School of Nano Science and Technology

Sophisticated Instrumentation and Fabrication Facility (SIFF)

A) Spectroscopic and Electrical Characterizations

1. Fourier Transform Infra Red spectrometer (FTIR)

2. Source meter

B) Device Fabrication Facility

1. Glove Box

2. DC - Magnetron Sputtering unit

Sophisticated Instrumentation and Fabrication Facility (SIFF)

A) Spectroscopic and Electrical Characterizations

1. Fourier Transform Infra Red spectrometer (FTIR)

- Make: PerkinElmer Frontier MIR
- Operating Range: 8300 cm^{-1}-350cm^{-1}

FTIR spectrometer with advanced sampling accessories for analyzing wide variety of samples

- Transmission mode accessories with KBr die and Pellet press
- Universal ATR accessory with diamond crystal
- Diffuse reflectance accessory
- Variable angle specular reflectance accessory

2. Source meter

- Make: Keithley- Tektronix Company
- Model: 2450 SourceMeter SMU Instrument

Source Meter source measure unit (SMU) instrument can measure current, voltage, and resistance. Well-suited for characterizing modern scaled semiconductors, nano-scale devices and materials, organic semiconductors, printed electronics, and other small-geometry and low-power devices.

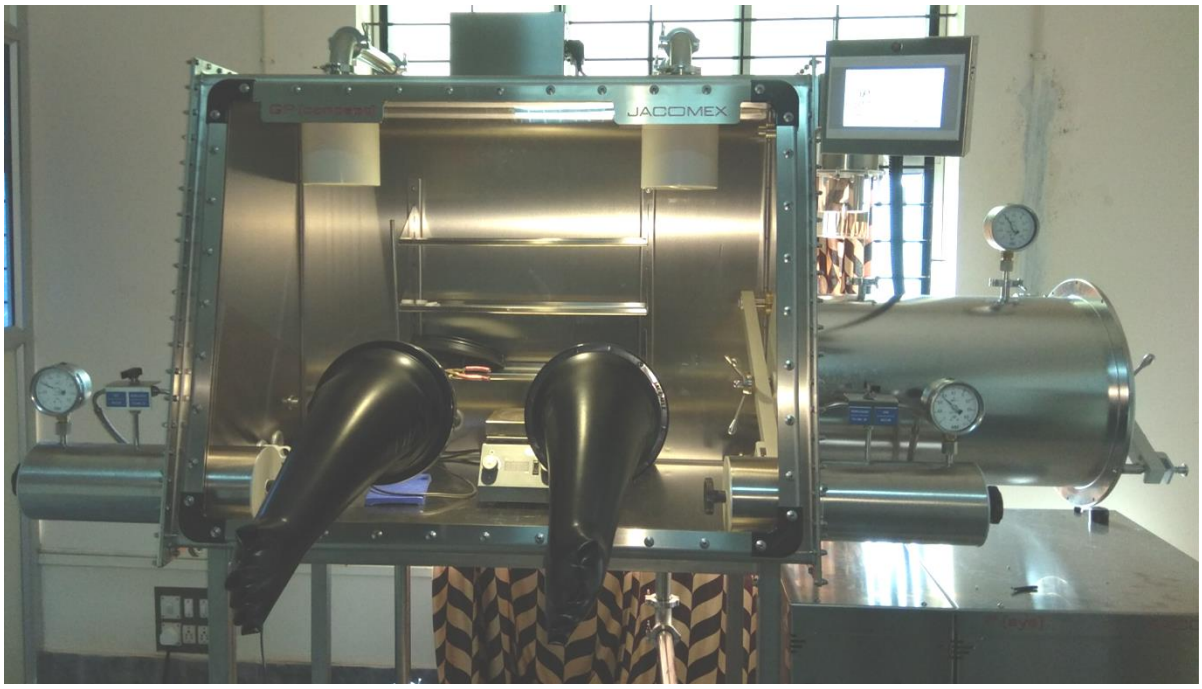
- Five-inch, high resolution touch screen
- Sensitivity with new 20mV and 10nA source/measure ranges
- Four "Quickset" modes for fast setup and measurements
- Front panel input banana jacks; rear panel input triaxial connections
- Front panel USB memory port for storing data, programming, instrument configurations, and to upgrade the unit
- Computer interface with KickStart software

B) Device Fabrication Facility

1. Glove Box

- Make: Jacomax
- Model: Jacomax GP (Concept)

Glove box is a miniature statue of a clean room facility, useful for the synthesis of different materials at inert environment as well as it is providing inert and clean atmosphere for device fabrication. Experimental works involving high risk of contaminants and stability issues of the chemicals involved when exposed to the atmosphere can be carried out in glove box.



2. DC - Magnetron sputtering unit

- Make: Hind high vacuum (HHV)
- Model: 12 –MSPT

DC – Magnetron sputtering is a thin film Physical Vapor Deposition (PVD) Coating technique. Widely used for thin film metal electrode coatings in device fabrication.

- Instrument is equipped with 2 inch flexible magnetron source
- Magnetron is compactable with DC and RF power supply
- Magnetron source is in the sputter up/down configuration
- Different 2 inch metal targets can be placed
- Equipped with substrate heater
- Available targets – Aluminum and Chromium