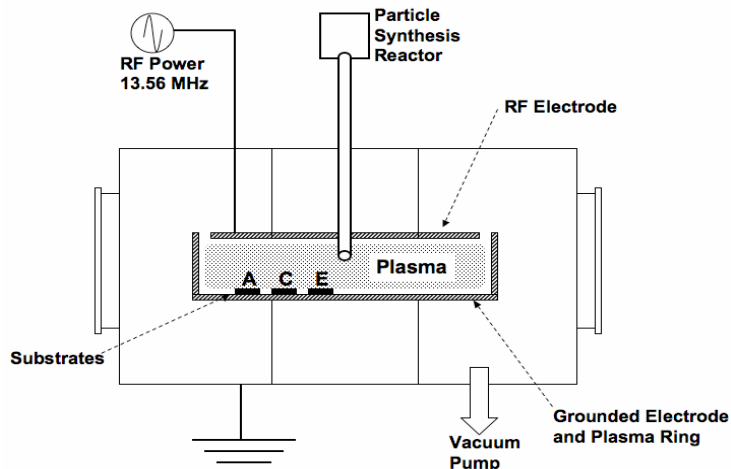


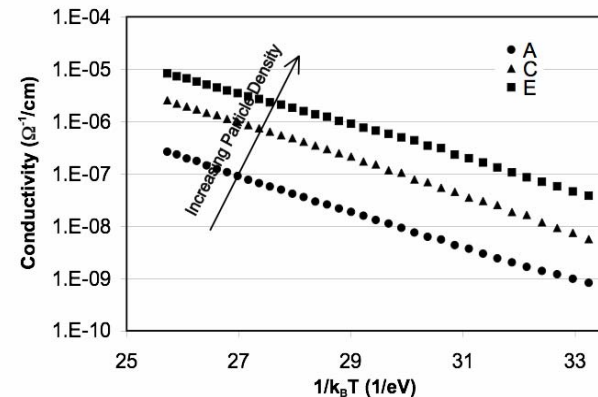
Amorphous/Nanocrystalline Mixed Phase Thin films

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- Co-Deposition PECVD of nc-Si in a-Si:H matrix
 - ◆ Control over density and size of nc-Si
 - ◆ Film properties can be optimized for solar cell applications



- Optical, Structural and Electronic Properties of a/nc-Si:H films studied
 - ◆ As nc-si concentration increased, conductance increases
 - ◆ “Doping” with nanocrystals - avoids defect mechanisms associated with impurity doping in a-Si:H



● Publications

- “Experimental Investigations into the Formation of Nanoparticles in a/nc-Si:H Thin Films”, S. Thompson, C. R. Perrey, C. B. Carter, T. J. Belich, J. Kakalios and U. Kortshagen, *J. Appl. Phys.* **97**, 34,310 (2005).
- “Dual-chamber Plasma Co-Deposition of Nanoparticles in Amorphous Silicon Thin Films”, C. Anderson, C. Blackwell, J. Deneen, C. B. Carter, J. Kakalios and U. Kortshagen, *Materials Research Society Symposia Proceedings* (Materials Research Society, Pittsburgh, PA) **in press** (2006).