The 8th Regional Cluster Seminar

University - Industry - Government Collaboration Activity at Shizuoka University

> Innovative Joint Research Center (IJRC) Shizuoka University Director Naomichi Okamoto March 8, 2004

## **Organization of Shizuoka University for**

# **University-Industry-Government Collaboration**

- Oct. 1991 Center for Joint Research (CJR) established
- Oct. 1993 CJR building completed in Hamamatsu Technopolis Area (off campus)
- Apr. 1997 Satellite Venture Business Laboratory (SVBL) completed (on campus)
- Dec. 2002 Intellectual Property Head Office (IPHO) established in CJR

Jan. 2003 Campus Incubation Facility (CIF) completed (on campus)

**Oct. 2003** Innovative Joint Research Center (IJRC)

completed (integration of CJR, SVBL, CIF and IPHO)

(2 Prof, 2 Associate Prof. full-time and part-time staffs, 55)

## **Integration & Expansion of University-Industry Cooperation Organ**



# **Innovative Joint Research Center**

Director:Prof. Naomichi OkamotoVice-Director:Prof. Toshifumi SugiuraExpected Effects:

Practical cooperative research is quickly operated corresponding to needs of regional corporations and market trend Increase in university-industry cooperative research project Further increase in cooperative research and entrusted research Continuous foundation of venture corporations from University Generation of useful intellectual property and technology transfer to regional corporations

Increase in development of unexplored technology useful for new industry

# 1. Cooperative Research Division

<u>Liaison Section</u> (Prof. S.Okamoto)

*Examination of university's seeds and corporation's needs* 

 $\diamond \mathbf{Promotion}$  of cooperative research and development

**University-industry cooperation coordinators** 

**Practical Research Section** 

(Prof. M.Fujimoto & Associate Prof. M.Kimura)

Practical development corresponding to corporation's needs and technical consultation

**Order Stress and Series and Seri** 

and corporation's development for goods production

**Cooperative Research Project Section** 

 $\diamond$ Increase in university-industry cooperative research project

# Transition of Cooperative Research



60% : for corporations in Shizuoka prefecture

## 1/3 : for regional small and medium

corporations

# **Recent Industrialization from Shizuoka Univ's Seeds**

Materials Science & Chemical Eng., Prof. S. Kaneko Functional film formation technology by spray thermal-decomposition method Inexpensive film formation in air Dye sensitivity-intensified solar battery <u>New venture</u> Electrical & Electronic Eng., Prof. S. Okamura Moisture measurement technology using microwave <u>Automatic tea production system (60%)</u> Non-contact and non-destructive real-time measurement Electrical & Electronic Eng., Prof. S. Shinohara Vibration measurement technology by laser-diode self mixing <u>Measurement system</u>

Materials Science & Chemical Eng., Prof. T. SakoChemicals-free precise cleaning technologyNew venture2003.6

**Materials Science & Chemical Eng., Prof. S. Uchida** Water purification technology using together supersonic wave and utlra-violet light

Materials Science & Chemical Eng., Associate Prof. N. Takahashi Quartz film formation technology for high frequency use

**IJRC, Prof. M. Fujimoto** DNA analysis and memory system on CD-R

New enterprise in several years

## DNA analysis and memory system on CD-R

## **Shizuoka Univ.** Prof. M. Fujimoto **Tokushima Univ.** Prof. Y. Baba

- ♦ Formation of microcapillaries on CD-R
- Only one CD-R firstly enables to do electrophoresis, analysis and memory of DNA
- ASTI, Inc. cooperated trial product
- Distinctions of this system: Keeping DNA sample & analysis data on one CD-R Forbidding to manipulate the record Memory data are portable

# Meat traceability







**Infectious sickness** 







\*Expensive \*Special

\*Large

Tailor-made medical treatment

**Conventional DNA analysis system** 



# 2. Incubation Division

# Head: Prof. Akira Nakayama (Mechanical Eng.) Associate Prof. Masahiro Hayashi

**Mission: Support & incubation of venture corporations** 

from University (pre-incubation)

- >Entrepreneur meeting & venture course
- >Examination of technical trend & market trend
- **Consultation of venture foundation**
- ≻Business plan contest (2000'~)

**>**Rental laboratory & rental office for venture corporation

# **Campus Incubation Facility (CIF)**

### Rental Laboratory (9 rooms, No vacancy room now)

Prof. T. Sako	Chemicals-free precise cleaning system	<b>June 2003</b>			
Prof. S. Kaneko	thermal-decomposition				
		Apr. 2004			
Prof. Y. Takebayashi	Ubiquitous wearable device	shortly			
Prof. S. Uchida	Drainage-purifying system using together supersonic wave and optical oxidation				
Prof. N. Okamoto	Non-contact high-speed test system of print circuit board				
Prof. K. Mizoguchi	Zeolite film for separating water and alcohol				
Prof. T. Sugiyama environment	. Sugiyama Multimodal information contents under next–generation learning Iment				
Prof. T. Nakamura	Development of Quartz film formation tech	nology			
Prof. K. Nakazaki	Powerful soil easy on the environment				

### **Rental Office (3 rooms)**

Prof. H. Tokuyama	Foundation of knowledge generation community for small and medium corporations
Prof. S. Shiokawa	New technology of elastic surface wave
Associate Prof. M. Ki	imura and Mr. Y. Yamamoto (Doctor's course student)

3. <u>Unexplored Technology Development Division</u>

Head : Prof. Norihiro Inagaki (Materials Science)

SVBL was reorganized in IJRC as this Division Mission: Development of unexplored technology useful for new industry

•Research project execution with domestic and overseas research institutes

•Seeds creation for venture corporations, cooperative researches, and research projects

# Regional Contribution

### **R&D** Project

Material/Device Measurement/System Energy/Environment

**25 Projects** 

## **Venture Workshop**

**20 times/year** (Workshop with Enterprises)

#### **Exhibition** • Results of cooperative research • Exhibition of products

(Search for research partners)

### **Cooperative Research**

- 'Regional Innovation Project (Shizuoka Pref.)
- 'JST "Sakigake" Projects
- University-Industry Cooperative Projects (Shizuoka Pref.)
- Exchange Program of Science and Technology between Japan and Czech Republic

## **Venture Flotation**

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POTENCE - DO INCLUMENT

aborator

High-Pressure Processing, Co., Ltd.

- Precision cleaning technology with small environmental loading.
- Environment-conscious processing technology for alumite.
- Production and distribution of equipments

**Actocity Industry Information Office from Apr. 2003** (close to Hamamatsu station) **Technical consultation Tokyo Liaison Office from Apr. 2004** University-industry-government collaboration and intellectual property activities from Mar. 2004 **Foreign Branch Office University of Victoria, Canada University-university collaboration Intellectual property (IP) collaboration** 

## **Cooperation Agreement with UVIC IDC**

Purpose : Establishment of cooperation system with UVIC IDC North America satellite office will be founded



Globalization of regional (small & medium) corporations

## **<u>Visiting Professor</u>** (part-time) 2004.4

**1~6** : University-industry cooperation coordinator

1.	Jouji Nakamura	ASTI Co.,Ltd.
2.	Takanori Suzuki	Tomoegawa Paper Co.,Ltd.
3.	Kikuo Takemoto	Sumitomo Electric Industries, Ltd.
4.	Michio Horiuchi	Solar and Wind Laboratory Co.,Ltd.
5.	Motoyasu Nakanishi	Suzuki Sogyo Co.,Ltd.
6.	Takeo Fujita	Yamaha Motor Co.,Ltd.
7.	Yoshinori Hatanaka	Professor, Aichi Institute of Technology
8.	Yutaka Tsuchiya	Hamamatsu Photonics Co.,Ltd.
9.	Junpei Abe	Suzuki Co.,Ltd.
10.	Teruo Nakakuki	Nihon Shokuhin Kako Co., Ltd.
11.	Kunihiro Yamada	Mitsubishi Electric Semiconductor Application Engineering Co.,Ltd.
12.	Hajime Haneda	National Institute for Material Science

# 4. Intellectual Property Head Office

President:	Hirokazu Nakai (Vice President of Shizuoka Univ.)	
<b>Director-General:</b>	Naomichi Okamoto (Center Director)	
Deputy Director-General: Norihiro Inagaki		
<b>Chief IP Coordinator :</b>	Ryoukichi Igarashi	
<b>IP Coordinators:</b>	Kazushi Dezaki	
	Masami Yanagisawa	
<b>IP Assistants:</b>	4 Persons	

- Contribution of the university to the society is promoted by improving the system that creates and utilizes the intellectual property attributed to the university after independent administrative incorporation.
- Manage and utilize the intellectual property of all members of Shizuoka university.



## Intellectual Property (IP) Managers

(from Aug. 2003)

- 1. Jun Nakajima: Patent attorney
- 2. Akio Ohta: Patent attorney
- 3. Toshikazu Nozue: Lawyer

9.

Akiyasu Shiba:

Taiyo patent & trademarks

Ohta patent office

Kato law patent office

- 4. Tadayoshi Yamanaka: Technical evaluation, patent evaluation <u>Venture labo Co.,Ltd</u>
- 5. Kenichirou Mimuro: Financial Institution

Hamamatsu Credit Bank

6. Yoshifumi Shibata: Management consultant

Hamamatsu Optronics Cluster

7. Kenji Kawamura: Patent management

Simtec Co.,Ltd.

8. Kuniaki Aoki: President of Venture Company

Space Creation Co.,Ltd.

President of Venture Company

Toho Harmony Inc.

# **Intellectual Property Policy of Shizuoka University**

- **Contribution to the Society** is treated as "the 3rd Mission" in addition to education and research.
- Management and utilization of IP are important contribution to the society.
- University faculties have responsibility in protection and utilization of IP.
- Change in ownership of IP created in university from individual to university.
- Invention is evaluated & esteemed by university.

Achievement evaluation and compensation.

- Activation of IP creation cycle.
- Utilization of much IP

Profit distribution to Univ., Labs., Inventors, STLO

**Increase of Cooperative / Accepted / Project Research** 

• Creation of new IP Increase of venture companies from university

- Job-inventions by the faculty members belong to the university in principle.
- Inventions belong to the inventor in special circumstances. e.g.; Venture companies from university
- Inventions created in cooperative researches with corporations. University and corporation share the right in proportion to the contribution.

It is also possible to transfer the right to the partner corporation at the reasonable consideration.

- Consignment research University owns the IP right
- Scholarship donation from company University owns the IP right

# **Authorized the right of invention**

- University bears costs of application / maintenance for intellectual property right.
- > Application of patents
  Patent attorney's office

**Direct electronic application** 

Increase in importance of foreign application
 Support JST technology transfer support center, etc.

## **Cooperation reinforcement with TLO**

- > Consignation of license activity of IP right to TLO.
- > Participation of TLO in the invention screening committee .
- > Applications of subset of inventions from TLO.

# **Incentive to inventor**

[Achievement evaluation in University]

- The case in which the job-invention is patented.
- The case in which profit is obtained by licensing or assignment of the intellectual property.

**[Compensation** from university to inventors]

- <u>Application compensation</u> in an application of invention. <u>Registration compensation</u> in the registration
- Profit by licensing royalty / assignment of the patent
   Licensing compensation
  - (Ex.) Profit of \$ 2,000,000

Inventor, laboratory, university, STLO obtain about \$500,000 each.

• The right to receive compensation continues to exist after change of job / retirement from the university.

# **Points of Intellectual Property Head Office in Shizuoka University**

- 1. Design to aim at the synergistic effects by germane cooperation between the IP Head Office and divisions for university-industry cooperation.
- 2. Comprehensive support for ventures from university in collaboration with financial institutions by 'Shizuoka University Fund'. (Including the second established business)
- **3.** Activation of university-industry cooperation in Shizuoka Prefecture, especially in Hamamatsu area.
- 4. Anticipated intellectual property by projects from Intellectual Clusters and Collaboration of Regional Entities for the Advancement of Technological Excellence, etc.
- 5. Rapid increase in cooperative research (4 times for the last 5 years) and regional contribution to smaller / venture corporations.
- 6. Increase of ventures from the university which received the prosperity of the incubator services. Utilization of intellectual property.

## **Establishment of Shizuoka university Fund "Venture Partners of Shizuoka University"**





## **Arrangement of University Regulations on IP**

#### Aspect of Shizuoka University (in Red)

Jan. 2004 Now

**Number of Universities** 

		Decided	discussion under	none
<b>University-Industry-Government</b>				
<b>Collaboration Policy</b>	2003.12.17	<u>10</u>	27	6
<b>Intellectual Property Policy</b>	2003.11.11	<u>9</u>	34	0
<b>Regulation for Job-Invention</b>	2004.1.14	<u>7</u>	36	0
<b>Regulation for Invention Compensation</b>	2004.1.14	<u>8</u>	35	
<b>Regulations for</b>				
Joint Research · Trust Research	2004.3	5	<u>38</u>	0
Contract Forms of				
Joint Research · Trust Research	2004.3	7	<u>36</u>	0
<b>Regulation for Handling of</b>				
<b>Research Result Materials</b>	2004.3	0	<u>41</u>	2
Policy for Conflict of Interest	2004.3	2	<u>41</u>	0

## Role of "University" "Industry " "Government" for Formation of Hamamatsu Region Cluster



## Hamamatsu Region Cluster: Participating organizations

#### **Intellectual Cluster Projects**

Industry : 6 Regional Companies, 7 Out-Region Companies plan to organize a research society for industrialization (about 50 companies) University : Shizuoka University, Hamamatsu University School of Medicine Government : Shizuoka Prefecture, Hamamatsu City and other 3 cities and 2 Towns Operating Body : Organization for Hamamatsu Technopolis

### **Industrial Cluster Projects**

Industry : 400 Regional Companies University : Shizuoka University, Hamamatsu University School of Medicine, Shizuoka Institute of Science and Technology, etc Government : Hamamatsu City, Organization for Hamamatsu Technopolis Operating Body : The Hamamatsu chamber of commerce & industry

#### **Collaboration of Regional Entities for the Advancement of Technology Excellence**

Industry : 10 Regional Companies University : Shizuoka University, Hamamatsu University School of Medicine University of Shizuoka, Osaka University, etc. Government : Shizuoka Prefecture, Shizuoka Prefecture Industrial Research Institute Operating Body : Research Foundation for Opto-Science and Technology

### TLO

Industry : about 150 Company members University : 177 members from Shizuoka University, Hamamatsu University School of Medicine, University of Shizuoka, etc. Government : Shizuoka Prefecture, Hamamatsu City, Shizuoka City, etc. Operating Body : Research Foundation of Hamamatsu Science and Technology Total of Participating Organizations

## Industry

#### **'600 Regional Companies**

#### University

- •2 Regional Universities
- •5 Universities in Pref.
- 10 Universities outside the Pref.

#### Government

#### Administrative agencies

- Public Research Institutions
- Industrial Support
   Organizations

# **Task for the Future** Formation of Hamamatsu Region Cluster

Promotion of University-Industry Collaboration Researches <u>Launches of University-Industry Cooperative Researches Leading to New Businesses</u>

Excavation of New Enterprise Contributing Formation of Cluster <u>Participation of New Enterprises to Cluster Formation Projects</u>

Chain Creation of New Business

Creation of Spin-off Ventures and University Ventures, etc.

Business Solution by Concentrating Regional Collective Strength