- Phase : Single
- Voltage : 220 V AC
- Frequency : 50 Hz
- Amperes : 5-15 Amp
- Floor Area : 1.5 m x 1.25m

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|---|--|
| <p data-bbox="311 376 735 409">HEAT PIPE DEMONSTRATOR</p>  <p>The image shows a white control panel for a heat pipe demonstrator with various gauges and switches. To its left is the experimental setup, which consists of a blue base with three heat pipes connected to a condenser tank.</p> | <p data-bbox="970 465 1382 506">HEAT PIPE DEMONSTRATOR</p> <p data-bbox="911 510 1107 539">Specifications:</p> <ul data-bbox="895 548 1453 902" style="list-style-type: none">• O.D of Stainless Steel Pipe : 32 mm• O.D of Heat Pipe : 32 mm• O.D of Copper Pipe : 32 mm• Length of the Pipe : 395 mm• Condenser tank : 150 mm x 100 mm x 100 mm• Condenser tank capacity : Approx. 1 Litre of water• Dimmerstat : 4 Amps• Heater : Band Heater 250W• Temperature Indicator : 0 - 300° C• Thermocouples : Chromel Alum Thermocouples• Voltmeter : 0 - 200Volts• Ammeter : 0 - 2 Amps |
| <p data-bbox="301 1238 743 1301">THERMAL CONDUCTIVITY OF INSULATING POWDER</p>  <p>The image shows a white control panel for a thermal conductivity experiment. To its right is a blue stand holding two concentric copper spheres, with a heater coil and insulating powder packed between them.</p> | <p data-bbox="903 1361 1461 1402">THERMAL CONDUCTIVITY OF INSULATING POWDER</p> <p data-bbox="916 1406 1070 1435">Specifications :</p> <ul data-bbox="900 1440 1453 1682" style="list-style-type: none">• Radius of Inner Copper Sphere $r_i = 50\text{mm}$• Radius of Outer Copper Sphere $r_o = 100\text{mm}$• Voltmeter : 0 - 100 - 200 V• Ammeter : 0 - 2 Amp• Temperature Indicator : 0 - 300° C• Dimmerstat : 0 - 2 amp, 0 - 230 Volts• Heater Coil• Insulating Powder - Asbestos Magnesia powder packed between the two spheres |

THERMAL ENGINEERING LAB

| Equipment | Specifications | |
|--|---|--|
| THERMAL CONDUCTIVITY OF LIQUID |  |  |
| HEAT TRANSFER IN NATURAL CONVECTION |  |  |
| HEAT TRANSFER IN FORCED CONVECTION |  |  |

THERMAL ENGINEERING LAB

| Equipment | Specifications |
|--|---|
| <p>CENTRIFUGAL BLOWER TEST RIG</p>  |  <p>CENTRIFUGAL BLOWER TEST RIG</p> <p>Specifications:</p> <ul style="list-style-type: none">• Phase : Single• Voltage : 220 V AC• Frequency : 50 Hz• Floor Area : 2.5m x 0.5 m• Blades :<ul style="list-style-type: none">◦ Forward Swept Impeller with +15° Angle◦ Backward Swept Impeller with -15° Angle◦ Radial Impeller• Length of Discharge pipe : 1.8m• Diameter of Discharge pipe : 0.8m |
| <p>UNSTEADY STATE HEAT TRANSFER</p>  |  <p>UNSTEADY STATE HEAT TRANSFER</p> <p>Specifications :</p> <ul style="list-style-type: none">• Test piece : 25mm. ϕ * 25mm. length, CUPPER and M.S. - 1 each.• Hot water bath with Electric Heater.• Temp. Controller Digital type. - 1 No.• Digital Temperature Indicator for bath & test piece temperature.• A timer giving signal at 5 seconds & 15 seconds interval. |

**CENTRE FOR PRODUCT DESIGN, DEVELOPMENT & ADDITIVE
MANUFACTURING (CPDDAM), OSMANIA UNIVERSITY**

| EQUIPMENT | SPECIFICATIONS |
|--|---|
| <p>SLM 280</p>  <p>The image shows an SLM 280 HL Selective Laser Melting machine. It is a large, industrial-grade machine with a white and blue color scheme. The machine has a control panel with a monitor and several buttons. The SLM logo is visible on the front panel.</p> | <p>SELECTIVE LASER MELTING (SLM)</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Build Volume 280mmX280mm X360mm • Laser Power 400W Yb-Fiber-Laser • Layer Thickness 20µm-75µm / 100µm <p>Materials Used with Powder particle size:</p> <ul style="list-style-type: none"> • Stainless Steel 316L (10-45 µm), • Al-Alloy AlSi 10mg (20-63µm), • Ni-Alloy IN625 (10-45µm), • Cu-Alloy CuSn10 (20-63µm), • Ti-Alloy Ti6Al4V ELI (20- 63µm), • Co-Alloy CoCr28Mo6 (10-45µm) |
| <p>FORMIGA P100</p>  <p>The image shows a Formiga P100 Selective Laser Sintering machine. It is a large, industrial-grade machine with a white and black color scheme. The machine has a control panel with a monitor and several buttons. The Formiga logo is visible on the front panel.</p> | <p>SELECTIVE LASER SINTERING (SLS)</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Build Volume : 200mmX250mm X330mm • Laser Type : CO₂, 30W • Layer Thickness: Typically 0.1mm (0.004 in) <p>Input Material in the form of powder Particle Size:</p> <ul style="list-style-type: none"> • Polyamide PA2200, • Polyamide PA3200 GF |

OBJECT 30PRO



POLYJET

SPECIFICATIONS

- Build volume :294mm X 192mm X 148.6mm
- Source: UV Light
- Layer thickness:16-28 Microns

Input Material in the form of Liquid Resin
Vero family: 1. Vero clear 2.Vero white

FAB PRO 1000



DIGITAL LIGHT PROCESSING (DLP)

SPECIFICATIONS

- Build volume : **125mm X 70mm X 120 mm**
- Laser Type : Ultraviolet Laser
- Layer thickness : 30-100 microns

Input Material in the form of Liquid Resin

- Jewelcast GRN
- Tough BLK
- Flexible BLK
- Bio Compatible Resin
-

ULTIMAKER S5 PRO BUNDLE



FUSED DEPOSITION MODELLING (FDM)

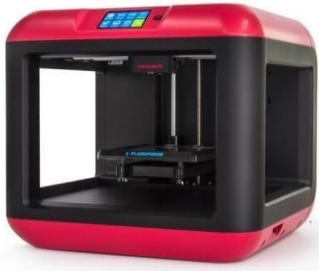
SPECIFICATIONS

- Build Volume:330mmX 240mm X 300 mm
- Nozzle: Dual Extruder
- Nozzle Diameter:0.25 mm, 0.4 mm, 0.6 mm,0.8 mm
- Layer Resolution: 150 – 60, 200 – 20,300 – 20, 600 – 20 micron.

Input Material In the form of Wire

- ABS
- PLA
- Tough PLA
- Poly Carbonate
- TPU 95A
- PVA (Support Material)

FLASHFORGE FINDER



FUSED DEPOSITION MODELLING (FDM)

SPECIFICATIONS

- Build Volume: 140 mm X 140 mm X 140mm
- Layer Resolution : 100~500 microns
- Nozzle Diameter: 0.4 mm

Input Material in the form of wire

- PLA (Poly lactic Acid)

ARTEC 3D SCANNER (SPACE SPIDER)



3D SCANNER

SPECIFICATIONS

- Working distance: 0.2 – 0.3 m
- Volume capture zone: 2,000 cm³
- 3D light source: Blue LED