



Center of Semiconductor Modeling (CSM)

BACKGROUND

The US Army's future operating concept will rely heavily on sensors, nano-electronics and photonics technologies to rapidly develop situational understanding in challenging and complex environments. To meet this challenge, ARL has identified a strategic need to foster and accelerate collaborative research related to the modeling of advanced electro-optic semiconductor materials and devices. The Center of Semiconductor Modeling (CSM) will act as a repository of a broad base of modeling knowledge to be shared across the community in order to foster the development of new materials and devices as well as to reduce the timeline between "discovery" and manufacturing.

PARTICIPANTS

Open to national and defense labs, universities and industry.

CONCEPT OF OPERATION

The CSM will establish an overarching cooperative research and development agreement 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.

POINT OF CONTACT

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COLLABORATIVE FOCUS

- New multi-scale modeling from atomistic to device scales
- Validation coupled to the advanced modeling
- Pooling of computational tools and resources
- Emitter and Detector semiconductor materials

BENEFITS

- Ability to leverage ARL's Enterprise for Multiscale Research of Materials
- Access to ARL's existing electro-optics (EO) expertise
- Increased product yields and lower cost
- Advancing the state-of-the-art in modeling and materials sciences
- Procurement and deployment with confidence and minimal risk
- Awareness of important DoD needs
- Exposure to new ideas and collaborators

UNIQUE FACILITIES

- ARL's High Performance Computing Center
- Class 100/10 Cleanroom
- ARL's characterization, processing and fabrication facilities external to the cleanroom

