# National Nanotechnology Programs of Japan
## - Networking and Integrated Support -

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**National Institute for Materials Science**

***http://www.nanonet.go.jp/***

# Topics

- Nanotechnology Programs by MEXT
- Nanotechnology Programs by METI
- Nanotechnology Support Project

# Institutes for Nanotechnology Research, Development and Assessment

**CSTP**
**NTPT**

## METI

**Flagship type R&D**
NEDO (FA)
AIST (RI)

**Industries**
NBCI

## MEXT

**Basic research**
JSPS (FA)
Universities

**Long term challenge**
JST (FA)

**Generic technology**
NIMS (RI)
RIKEN (RI)

## MHLW

**Safety of foods & drugs**
NIHS (RI)

**Occupational health**
NIIH (RI)

## MOE

**Environmental Protection**
NIES (RI)

FA: Funding Agency
RI: National Research Institute

# Government Funding Categorized as Nanotechnology & Materials

(billion JPY)

| FY | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|
| MEXT | 42 | 52 | 68 | 72 |
| METI | 25 | 36 | 19 | 18 |
| Others | 1 | 1 | 4 | 4 |
| Total | 68 | 90 | 91 | 94 |

# Nanotechnology Programs by MEXT

BASIC ⟷ APPLIED

**Research & Development**

- Competitive Research Fund
- JST Virtual Laboratories
- RIKEN
- NIMS
- Leading Projects
  - EUV and semiconductor devices
  - Artificial organs
  - Fuel cells
  - Measurement, characterization, and evaluation

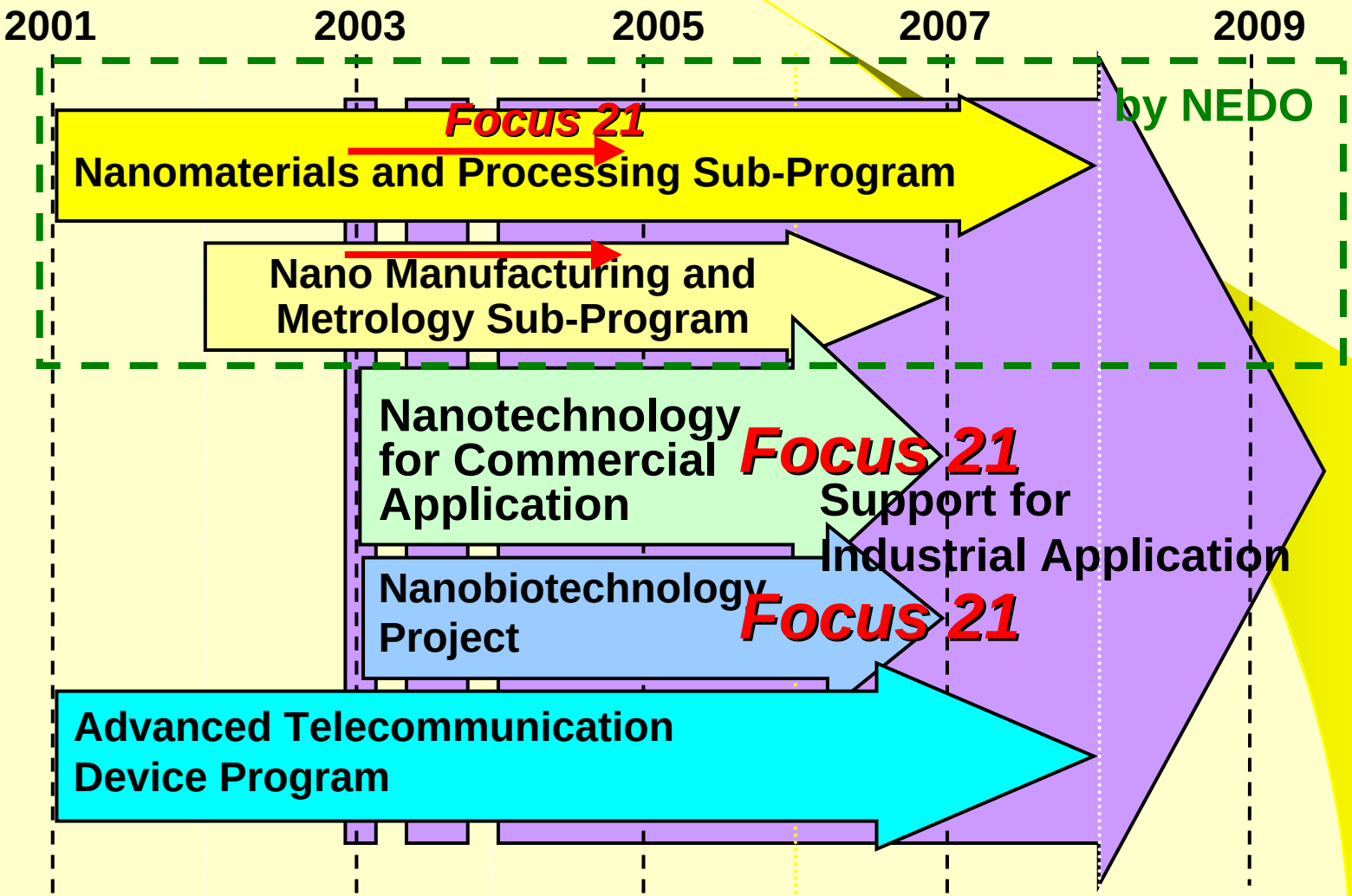
**Facilities & Integrated Support**

- JST Project for Measurement Tools
- Nanotechnology Support Project

**COEs & I-U-G Network**

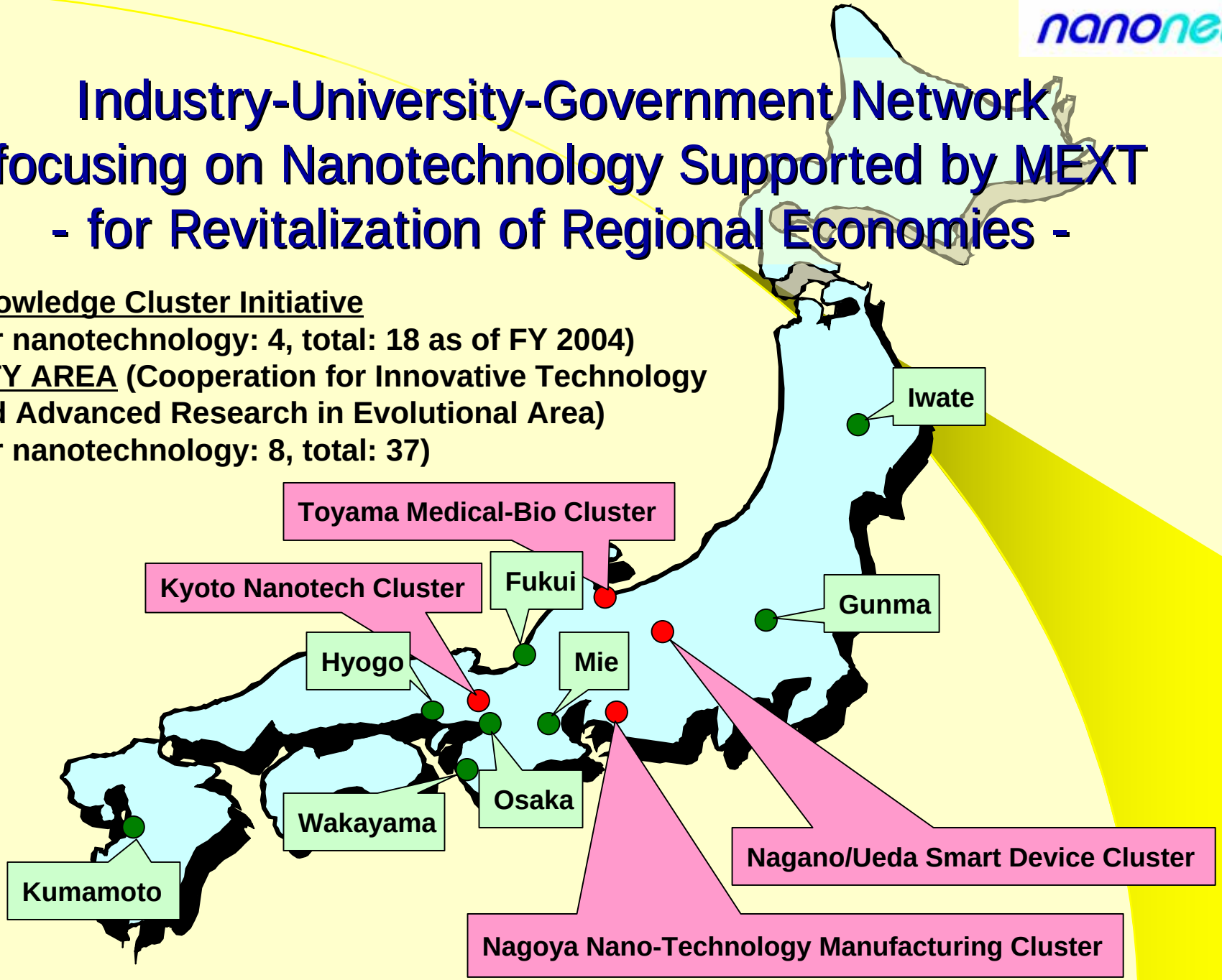
- 21st Century COE Programs
- Knowledge Cluster Initiative
- CITY AREA

# Nanotechnology Programs by METI



# Industry-University-Government Network focusing on Nanotechnology Supported by MEXT - for Revitalization of Regional Economies -

- **Knowledge Cluster Initiative**
  **(for nanotechnology: 4, total: 18 as of FY 2004)**
- **CITY AREA (Cooperation for Innovative Technology and Advanced Research in Evolutional Area)**
  **(for nanotechnology: 8, total: 37)**



# Nanotechnology Support Project by MEXT

## Advisory Board

Chairman: Hiroyuki Sakaki, University of Tokyo

## Common Use Facility Support

by 14 Research Institutes

Common Use of Large Facilities for Characterization & Fabrication

- High-voltage Electron Microscope
- Nano Foundry
- Synchrotron Radiation
- Molecular Synthesis & Analysis

## Informational Support

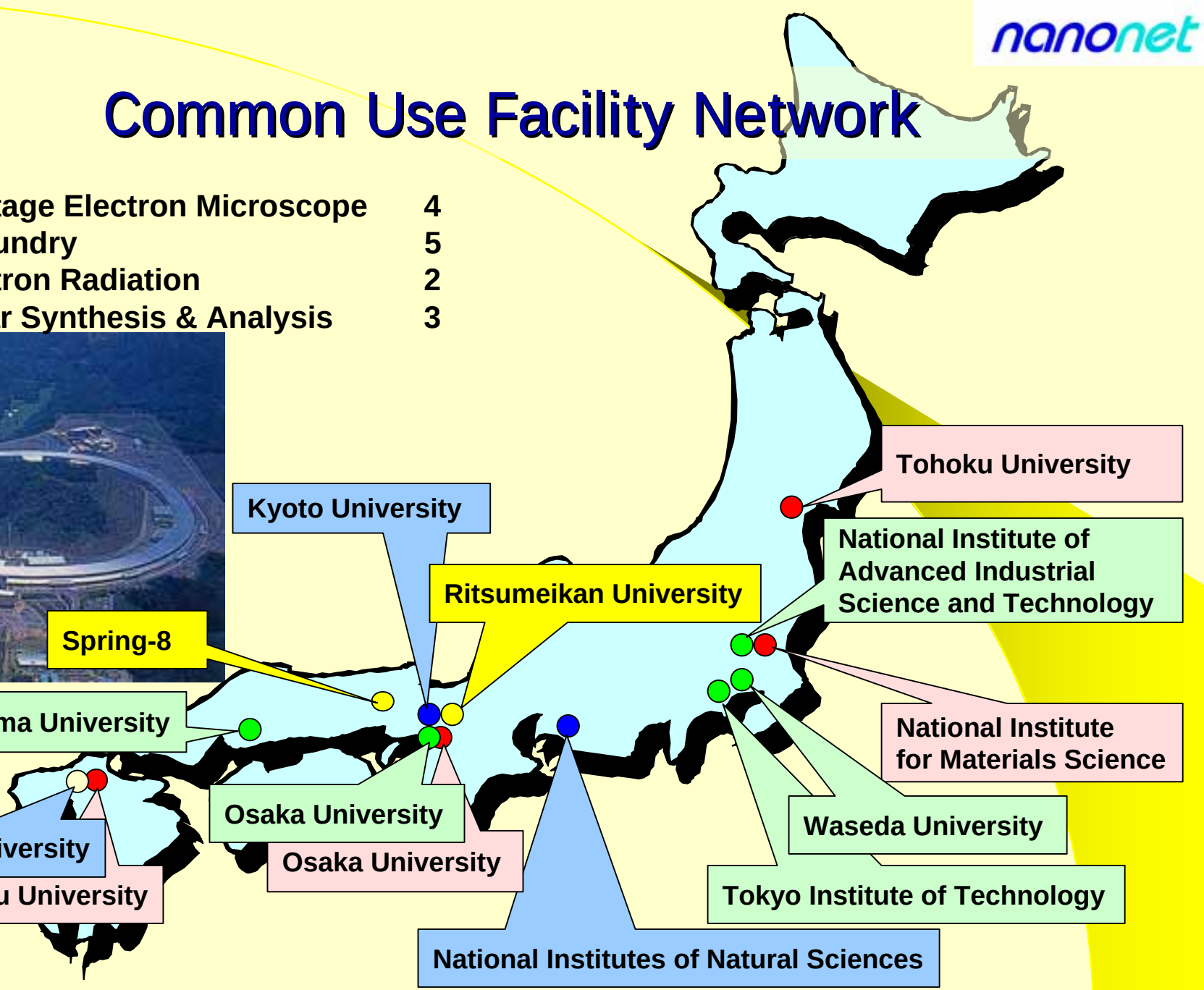
by Nanotechnology Researchers Network Center of Japan

Director General: Teruo Kishi

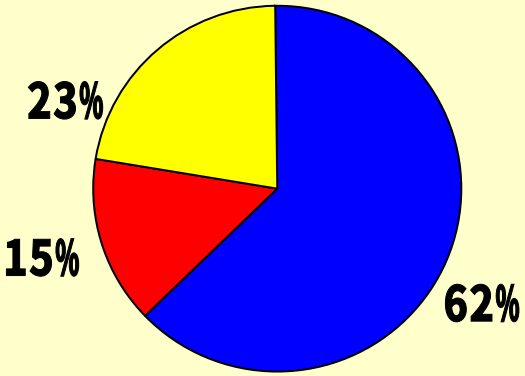
- Web page, Newsletter & Publication
- Symposia & Workshop
- Data-base
- Education & Training
- International Collaboration

# Common Use Facility Network

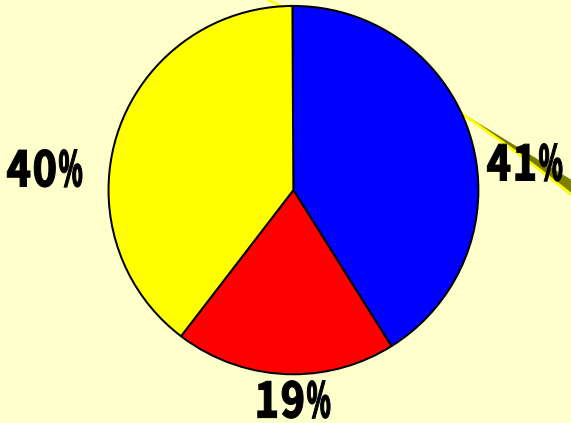
- High-voltage Electron Microscope 4
- Nano Foundry 5
- Synchrotron Radiation 2
- Molecular Synthesis & Analysis 3



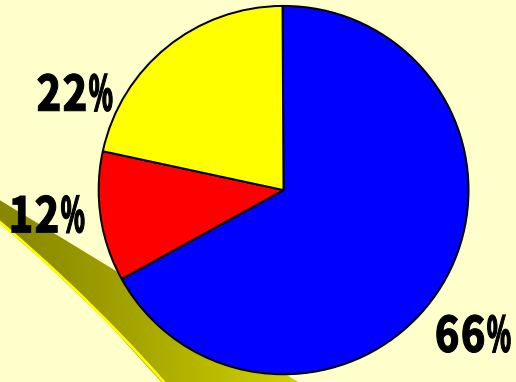
# Common Use Facility: Number of Users (FY 2003)



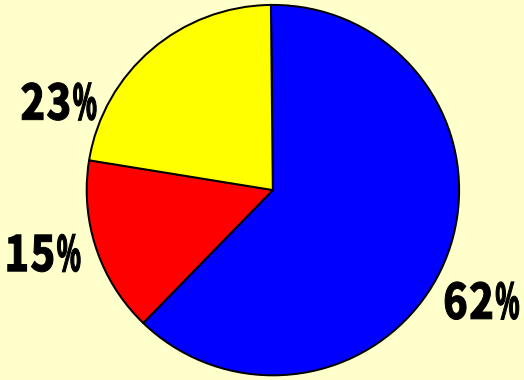

HV-TEM: 155



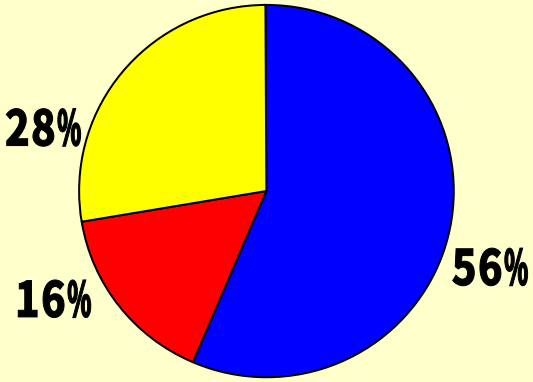

Nano Foundries: 257




Synchrotron Radiation: 139




Mol. Synthesis & Analysis: 253




Total: 804

Univ.

Gov. Inst.

Industry

# Nanonet – Clearinghouse for Nanotechnology Information

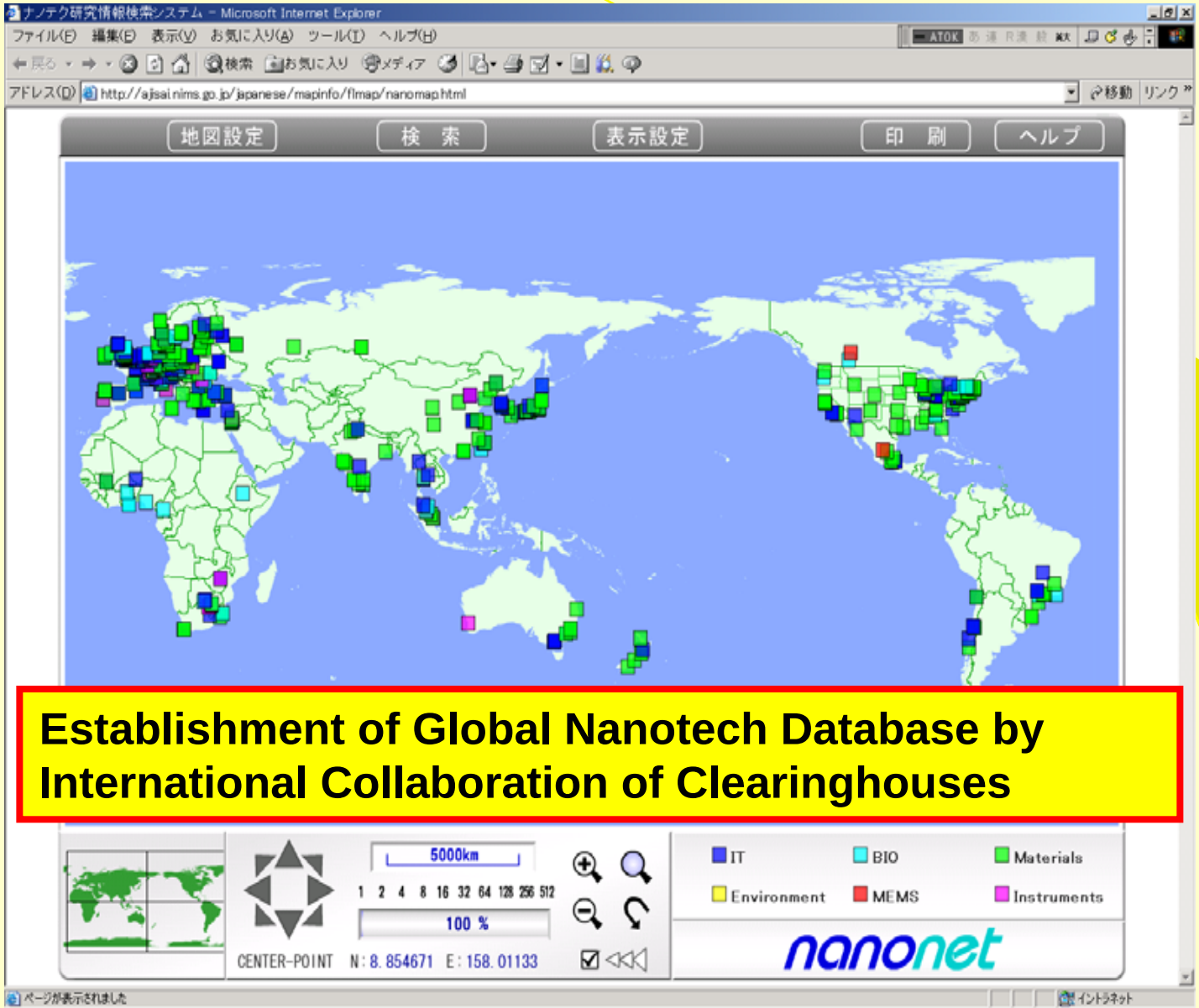
Experimental Data
Standardization
Business
Researchers
(field, accomplishment, publication, …)
Institutes
(Laboratory, Infrastructure, Network, …)
Policies (funding, program, project)
Human resource development
Health, Environmental and societal issues

Integration

**National Institutes**
AIST
NIMS
Nanonet
RIKEN
NBCI
etc.

Nanonet has been focusing on support of interdisciplinary / International Collaboration

# Nanotech Map (under construction)




**Establishment of Global Nanotech Database by International Collaboration of Clearinghouses**

# Assignments of Nanonet in Health, Environmental and Societal Issues

- Support in network of (natural and social) scientists
  - Information provision
  - Organizing meetings
- Study on societal, ethical and long term issues and communication with public
- International cooperation
  - Asia Nanotechnology Forum (ANF)
  - Global Nanotechnology Network (GNN)
  - International Nanotechnology in Society Network (INSN)
  - Bilateral collaboration programs

etc.

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