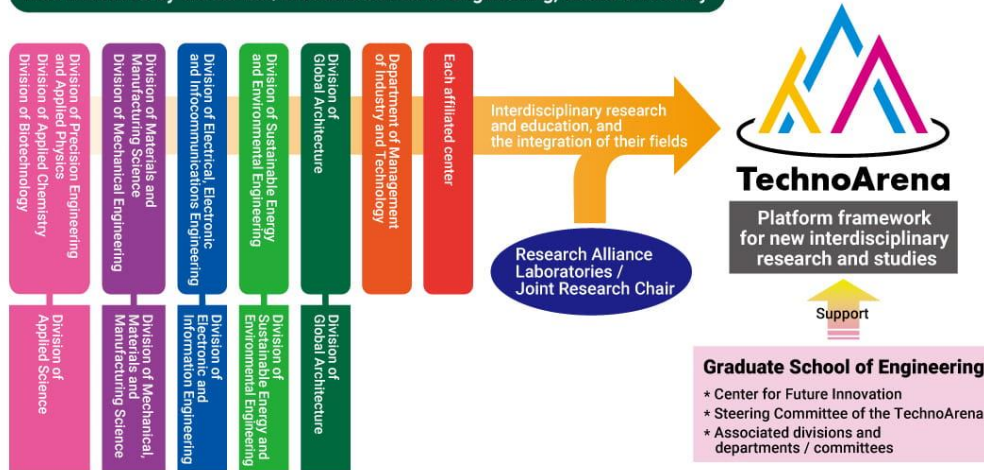


## New initiatives by the School/Graduate School of Engineering, Osaka University



Existing divisions of the School/Graduate School of Engineering and organizations of affiliated centers

## Kino-oka Research Base for Cell Manufacturability

Innovation Base, Center of Excellence in Advanced Research Division

Research Base for Cell Manufacturability, a division of the Center of Excellence in Advanced Research, TechnoArena, is the Kotozukuri Consortium, whose aim is to make cell-based products simpler, safer, and efficient to manufacture, and to ensure consistent quality. The consortium makes deep and valuable discussion of technology and regulation for cell manufacturing, leading to development of human resources with sophisticated sense.



Director: Masahiro Kino-oka  
Professor, Dept. of Biotechnology

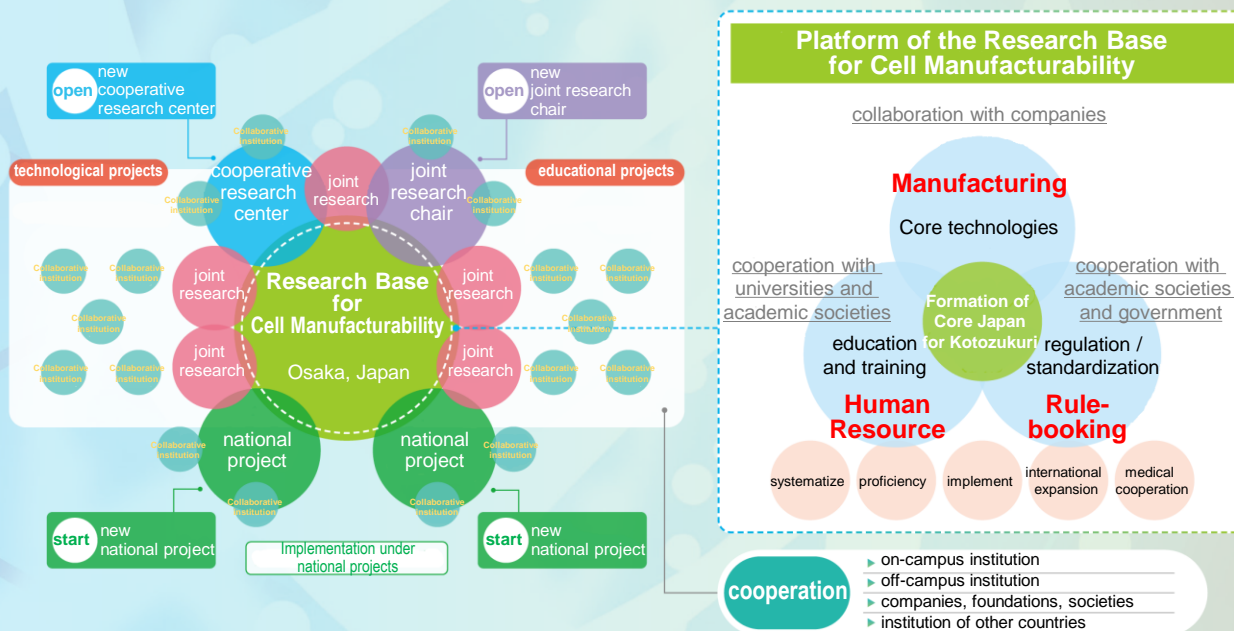
# Research Base for Cell Manufacturability



Innovation Base

Center of Excellence in Advanced Research Division

TechnoArena



## Contact



Office,  
Research Base for Cell Manufacturability  
Graduate School of Engineering,  
Osaka University

2-1 Yamadaoka, Suita, Osaka 565-0871, Japan  
TEL & FAX : +81-6-6879-4246  
E-mail : bpse\_kotozukuri@bio.eng.osaka-u.ac.jp



Graduate School of Engineering,  
Osaka University

# Efforts of "Research Base for Cell Manufacturability" to construct ecosystem for future society

- This center is a platform consisting of a cell manufacturing research center, an education center, and a corporate center to practice "formation of a core group of brains (Core Japan), accomplishment of a task, and communication to the next generation" in new technological and industrial fields that require the concept of cell manufacturability.
- This center is a platform consisting of a cell manufacturing research center, an education center, and a business center to put into practice "the formation of Core Japan, the creation of Core Japan, and the transmission of the knowledge to the next generation."

## Formation and practice of Core Japan (think tank)

### Human Resource

Develop human resources with the sense to build systems in new industrial fields.

As educational activities in academic fields for which textbooks do not exist, we create original contents, develop experts, and provide training and practical education in collaboration with companies.

In particular, in new technological and industrial fields that require the novel concept of cell manufacturability, we bring together companies that facilitate industrialization activities, conduct education that contributes to social implementation (academic understanding, development and research methods, and regulations), and produce human resources.

#### Educational courses for cell manufacturability:

- cell processing design course
- cell manufacturing design course



### Rule-booking

Build on the concept of regulatory compliance and standardization to promote industrialization.

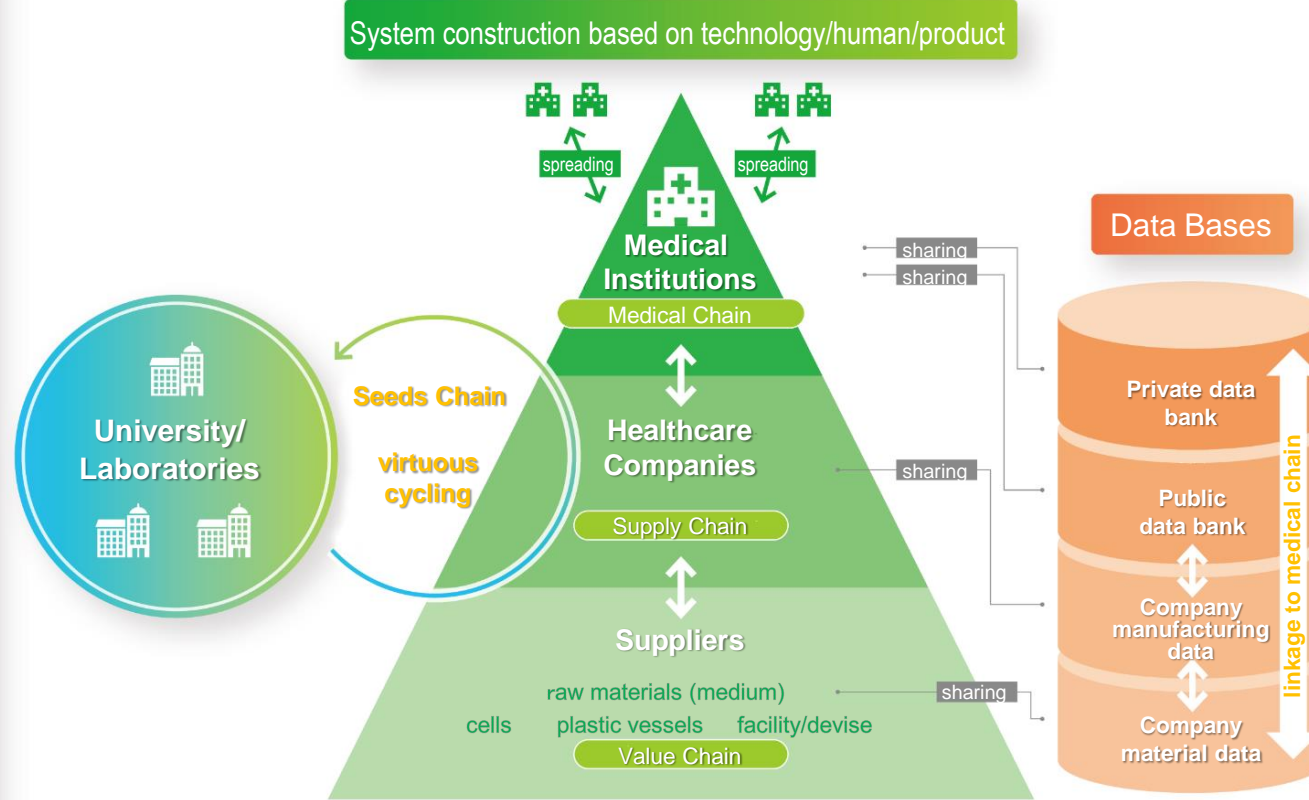
In the construction of systems for social implementation in new industrial fields, we will create a debate platform that connects multiple companies, government, and academia to discuss regulatory compliance and standardization, which are difficult for individual companies to handle, and work with participating organizations to create guidance, guidelines, and educational content that will contribute to the social implementation of technology.

Working groups will be set up for each issue, and companies and research institutions that wish to participate will draft texts, with verification as necessary, and work together with academic societies, governments, and related business organizations to complete the documents.

The findings will be incorporated into educational content and utilized for human resource development.

#### Working groups:

- aseptic environment
- outer-stream (Logistics)



ex.) Ecosystem for cell therapy/regenerative medicine

### Manufacturing

#### Technical requirements:

- process stability
  - cost reduction
- with considering cell manufacturability.

#### Establishment of developmental principal for cell manufacturing

##### 1 Formation of the platform (group of brain)

Quality of cells  
2 Evaluation method



6 cell distribution

Process development  
3 Process design



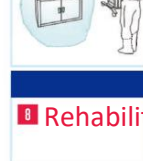
7 Automation

4 Scale up system



9 Data utilization  
10 Technologies of next-generation

5 Scale out



8 Rehabilitation

#### Technical development toward social implementation

##### Core members in companies' laboratories

Hitachi Plant Services Co.,Ltd  
RORZE Lifescience Inc.  
FUJIMORI KOGYO CO., LTD.  
Hitachi, Ltd.

SHIBUYA CORPORATION  
Iwatani Corporation  
Cell Exosome Therapeutics Inc.



Joint research

Academic consultation