























INSTITUTE OF NANO ELECTRONIC ENGINEERING







LAB EQUIPMETS







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


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

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

17			(Equipment) Plasma Preen System	<ul style="list-style-type: none"> • Substrates Cleaning • Using O₂ as an ozone ambient.
18			(Equipment) Thermal Evaporator PVD	<ul style="list-style-type: none"> • Applying very thin layer by thermal evaporation for various PVD process
19			(Equipment) ICP-RIE Samco RIE-10iP	<ul style="list-style-type: none"> • Inductively Coupled Plasma-Reactive-ion etching Process • Chemically reactive plasma to remove material deposited on wafers
20			(Equipment) Muffle Furnace	<ul style="list-style-type: none"> • Annealing Process with Temperature up to 1100°C.
21			(Equipment) RTA (Rapid Thermal Anneal) RTO (Rapid Thermal Oxide)	<ul style="list-style-type: none"> • To anneal rapid sample at temperature 1100°C.
22			(Equipment) Thermo-Shaker Biosan TS-100	<ul style="list-style-type: none"> • DNA Samples shaker

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

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

35	 A photograph showing a white Metrohm Autolab PGSTAT204 potentiostat connected to a laptop on a perforated metal surface. Several colored wires (red, blue, green) are plugged into the device's terminals.	(Analysis) Potentiostat Metrohm Autolab PGSTAT204	<ul style="list-style-type: none">• Electrical properties and characterization for CV test
36		(Analysis) Spectrophotometer DS-11 Series	<ul style="list-style-type: none">• Compact instrument delivers full spectrum UV-Vis analysis and fluorescence capability