NanoPort: Digital Library techniques for a multidisciplinary domain

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Introduction

- Request from Dr. Mihail Roco of the NSF National Nanotechnology Initiative
  - Develop a specialized search tool to address the information-seeking needs of those in the domain
  - Investigate the impact of such a search tool on the community and explore possible new directions

Introduction

- Nanotechnology is new and growing quickly, the Web has become an important medium for researchers and practitioners seeking up-to-date information
- The domain encompasses different research perspectives, languages, and application areas
- Problems of information overload, fluidity of concepts

Nanotechnology

Optics

Environmental Engineering

Chemistry

Biomedical Engineering

Cell Biology

Mechanical Engineering

Computer Engineering

Bioengineering

Environmental Science

Physics

Materials Science

Chemical Engineering

Astronomy

Neurobiology

Electrical Engineering

Biochemistry

Research Question

- Can techniques originally developed for the medical domain be applied to a unstructured domain such as nanoscale science and engineering?

User Requirement Study

- 15 faculty researchers at The University of Arizona, 2 Industry and 1 NSF researcher
- Across disciplines: Materials Science, Chemistry, Biomedical Engineering, Physics, Optics

User Requirement Study

- Databases
- Full text
- News
- Search engines
- Funding sources
- Research Centers
- Industry

Proceedings of the National Academy of Science

Scirus

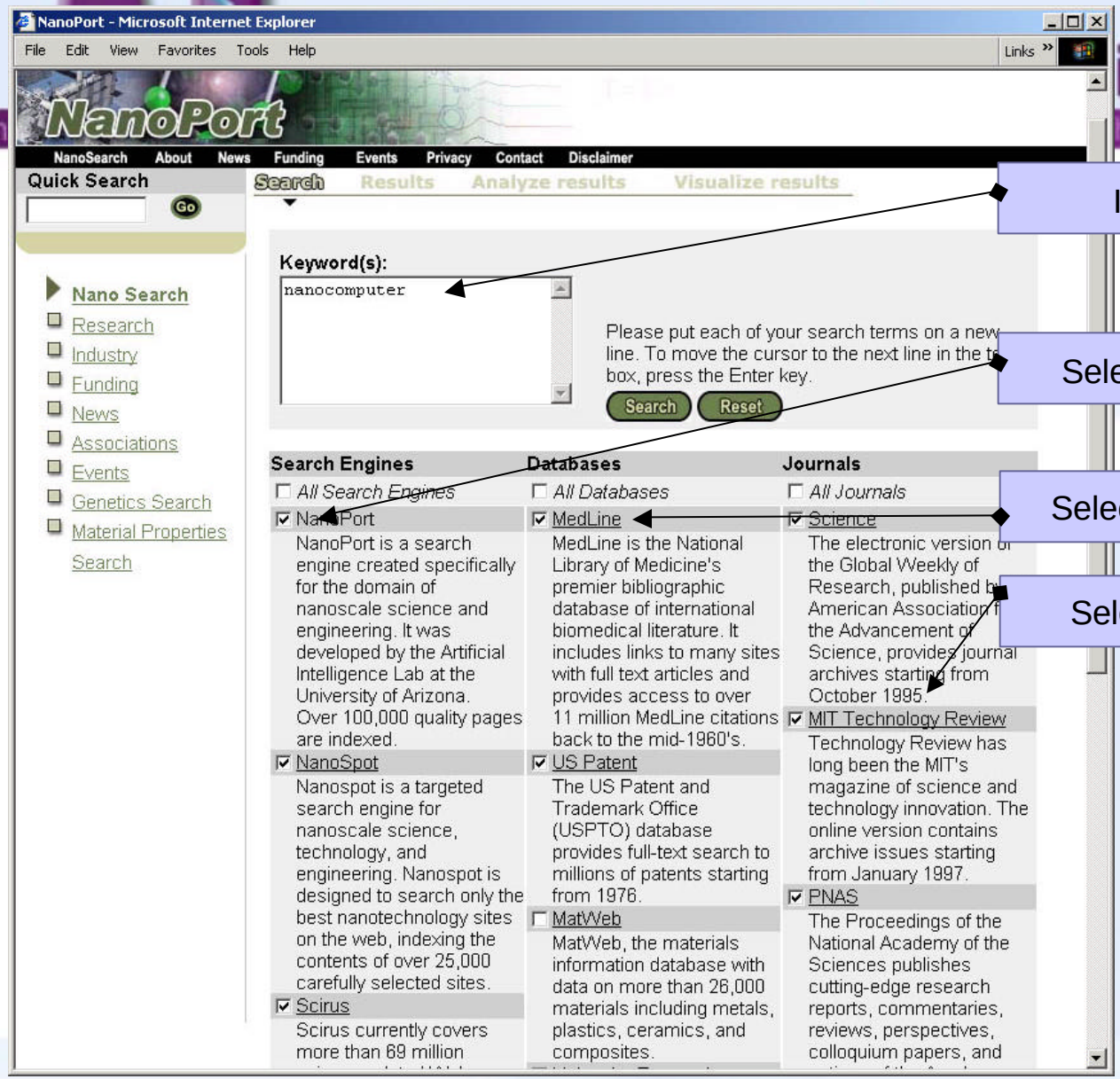
NSF NIH

National Center for Research Resources

Zyvex LLC Nano Products

Challenges

- fee-based databases
  - Z39.50
  - Nature
- fitting a large amount of information on one interface

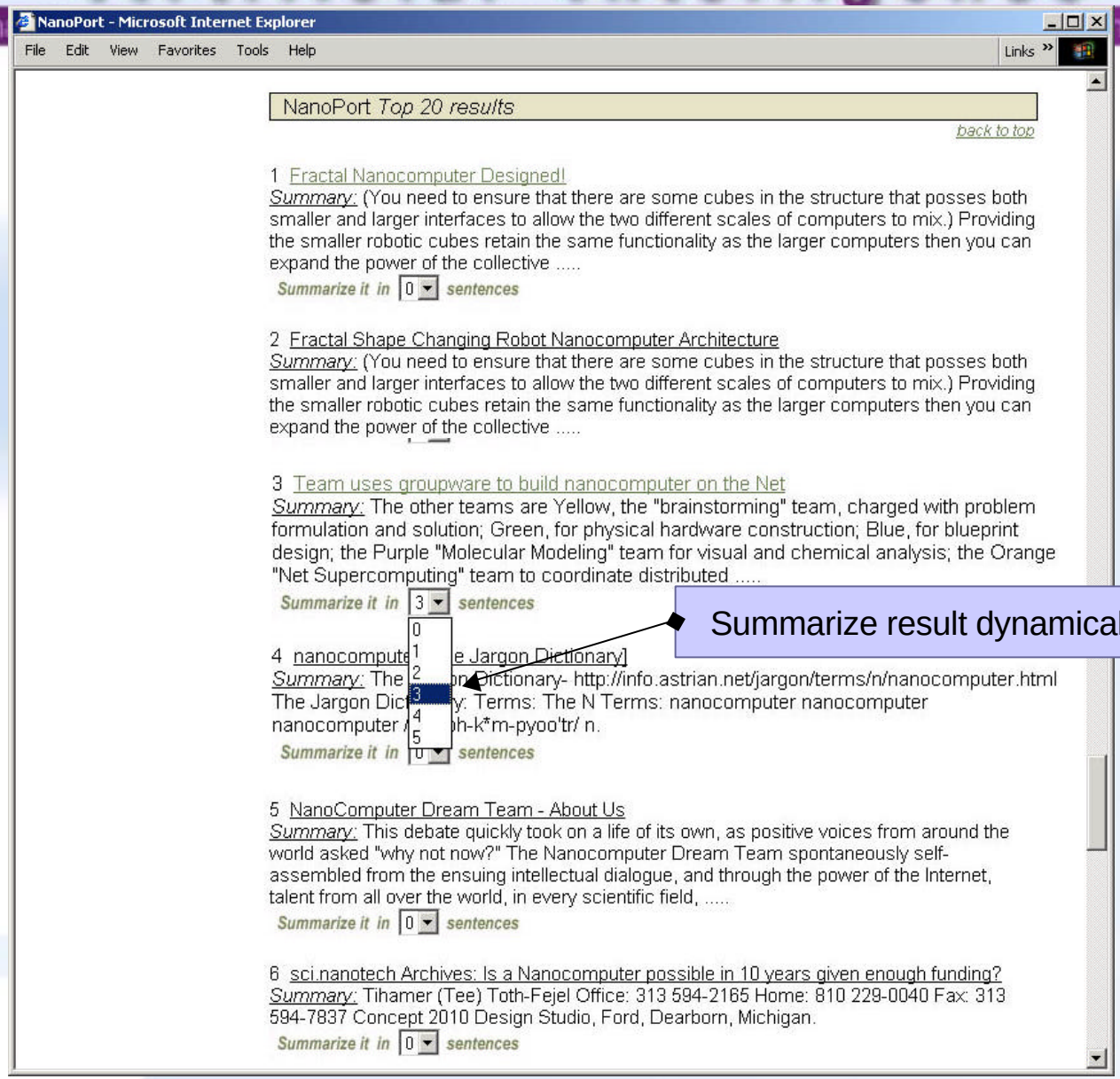


Input keywords

Select search engines

Select online databases

Select online journals


NanoPort - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Links
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1 Fractal Nanocomputer Designed!
Summary: (You need to ensure that there are some cubes in the structure that posses both smaller and larger interfaces to allow the two different scales of computers to mix.) Providing the smaller robotic cubes retain the same functionality as the larger computers then you can expand the power of the collective .....
Summarize it in 0 sentences
2 Fractal Shape Changing Robot Nanocomputer Architecture
Summary: (You need to ensure that there are some cubes in the structure that posses both smaller and larger interfaces to allow the two different scales of computers to mix.) Providing the smaller robotic cubes retain the same functionality as the larger computers then you can expand the power of the collective .....
3 Team uses groupware to build nanocomputer on the Net
Summary: The other teams are Yellow, the "brainstorming" team, charged with problem formulation and solution; Green, for physical hardware construction; Blue, for blueprint design; the Purple "Molecular Modeling" team for visual and chemical analysis; the Orange "Net Supercomputing" team to coordinate distributed .....
Summarize it in 3 sentences
0
1
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3
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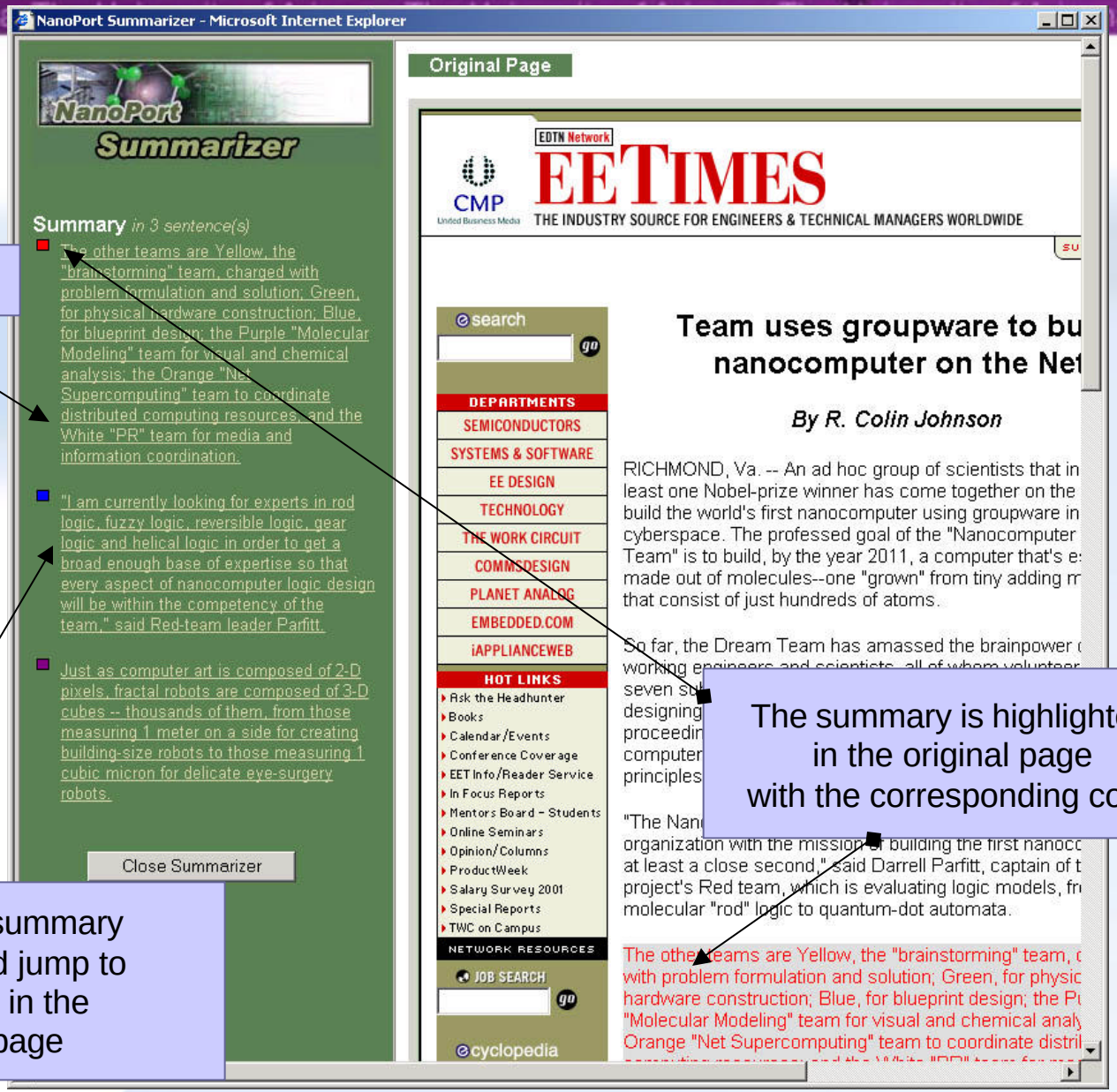
5
Summarize result dynamically
4 nanocompute e Jargon Dictionary]
Summary: The ictionary- http://info.astrian.net/jargon/terms/n/nanocomputer.html The Jargon Dic y: Terms: The N Terms: nanocomputer nanocomputer nanocomputer h-k*m-pyoo'tr/ n.
Summarize it in 0 sentences
5 NanoComputer Dream Team - About Us
Summary: This debate quickly took on a life of its own, as positive voices from around the world asked "why not now?" The Nanocomputer Dream Team spontaneously self-assembled from the ensuing intellectual dialogue, and through the power of the Internet, talent from all over the world, in every scientific field, ...
Summarize it in 0 sentences
6 sci.nanotech Archives: Is a Nanocomputer possible in 10 years given enough funding?
Summary: Tihamer (Tee) Toth-Fejel Office: 313 594-2165 Home: 810 229-0040 Fax: 313 594-7837 Concept 2010 Design Studio, Ford, Dearborn, Michigan.
Summarize it in 0 sentences

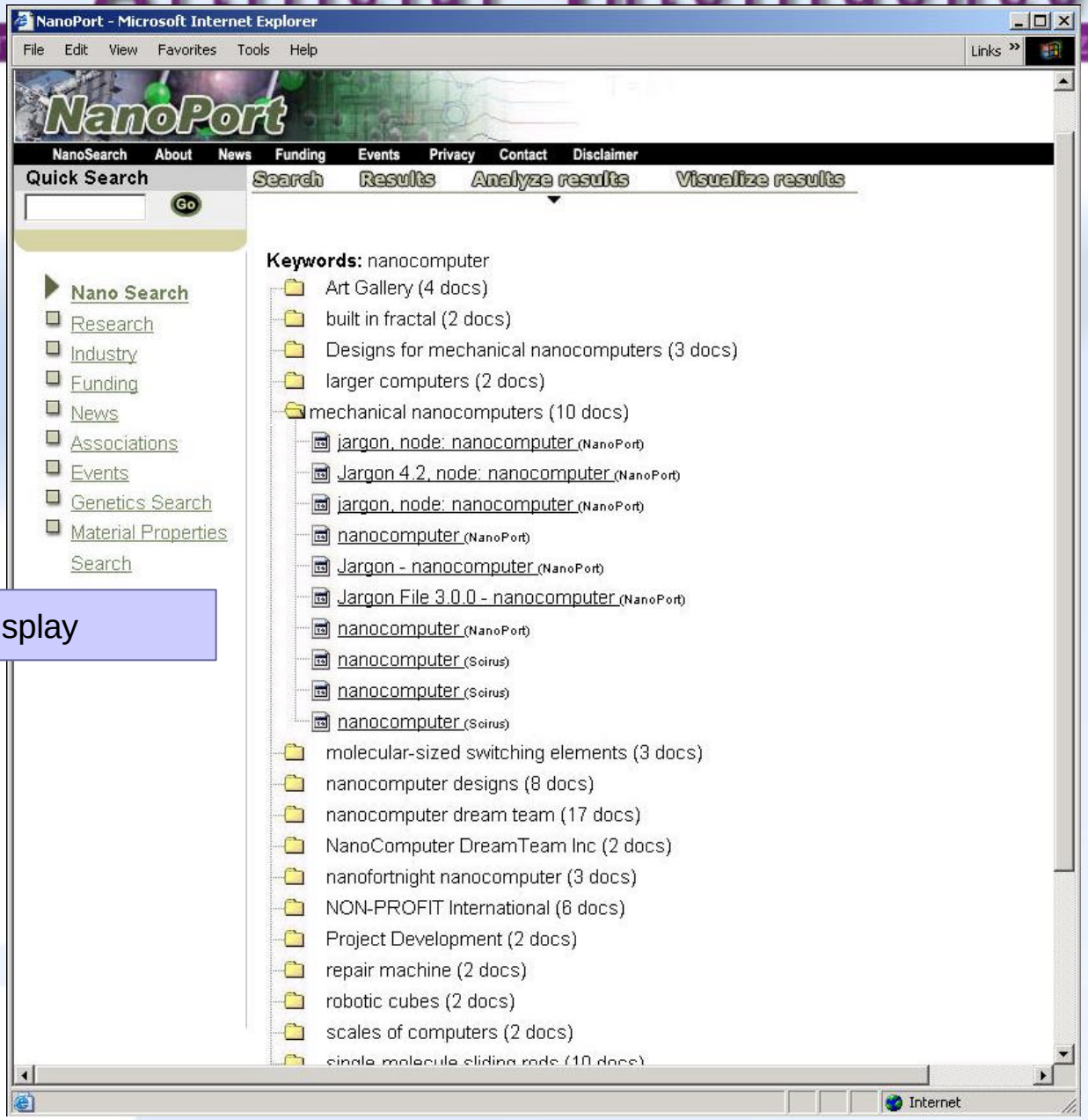


Summary

The summary is highlighted in the original page with the corresponding color

Click on the summary sentence and jump to its position in the original page


NanoPort - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Folder display
Visualization with SOM
NanoPort
NanoSearch About News Funding Events Privacy Contact Disclaimer
Quick Search
Go
Search Results Analyze results Visualize results
Nano Search
Research
Industry
Funding
News
Associations
Events
Genetics Search
Material Properties Search
Keywords: nanocomputer
Results from: | NanoSpot | MedLine | Scirus | USPTO | NanoPort | Science |
NanoSpot Top 20 results
back to top
1 main
Summary: vollkommen neue Eigenschaften. Die Medien haben die Nanotechnologie als Thema entdeckt: Nanoroboter, Nanocomputer und sich selbst reproduzierende Nanomaschinen sind die interessantesten ...
Summarize it in 0 sentences
2 Foresight Update 22 Page 5
Summary: of various achievements in the field. The events selected were first molecular assembler, first nanocomputer, first cell repair machine, first commercial product, and first nanotechnology-oriented ...
Summarize it in 0 sentences
3 Unbounding the Future: Chapter 2
Summary: 1D. Your simulated body is 50 nanometers tall, about 1/40,000,000 your real size, and the smaller nanocomputer is twice your height. At that size, you can "see" atoms and molecules, ...
Summarize it in 0 sentences
4 Nanomedicine Art Gallery - Image 110
Summary: submarine that would navigate its way through the bloodstream. In that submarine would be a powerful nanocomputer. This computer would be programmed to seek out and destroy disease-causing ...
Summarize it in 0 sentences
5 Respirocytes
Summary: arranged structural atoms plus 9 billion temporarily resident molecules when fully loaded. An onboard nanocomputer and numerous chemical and pressure sensors allow the



Folder display

Visualization using SOM