

Electrical Transport Through Films of Nanocrystals

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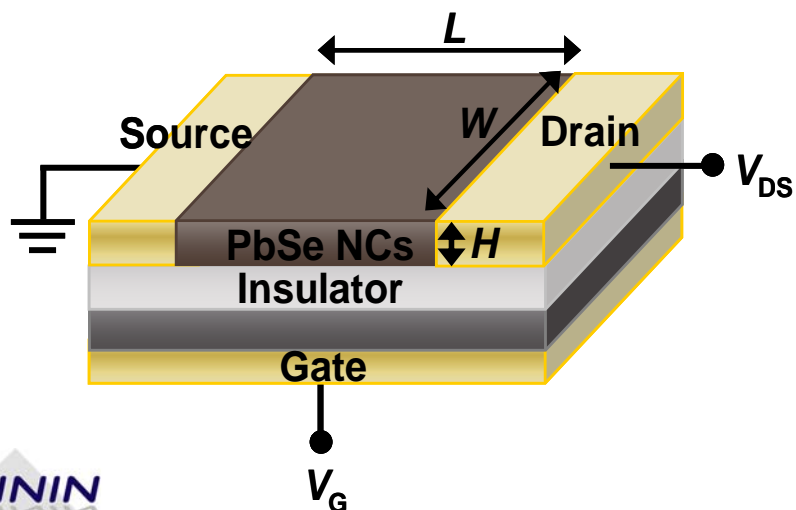
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NNIN Facility utilized: Nanofabrication Center

DESCRIPTION OF WORK

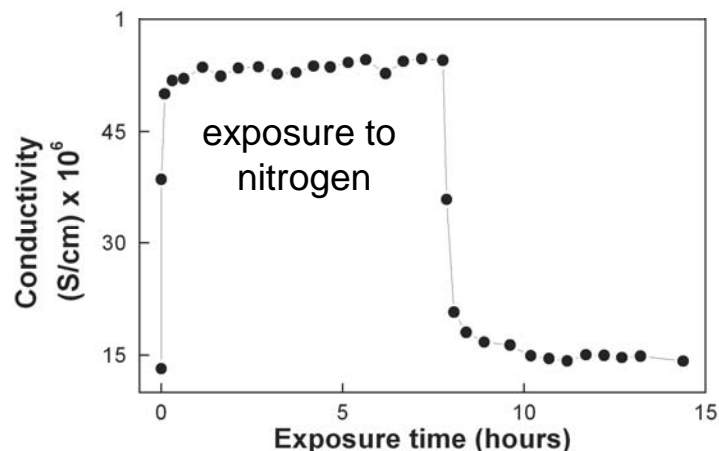
- ◆ Electrical conduction in films of semiconductor nanocrystals (NCs) not understood
- ◆ Critical for many devices
- ◆ Used field effect transistors to study fundamentals of electrical transport in lead selenide NCs

Field-Effect Transistor



MAJOR OBSERVATIONS

- ◆ Saw unexpected changes when NCs exposed to N₂
- ◆ Studied dependence of electrical transport on size of nanocrystals – critical information for understanding transport process



Publications

- ◆ Leschkies, Kang, Aydil, and Norris, *J. Phys. Chem. C* **114**, 9988 (2010).
- ◆ Kang, Sahu, Norris, and Frisbie, *Nano Lett.* **10**, 3727 (2010).