

Press Conference

President of JST

October, 2012



Dr. Yamanaka awarded Nobel Prize in Physiology or Medicine

Relationship with JST

FY2003

Research leader on the topic of "Generation of Pluripotent Stem Cells for Clinical Application" in JST's team-oriented strategic basic research program, CREST (through FY2008)

FY2006

Generated iPS (induced pluripotent stem) cells, which are pluripotent like ES (embryonic stem) cells, from skin cells of mice.

Induction of Pluripotent Stem Cells from Mouse Embryonic and Adult Fibroblast Cultures by Defined Factors Kazutoshi Takahashi¹ and Shinya Yamanaka¹, ², Cell 126:663-676.

FY2007

Generated iPS cells from human cells.

FY2008

Launch of JST's "Yamanaka iPS Cell Research Project" (through FY2012)



Dr. Yamanaka (center), Mr. Nakamura, president of JST (left) and Mr. Matsumoto, president of Kyoto Univ. (right)

Department of Stem Cell Biology, Institute for Frontier Medical Sciences, Kyoto University, Kyoto 606-8507, Japan

² CREST, Japan Science and Technology Agency, Kawaguchi 332-0012, Japan



Constructing a renewed R&D system focusing on Nanotechnology and Materials



Framework of the 4th Science and Technology Basic Plan

- Shift from "S&T-pushing" to "Needs-pulling" Policy
- Change from "Science & Technology (ST) Policy" to "ST & Innovation (STI) Policy"
- Change from 8 Prioritized Areas to 3 Societal Needs (Nanotech and ICT as Common STI Bases)

Green Innovation Life Innovation Reconstruction (Strategy council) (Strategy council) and Revitalization (Strategy council) Nanotechnology and Materials (Common infrastructure technology study WG) ICT (Common infrastructure technology study WG)



Nanotechnology and Materials as the basis of nation/industry

In pursuit of social value-added final products

Addressing renewed industrial structure to maintain global competitiveness

Green society equipped with innovative energy and environment source

Aging society equipped with world top-class healthcare and welfare

Information explosion society in the Big Data era

Market size in 2010% (product shipments)

Key Industries Key Technologies

Materials/Device Industry

Electronics Industry

136 trillion yen in Japan

17 trillion yen in Japan

※Calculated by JST based on "Indices of All Industry Activity of 2010" published
by Research and Statistics Department in METI's Secretariat on 13 April 2012



Direction of nanotechnology investment

e.g. in electronics field:

"Development of nanoelectronics device surpassing current siliconbased device (Beyond CMOS)!"

National strategic investment

- Development of new materials/ new principles/new structures/ logic element/memory element
- Facilitating interdisciplinary research and fusion of various technologies (IT-bio etc.) beyond various boundaries

Developing "Platforms & Networks" of universities, research institutions, etc.
"Center of Innovation" (COI)

System of maximizing practical use of major infrastructure

Accelerating generation of innovation by vertical collaboration and fusion of different fields

Collaboration with academia

- Human resource development
- Proposals

- Common Infrastructures such as TIA, SPring-8, J-PARC, etc.
- K computer, etc.



Example of "Platforms & Networks": Element Strategy

Strategic Basic Research Programs		
CREST: Element Strategy	PO: Kohei Tamao (Riken)	2010-2017
PRESTO: Element Strategy	PO: Hideo Hosono (Tokyo Institute of Tech.)	2010-2016
Collaborative Research Programs Based on Industrial Demand		
Heterogeneous structure control on metal	PO: Masaharu Kato (Tokyo Institute of Tech.)	2010-
High-performance magnet	PO: Hirotoshi Fukunaga (Nagasaki Univ.)	2011-
Promotion and Support for International Cooperation		
SICORP: Substitutions of critical raw materials (Japan - EU)	PO: Kazuyuki Kuroda (Waseda Univ.)	Selection in progress
Projects entrusted by MEXT (Ministry of Education, Culture, Sports, Science and Technology)		
Element Strategy Project <industry-academia-government collaboration="" type=""></industry-academia-government>		2006-2013
Element Strategy Project <research formation="" platform="" type="">※</research>		2012-2021
Tohoku Innovative Materials Technology Initiatives for Reconstruction		2012-2016

X Magnet materials: NIMS, Electronic materials: Tokyo Institute of Tech., Catalysis/Battery materials: Kyoto Univ., Structural materials: Kyoto Univ.

- Promoting collaboration with SPring-8/SACLA, J-PARC, K computer, Nanotechnology Platform
- •Planning of symposium etc. at related academic societies (physics, chemistry, metals, ceramics, etc.)