

NCN Nanoelectronics

Microelectronics was one of the great technologies of the 20th century. Progress in technology has now taken microelectronics to the nanoscale, but nanoelectronics is not yet an engineering discipline. The NCN has a vision to re-invent electronics from the “bottom-up,” by which we mean understanding electronic conduction at the atomistic level, formulating new simulation techniques, developing a new generation of software tools, and bringing new understanding and approaches into the education of device engineers. We work closely with experimentalists to understand nanoelectronic phenomena and explore new device approaches. In the course of this work, we produce open source software tools and educational resources that we share with the community through the nanoHUB.

This page is a starting point for nanoHUB users. It lists a few resources developed or recommended by the NCN Nanoelectronics team. For applications of electronic devices to medicine and biology, see “[Nano-device for Medicine and Biology](#).” You can find other resources by browsing through the list with the tag [nanoelectronics](#), or by using the nanoHUB search box to locate other resources.

Selected Resources

- [NCN@Purdue supported tools](#)
- [NCN Nanoelectronics: Tutorials](#)
- [NCN Nanoelectronics: Research Seminars](#)
- [NCN Nanoelectronics: Courses](#)
- [NCN Nanoelectronics: Simulation Tools for Education](#)
- [NCN Nanoelectronics: Simulation Tools for Research](#)
- [Semiconductor Device Education Material](#)

Special Initiatives

- [CQT: Concepts of Quantum Transport](#)
- [Electronics from the Bottom-Up](#)
- [The NEGF Resource Page](#)
- [Excellence in Computer Simulation](#)

Recommended Links

- [Northwestern University Materials Research Science & Engineering Center](#)
- [Purdue University Birck Nanotechnology Center](#)
- [SISPAD Portal](#)
- [IWCE Portal](#)

Announcements

- **July 20-24, 2008:** [NCN Summer School 2009 on 'Electronics from the Bottom-Up'](#)