AIM Photonics Multi Project Wafer (MPW) provides access to the most advanced state-of-the-art 300mm semiconductor processing research fab in the world at the Albany Nanotech facility in Albany, NY.

**Albany Nanotech Advanced 300mm Fabrication Facility**

- >130K square feet of Class-1 capable cleanrooms that operate 24/7
  - Regular tool health checks and statistical process control
  - Same tool set that produces 14nm and smaller circuits

**Inline Electro-Optical Testing**

- Fully integrated into the fab with the ability to test wafers during build
- Ability to measure passive and active PDK components
- Full auto wafer scale testing
- 1310nm and 1550nm lasers
- Optical Wafer Acceptance Criteria (OWAC) reports to be sent with all MPW chips in 2019

**Integrated Photonics Multi Project Wafer (MPW)**

**PIC Technology Highlights**

- Best-in-class 90-day fab time for full actives process on 300mm SOI wafers

NEW: Ultra Low-Loss Waveguides
- <0.25 db/cm for 220nm silicon
- <0.10db/cm for 220nm SiN
- ~1db/facet edge coupler for both TE and TM polarization

**Actives Process includes**
- Si + SiN waveguides
- 6 implant levels
- Ge photodetector
- Cu wiring
- Al wiring/termination layer

**Active Interposer MPW**
- Actives PIC fusion bonded to 100µm thick Si interposer

**Interposer Technologies**

**Passive Interposer:**
- Based on a 100µm thick silicon substrate with TSVs, a silicon nitride waveguide, three frontside and one backside metal wiring levels
- Pockets for laser and PIC chips to be flip chip soldered in
- Deep trenches for edge or evanescent fiber coupling

**Active Interposer:**
- Fusion bonding of PIC and interposer allows for the entire design real estate to be used for photonics or metal routing
- Lasers soldered into pockets and deep trenches for coupling