



Semiconductor Research Nanofab Center (SRNC)

BACKGROUND

There has been a global proliferation of materials that display new and useful behaviors when uniquely structured. These materials have exceptional potential to revolutionize technologically advanced systems by realizing new and improved devices. The failure to develop an efficient collaborative path for researchers and tech innovators to access and transition these materials and structures puts the Army's technological advantage at risk. The Semiconductor Research Nanofab Center (SRNC) is a vehicle to enable collaboration between a broad set of regional research nanofabrication facilities to provide government, academia and industry with a more robust and complete research nanofabrication capability.

PARTICIPANTS

Open to national and defense labs, universities and industry

CONCEPT OF OPERATION

The SRNC will establish an overarching cooperative research and development agreement (CRADA) that defines the extent of collaboration conducted under the center and defines the disposition of intellectual property and the sharing of research outcomes and laboratory resources.



COLLABORATIVE FOCUS

- Electronic Materials (Silicon, III-V, II-VI, 2D materials)
- Sensors (Inertial, E-field, Magnetic, Acoustic, Chem/Bio)
- Electro-optics (Emitters/Detectors, IR through UV)
- Microfluidics (Bio/Abio interfaces, atomizers, filters)
- Components (RF switches, Phase shifters, HEMTs, Tunable inductors/capacitors, Ion traps, Bio circuitry)

BENEFITS

- Platform for marketing intellectual property and expertise of member facilities.
- Provides potential investors perspective on available intellectual property and a clearly defined path to licensing.
- Enables rapid development of prototypes using advanced materials with modest investment.
- Increases exposure of technology, lab use and accelerated technology transition.
- Access to comprehensive resources and materials for the rapid realization and transition of sophisticated nano-devices and systems.

UNIQUE FACILITIES

- Specialty Electronics Materials and Sensors Cleanroom (SEMASC)
 - 15,000sf class 100/10 space
 - Diverse materials processing (over half of the periodic table)
- Extensive Materials Deposition Facilities (including MBE, MOCVD, ALD, CVD, Sputtering, Sol-Gel, Evaporation)
- Broad materials characterization (SEM, TEM, AFM, Ellipsometry, XRD, SIMS, CL, Auger, EBIC, XPS)
- Packaging and testing resources
- ARL's intellectual property portfolio, materials, design, fabrication and testing expertise

POINT OF CONTACT

Paul Sunal, Ph.D.

Cleanroom Manager

301.394.1374

paul.d.sunal.civ@mail.mil