Thin film Process **:** Epitaxial thin film growth by MBE technique.

Equipment : Plasma Assisted Molecular Beam Epitaxy Machine (PA-MBE), RIBER Compact 21E, France.

Photograph (small size):

Basic principle : Epitaxial growth is due to the interaction of molecular or atomic beams on a surface of a heated crystalline substrate. The solid source materials sublimate and provide an angular distribution of atoms or molecules in a beam. The substrate is heated to the necessary temperature. The gaseous elements then condense on the wafer where they may react with each other. Atoms on a clean surface are free to move until finding correct position in the crystal lattice to bond.

Capabilities: Equipped with basic in-situ characterizations of the growing film. It is capable of growing multi-elemental compositions, and precise energy band gap tunability for many device applications.

Materials grown : Binary (GaN, AlN, InN) and ternary compound (AlGaN, InGaN) based epitaxial thin films.

Sample requirements: Up to 3” dia. wafer (Silicon/Sapphire/Homo epitaxial wafers)