



POETS

# Joseph Lyding-University of Illinois

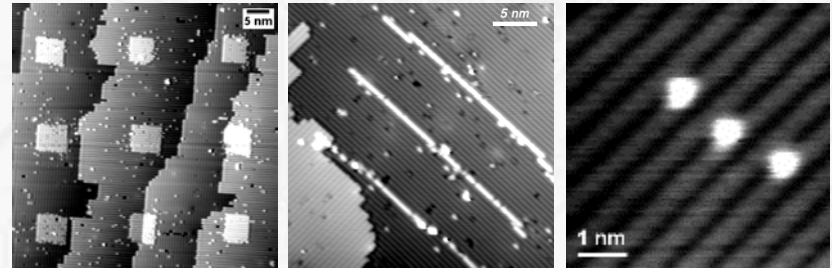
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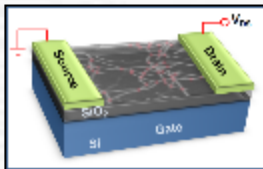
- Scanned probe microscopy and nanofabrication.
- Optimization of carbon nanotube electronics
- High thermal conductivity carbon nanotube structures

<http://stmgroup.beckman.illinois.edu/>

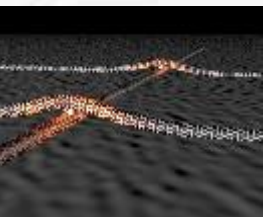
## Atomic-Scale STM Lithography on Silicon



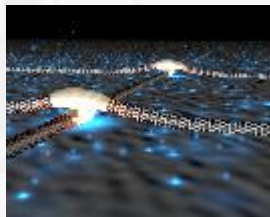
**Spin-Off:** Deuterium processing now being used by major semiconductor manufacturers to improve chip reliability.



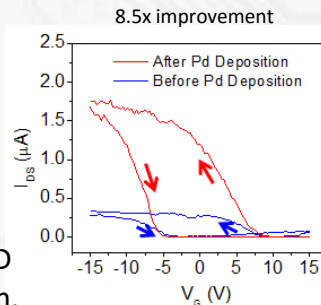
**Nanotube FET:** performance limited by nanotube-nanotube junction resistance



Current flow heats junctions.



Heat drives local CVD metallization reaction.



**High thermal conductivity:** Use junction linking process to facilitate heat flow in carbon nanotube fiber bundles.

