

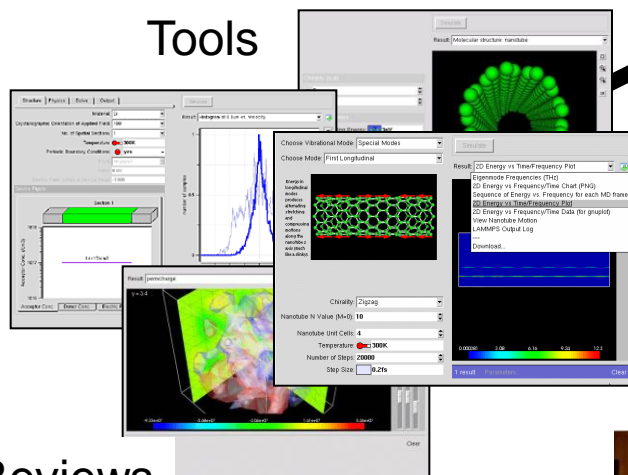


# nanoHUB.org

183  
Tools

Tags

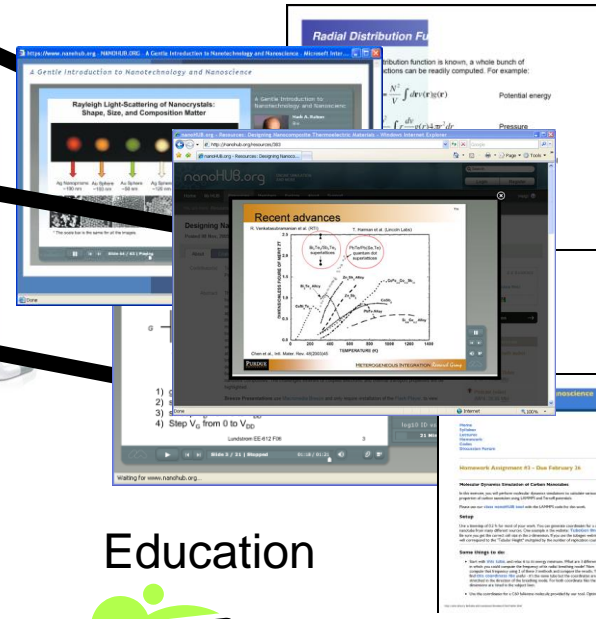
2,150  
Supporting Resources



carbon nanotubes

energy conversion

electronics



Reviews

★★★★★ James K Fodor said:  
26 Jan, 2006 10:24 AM  
This is a great learning module  
Simply because it would help e

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Research

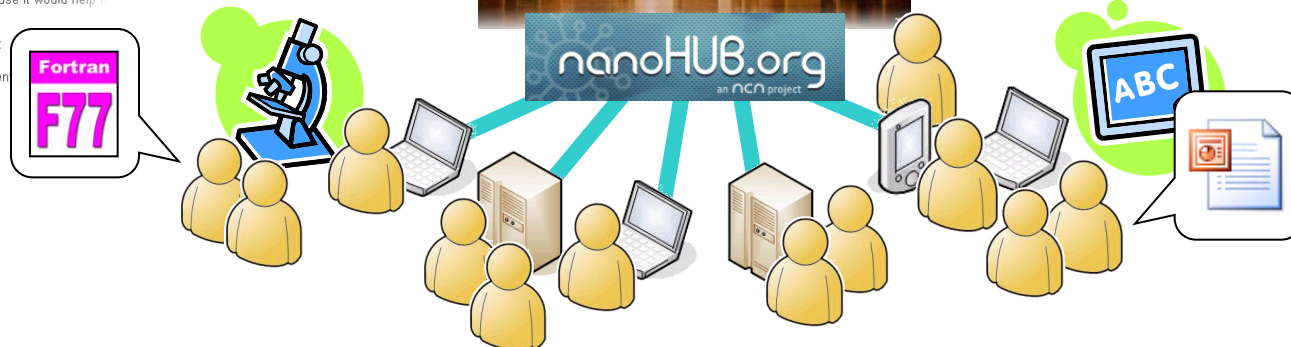


Education

Reviews

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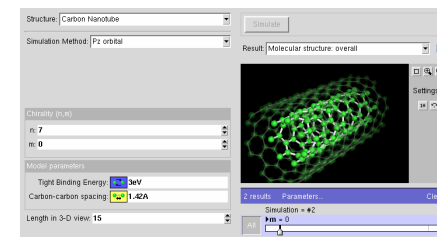
# Challenges: Building/Deploying Tools



rappture.org



Simulation Code

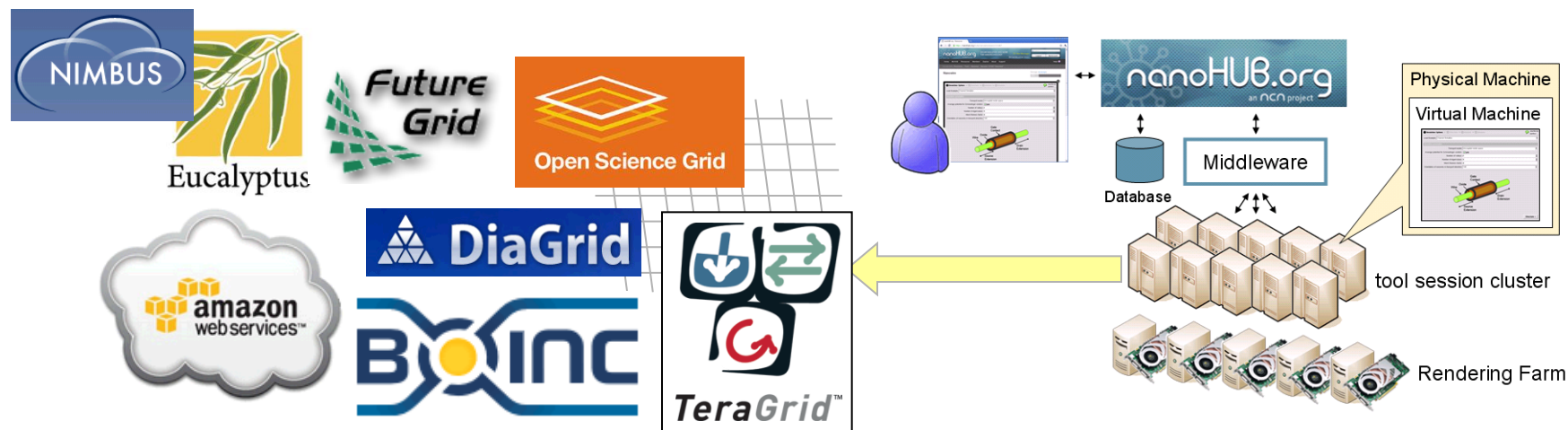


## *Future Directions:*

- 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

Thermal Properties Database: Properties, Test Methods and Units

Showing 1 to 25 of 68 entries

Property Name	Material	Units	Notes	Test Method	Source	Altitude
300 Weight Change	delta 301	Type	Name	Notes	Source	Altitude
4140 Weight Change	delta 4140	Type	Name	Notes	Source	Altitude
4400 Weight Change	delta 4400	Type	Name	Notes	Source	Altitude
52100 Weight Change	delta 52100	Type	Name	Notes	Source	Altitude

ccfHUB cancer engineering

Patient Diet Information

Showing 1 to 18 of 18 entries (filtered from 112 total entries)

Barcode	Soda?	Bart?	Coffee?	Tea?	Orange Juice?	Cranberry Juice?	Apple Juice?
003	Never	3 to 4 times a week	More than once a day	every day	Never	1 to 3 times a month	Never
018	Never	More than once a day	Never	Never	Never	Never	Never
021	1 to 2 times a week	Never	More than once a day	Never	Never	Never	1 to 3 times a month

*Future Directions:*

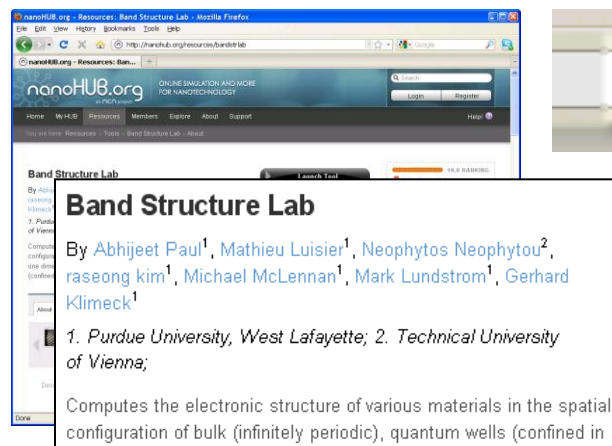
- Not just tables -- plotting/visualization
- Compare experimental data vs. computational models
- Easy to apply: statistical analysis / uncertainty quantification
- Community-built datasets with provenance tracking
- Combine/mine datasets across many different sites



# 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