

Engineering Competency III  
-Summer Camp-

**GMSI-GSDM  
Summer Camp 2016**

**Report**

Summer camp  
Organizers & facilitators  
Aug.19, 2016



**Participants**

67 Participants from a variety of engineering fields  
representing 21 institutes of 14 countries and 4 companies



**Details of the Participants**

Peking University	Chemistry	1
Tsinghua University	Optical Engineering	1
KAIST(Korea Advanced Institute of Science and Technology)	School Of Material Science And Engineering	1
Seoul National University	Mechanical Engineering	1
Nanyang Technological University	Mechanical and Aerospace Engineering	1
Indian Institute of Technology Delhi	Physics	1
Columbia University	Applied Mechanics (Materials Science)	1
Massachusetts Institute of Technology	Mechanical Engineering	1
Rice University	Applied Physics	1
Stanford University	Electrical Engineering	1
The University of Texas at Austin	Mechanical Engineering	1
University of California, Berkeley	Mechanical Engineering	1
University of Toronto	Materials Science and Engineering	1
University of São Paulo	Mechanical Engineering	1
KTH (Royal Institute of Technology)	Robotics	1
Technical University of Munich	Computer Science / Robotics	1
ETH Zurich	Microfluidics	1
(Swiss Federal Institute of Technology)	Biosystems Science and Engineering	1
Suola Superiore Sant' Anna	Biorobotics	1
Aalto University	Engineering Physics	1
Imperial College London	Aeronautical Engineering	1
University of Abomey-Calavi	Chemistry	1
	Mechanical engineering	22
	Precision Engineering	5
	Aeronautics and Astronautics	5
	System Innovation	4
	Civil Engineering	1
	Chemical System Engineering	1
	Computational Biology and Medical Sciences	1
	Computer Science	1
Hitachi, Ltd.	Research and Development Group	1
Toshiba Corporation	Corporate R&D Center	1
East Japan Railway Company	Research & Development Center	1
Ebara Corporation	Fluid Machinery % Systems Company	1



**Schedule**

	7 am	8	9	10	11	12	1 pm	2	3	4	5	6	7	8	9
Wed. July 27				Reg.	Lectures	Lunch	UT Lab Tour			Travel to Camp			Dinner		
Thu. July 28	Break fast		Opening	Self-Introduction	Technical Session	Lunch	Team Meeting	Break		Team Meeting			Dinner		Team Meeting (Optional)
Fri. July 29	Break fast			Team meeting		Lunch	Final Presentation		Photo	Student Session			Award Ceremony & Banquet		
Sat. July 30	Break fast	Check out		Company Lab Tour		Lunch	Closing			Return to Tokyo					

Sanden Global Center and Sanden Forest

Venue: UTokyo, Sanden Communication Plaza and Snaden forest



Opening session at UTokyo



Sanden Communication Plaza



Sanden Forest



# Day1: Lectures & UT Lab tour

Address:  
Prof. Watanabe



Introduction:  
Prof. Yokono



Lectures:  
Prof. Takagi



Dr. Ikuhara



Dr. Koike



Address:



Prof. Shiroyama

Prof. Mitsubishi



UT Lab tour

**Medical devices:**  
Mitsubishi-Sugita Lab, Takagi Lab

**Micro-nano applications:**  
Maruyama-Chiashi Lab, Ikuhara Lab

**Engine, Satellite:**  
Nakasuka-Funase Lab, Kunieda-Mimura Lab



# Day 2: Team Meetings –task-

Task is to **propose an innovative product/service for the Japanese society** related to <Energy, Environment, Healthcare, Information Technology, Infrastructure> and propose an **international research project to demonstrate the proof of concept or to accelerate the innovation process.**

Presentation template

- ✓ Survey
- ✓ Problem identification
- ✓ Proposal
- ✓ Organization
- ✓ Budget
- ✓ Potential impact

**Problem identification**

- Describe social and technical backgrounds. (e.g. statistical data, public statements, journal papers, etc.)
- Identify the problem.
- Discuss why the Japanese society needs to cope with the problems.

**Idea of Novel Product/Service**

- Propose a novel product or service
- Clarify its originality in comparison to existing products/service
- Clarify why the proposed product/service would be well accepted by the Japanese society

- 10 teams (6-7 participants/team) were organized in advance.
- Each of 4 teams had 1 researcher from industry.
- Proposal “for the Japanese society” so that shy Japanese students could be involved in the discussion.



# Team Meetings



Some UTokyo students took an excellent initiative during the team meeting.



# Final Presentations





# Student Session

## Cross-cultural communication

In each group, feel free to talk about things such as:

- **Career path**  
e.g., job hunting, entrepreneur, postdoc issues
- **Financial support for students**  
e.g., scholarship, salary
- **Student life**  
e.g., working hours, private time, vacation, colleagues, facilities
- **Gender problems**  
e.g., male-female ratio in academia
- **Interaction with foreign students**  
e.g., support system, language class

★ Each group will give a **presentation at the banquet** (within 5 minutes, no slides).



# Evaluation & Awards

Comments given to each team

Criteria	Points
innovation, and potential impact	/ 5 points
background survey, technical soundness, feasibility, and project management	/ 5 points
Teamwork & presentation	/ 5 points

Team 1 (Salt Fuel in Emergency)

It was excellent that...

- Idea was unique.
- Team work and presentation flow were excellent.

Becomes better if you improve...

- ✓ Technical feasibility.
- ✓ Budget planning



Awards for  
Best Innovation  
Best Presentation  
**Best Proposal**



Winners of best proposal (Team1)

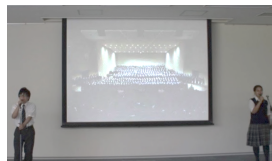


# Tour to Sanden Global Center & Sanden Forest

Lab tour and discussion



Visit to global center



Chorus of high school students



Lunch session



# Questionnaire Summary (1)

	Enjoy the camp?	Lectures	Team structure	Technical session	Team meeting	Final presentations	UT Lab tour	Company tour	Location	Meals	Accommodations	Organization
All(2016)	4.5	3.9	4.2	4.0	4.4	4.3	4.2	3.8	3.5	3.5	3.8	4.3
All(2015)	4.6	3.7	4.0	3.9	4.3	4.2	4.1	4.0	4.4	4.3	4.6	4.5
Invited from universities	4.6	4.1	4.2	4.1	4.6	4.5	4.4	3.8	3.4	3.3	3.7	4.6
Invited from companies	4.8	4.3	4.8	4.5	4.5	5.0	4.5	3.8	3.3	3.8	4.3	4.3
UT (non-Japanese)	4.4	3.9	4.1	4.1	4.3	4.3	4.3	4.0	3.8	3.7	4.0	4.3
UT (Japanese)	4.5	3.4	4.1	3.7	4.3	3.8	3.6	3.5	3.1	3.4	3.6	3.8

- Basically, most of the participants enjoyed the camp very much.
- Scores vary depending on the previous experience of the participants.
- Researchers invited from companies like the summer camp very much.
- Accommodation and meals are needed to consider.



# Questionnaire Summary (2)

In which areas did you find the camp beneficial?

	Improving brainstorming /discussion skills	Obtaining valuable teamwork/ leadership experience	Expanding my knowledge of other engineering fields	Developing an international network of friends/ colleagues	Widening the scope of my research
N. (N=66)	36	44	26	45	17
Ratio 2016	55%	67%	39%	68%	26%
2015	61%	82%	49%	82%	35%

- The camp surely enhanced the “competency” of the participants.
- Researchers from companies demonstrated good leadership and task/time/team management skills.



# Comments from Participants

- ❖ It was an **excellent experience and I strongly recommend for those who wants to participate in future.**
- ❖ It was a amazing experience! The organisation team did a great job, everything was planned well. It was a lot of fun **experiancing the foreing cultures and make friendships, which hopefully will last a long time.**
- ❖ I have learned a lot from this camp. Especially the teem meeting, **expanding my knowledge and understanding international cultures and friends.**
- ❖ It was a **lifetime changing experience.**
- ❖ It took **much time to decide the theme**, and we had **little time to talk about technical problem.**
- ❖ It would be better other activities rather than visiting a company.
- ❖ If we could **add some Japanese culture section and Japanese food**, I will feel much more excited.
- ❖ It would be great if there are **more Japanese students.**

## Action plan for next summer camp

- Self-introduction on the first day. Self-introduction slides can be shared.
- Some sports or Tokyo city tours on the first day, possibly planned by students
- Lectures more related to team meeting topics
- Supervision during the team meeting and giving more specific topics or keywords
- Accommodation and meals are needed to consider. (Rooms with private bathroom! ) 14

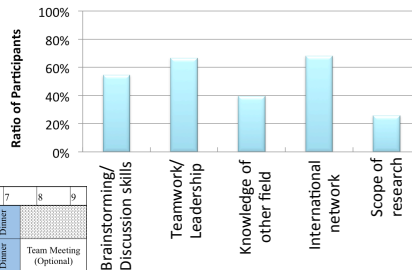
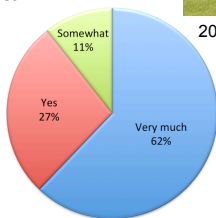
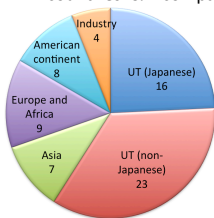


# Engineering Competency III (Summer Camp)

- UTokyo and world-leading universities Ph.D students discuss and exchange ideas
- Theme: Energy, Environment, Healthcare, Information Technology, Infrastructure
- 67 Participants from 21 universities of 14 countries & 4 companies



2016 Venue: UTokyo and Sanden Communication Plaza



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▲ Which areas beneficial

◀ Schedule of Summer Camp