























# INSTITUTE OF NANO ELECTRONIC ENGINEERING







## LAB EQUIPMETS







	IMAGE	EQUIPMENT/ITEM	DESCRIPTION
1		(Facilities) Chemical Room	<ul style="list-style-type: none"><li>• Chemical Storage Facilities</li></ul>
2		(Facilities) Fume Hood	<ul style="list-style-type: none"><li>• Scrubber system connected facilities.</li></ul>
3		(Facilities) DNA Booth	<ul style="list-style-type: none"><li>• DNA Related activities</li></ul>
4		(Facilities) Electrical Properties Booth	<ul style="list-style-type: none"><li>• Device characterization activities</li></ul>

5		<p>(Facilities) Surface Analysis Booth</p>	<ul style="list-style-type: none"> <li>• Morphology activities</li> </ul>
6		<p>(Analysis) Filmetrics F20-UV Thin Film Analyzer</p>	<ul style="list-style-type: none"> <li>• Non-reflective Thin film measurements</li> <li>• Thickness Range 1nm~10μm</li> </ul>
7		<p>(Analysis) (HPM) High Power Microscope 100X</p>	<ul style="list-style-type: none"> <li>• Photolithography Process Analysis</li> <li>• Optical Observations at 10X~100X</li> </ul>
8		<p>(Analysis) Dielectric Analyzer Novocontrol</p>	<ul style="list-style-type: none"> <li>• Electrical Properties Characterization</li> </ul>
9		<p>(Analysis) 4-Point Probe/2-Point Probe/I-V Analyzer</p>	<ul style="list-style-type: none"> <li>• Electrical Properties Characterization</li> </ul>
10		<p>(Analysis) 3D Surface Profilometer</p>	<ul style="list-style-type: none"> <li>• Surface Topography Analysis with 3D Imaging.</li> </ul>

11		(Equipment) Mask Aligner	<ul style="list-style-type: none"> <li>• Photolithography Process/Pattern Transfer</li> </ul>
12		(Equipment) Spin Coater & Hot Plate	<ul style="list-style-type: none"> <li>• Applying uniform thin films to a flat substrates such at coating photo resist on silicon wafer surface.</li> <li>• To heat the (liquid &amp; solid) samples with adjustable heat and stir.</li> </ul>
13		(Facilities) Sample Storage	<ul style="list-style-type: none"> <li>• Lab sample and device storage facilities</li> </ul>
14		(Facilities) Gas Room	<ul style="list-style-type: none"> <li>• Gas Support Facilities</li> </ul>
15		(Equipment) LPCVD (Low Pressure Chemical Deposition)	<ul style="list-style-type: none"> <li>• Polysilicon Deposition Process</li> </ul>
16		(Equipment) Wet & Dry Oxidation Furnace	<ul style="list-style-type: none"> <li>• Grow Silicon Dioxide on the silicon surface</li> <li>• Temperature up tp 1100°C</li> </ul>

17		(Equipment) Plasma Preen System	<ul style="list-style-type: none"> <li>• Substrates Cleaning</li> <li>• Using O<sub>2</sub> as an ozone ambient.</li> </ul>
18		(Equipment) Thermal Evaporator PVD	<ul style="list-style-type: none"> <li>• Applying very thin layer by thermal evaporation for various PVD process</li> </ul>
19		(Equipment) ICP-RIE Samco RIE-10iP	<ul style="list-style-type: none"> <li>• Inductively Coupled Plasma-Reactive-ion etching Process</li> <li>• Chemically reactive plasma to remove material deposited on wafers</li> </ul>
20		(Equipment) Muffle Furnace	<ul style="list-style-type: none"> <li>• Annealing Process with Temperature up to 1100°C.</li> </ul>
21		(Equipment) RTA (Rapid Thermal Anneal) RTO (Rapid Thermal Oxide)	<ul style="list-style-type: none"> <li>• To anneal rapid sample at temperature 1100°C.</li> </ul>
22		(Equipment) Thermo-Shaker Biosan TS-100	<ul style="list-style-type: none"> <li>• DNA Samples shaker</li> </ul>

23		(Analysis) UV/VIS Spectrometer Lambda 35 PerkinElmer	<ul style="list-style-type: none"> <li>Analyze solid/liquid/Powder thru optical characterization.</li> </ul>
24		(Equipment) Autoclave	<ul style="list-style-type: none"> <li>Sterilizer to most DNA/Bio related process components.</li> </ul>
25		(Equipment) Centrifuge 5430-R	<ul style="list-style-type: none"> <li>DNA and other molecules extraction Process</li> </ul>
26		(Facilities) Laminar Flow Cabinet	<ul style="list-style-type: none"> <li>Capable of UV curing</li> </ul>
27		(Facilities) Material Preparations	
28		(Facilities) DI Water System (Deionized Water)	<ul style="list-style-type: none"> <li>Stand-alone unit providing Deionized Water range 4~18 MΩ</li> </ul>

29		(Equipment) Gravity/Natural Convection Oven	<ul style="list-style-type: none"> <li>• Hydro thermal growing of nano structure</li> </ul>
30		(Facilities) Ultra sonic Cleaning	<ul style="list-style-type: none"> <li>• Samples and apparatus cleaning facilities</li> </ul>
31		(Equipment) Vacuum Oven	<ul style="list-style-type: none"> <li>• Heat treatment for &gt; 98% RH</li> </ul>
32		(Analysis) Photoluminescence (PL) Horiba	<ul style="list-style-type: none"> <li>• Contactless, nondestructive method to probe the electronic structure of materials</li> </ul>
33		(Analysis) Scanning Electron Microscope (SEM-EDX) JEOL JSM-6010LV OXFORD Instrument	<ul style="list-style-type: none"> <li>• Resolution Range 4 nm</li> <li>• Magnification Range 5X to 300X.</li> </ul>
34		(Facilities) Scrubber System	<ul style="list-style-type: none"> <li>• Exhaust and neutralize the contaminants to the outside environment.</li> </ul>