nanoHUB.org

183
Tools

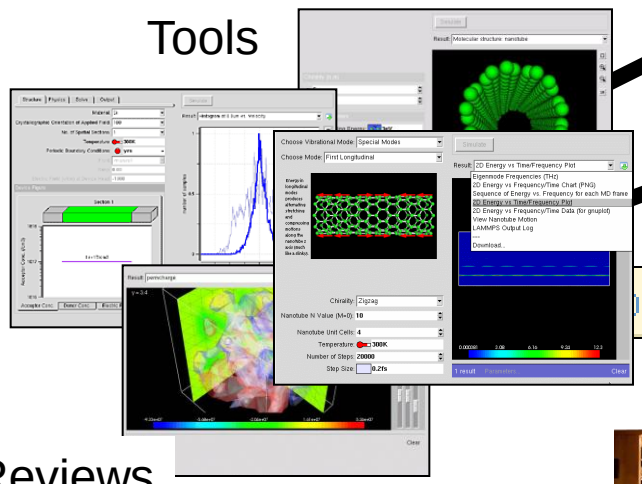
Tags

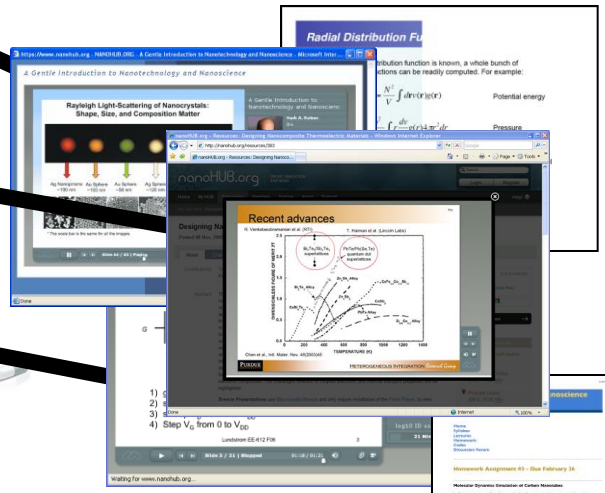
carbon nanotubes

energy conversion

electronics

2,150
Supporting Resources





Reviews

★★★★★ **james k fodor** said:
26 Jan, 2006 10:24 AM
This is a great learning module
Simply because it would help

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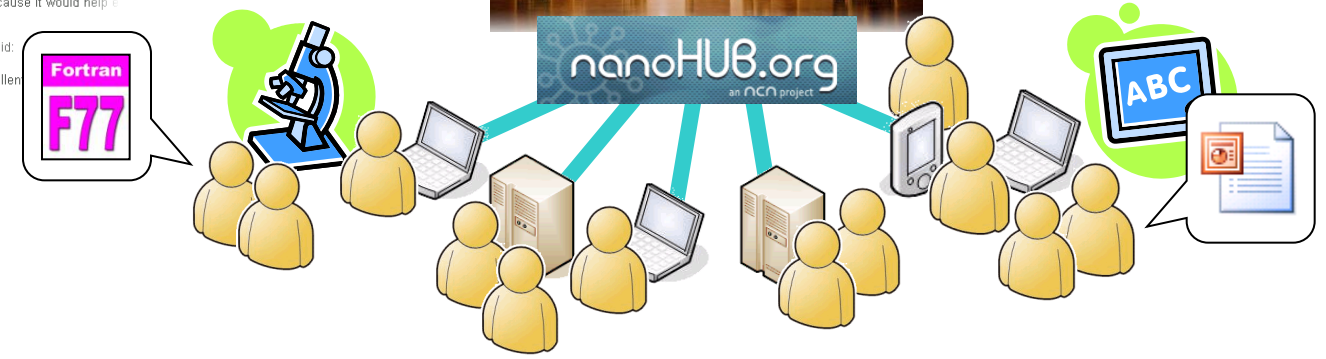
Research



Education

Reviews

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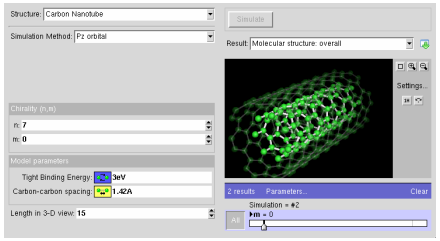
Challenges: Building/Deploying Tools

Rappture Toolkit

rappture.org

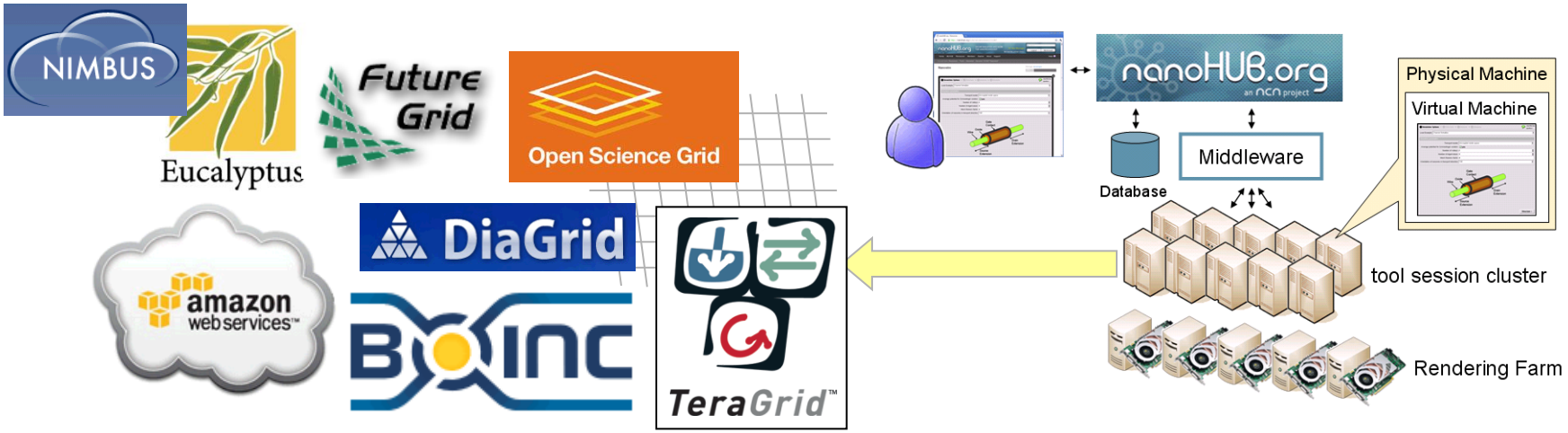
Simulation Code



Future Directions:

- Make it 10x easier for non-programmers -- drag & drop builder
- Many more visualization/plotting methods
- Regression tests and tool validation/verification
- Open API for adding new input/output types

Challenges: Computation

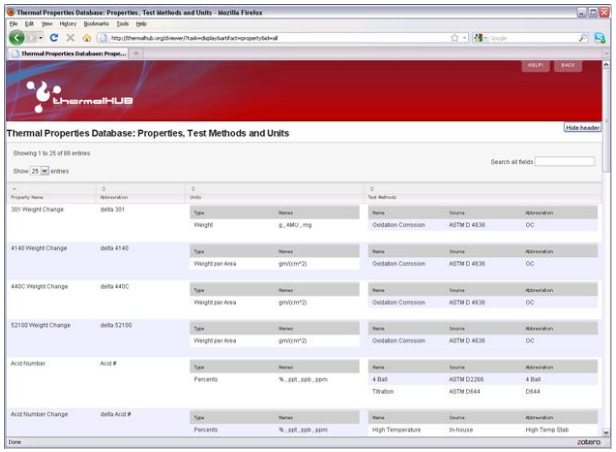


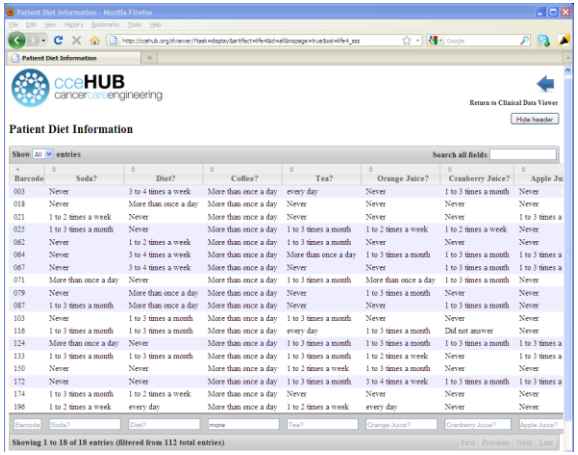
Future Directions:

- Parameter sweeps / optimizations / uncertainty quantification
- Higher-level analysis $\Rightarrow$ lots of jobs
- Locate data near computation to avoid movement
- Talk to many different computing grids/clouds
- Federated identity management - InCommon, OpenID
- Virtual economy for trading cycles
- Cache common/known simulation results

Challenges: Experimental Data

Simple datasets:
- Auto-generated upload forms
- Searching
- Filtering

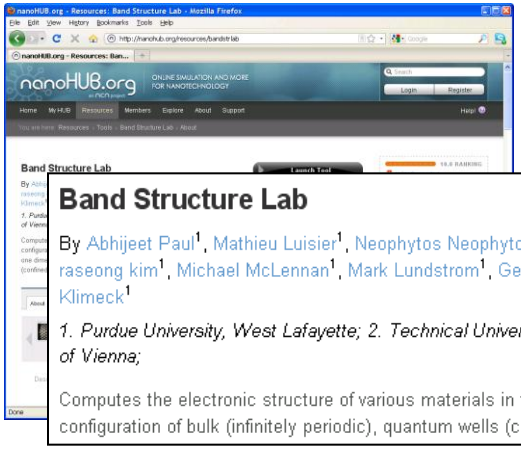




Future Directions:
- Not just tables -- plotting/visualization
- Compare experimental data vs. computational models
- Easy to apply: statistical analysis / uncertainty quantification
- Community-built datasets with provenance tracking
- Combine/mine datasets across many different sites

Challenges: Digital Scholarship

Connections to literature:
- Digital publishing
- Citable resources
- Digital Object Identifiers
- COinS for Zotero



zotero

Future Directions:
- Editorial process / peer review
- Mash-up of publications / tools / data
- Share data in small groups, embargo until “published”
- Web analytics along with citations to track academic credit
- Semantic web standards for discovery: RDF triples, OAI-ORE