Germanium Nanocrystal Films for Photovoltaic Applications
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NNIN Facilities utilized: Characterization Facility & Nanofabrication Center

- **GOAL**: Develop germanium nanocrystal films for device applications.
  - Germanium nanocrystals are synthesized in a non-thermal plasma reactor
  - Films are formed by either transferring the crystals into solution and spin-coating, or impacted the crystals onto substrates directly downstream of the plasma

- **MAJOR OBSERVATIONS**
  - Uniform, dense films of germanium nanocrystals are formed
  - As-produced films are mostly insulating; low-temperature (300°C) annealing increases the mobility to 10^-3 cm^2/Vs
  - *n*-type FET devices have been fabricated and photovoltaic devices are in progress

- **PUBLICATIONS**