

# Global Research Strategy for Future Career

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## Outline of Presentation

- Self Introduction
- Brief Introduction of My Research
- Chance for study in Foreign Country
- Long term internship program
- JST-JICA SATREPS
- Double Degree Program
- JSPS Fellowship
- Why choose Netherland for studying
- Introduction of UNSCO-IHE
- What are differences with Japan, Vietnam and EU?
- What I recommend to study in foreign country

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## Self Introduction

### Previous

2011-2013 Bachelor Degree, Nagaoka University of Technology

Long Term Internship in Hanoi University of Science and Technology

2013-2015 Master Degree, Nagaoka University of Technology

JST-JICA SATREPS ESCANBER PJ with National Institute for Environmental Studies,  
Hanoi University of Science and Technology and Rubber Research Institute of Vietnam

### Current

2015- Ph.D Candidate, Nagaoka University of Technology

JST-JICA SATREPS ESCANBER PJ with National Institute for Environmental Studies,  
Hanoi University of Science and Technology and Rubber Research Institute of Vietnam  
FISH meal wastewater PJ (Indonesia)  
Sewage Treatment PJ with Tohoku University (Egypt)

2015- JSPS fellow DC

2016- Ph.D Candidate, Hanoi University of Science and Technology

Double Degree Program with Department of Chemical Engineering

2016- Visiting Researcher, UNESCO-IHE

Using JSPS DC fellowship

### Visited countries on 2011-2016



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## Brief Introduction on My Research

Establishment of Zero-Emission type wastewater treatment system for industrial wastewater treatment

Target Wastewater	Field survey
Natural Rubber Processing wastewater (Vietnam)	<ul style="list-style-type: none"> <li>· Water quality analysis</li> <li>· Measurement of Green House Gas emission</li> <li>· Interview</li> </ul>
Fish Meal Wastewater (Indonesia)	<ul style="list-style-type: none"> <li>· Continuous flow experiment</li> <li>· Microbial community analysis</li> </ul>
Textile Wastewater (Japan)	<ul style="list-style-type: none"> <li>· Continuous flow experiment</li> <li>· Microbial community analysis</li> </ul>

Each wastewater, each country required optimization

## Chance for study in Foreign Country

Nowadays, there are chance to study abroad!

- University Internship Program
- Double Degree Program
- Join Research Project
- Tobitate JAPAN
- JSPS Fellow Ship

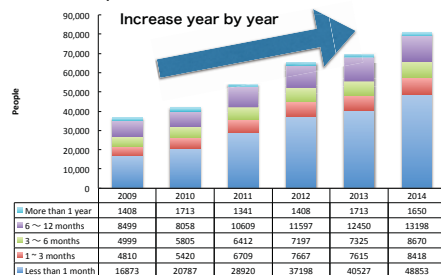


Fig. Number of foreign study by Japanese students (from JASSO HP)

## Chance to study in Foreign Country

Study in foreign country is a special experience



Not only language, but also something special

### My experiences

Long-term internship	International Research PJ	Double Degree Program

## Long Term Internship Program



### Purposes:

1. The student participated in internships at private enterprises, government agencies, or public entities can recognize the needs of society in the field of engineering and science. The internship will also develop practical experience, originality and an understanding of the significance of learning.
2. Fourth year students are required to spend up to five months working at private enterprises. This experience supports the research theme, their understanding of the occupation, and provides a creative approach to the future
3. We dispatch our students to private enterprises in Japan and abroad. They are also dispatched to universities abroad that are included in Academic Cooperation Agreements. In 2013, 48 students were dispatched to 27 institutes.

### Visiting Countries

Thailand: Asia Institute of Technology, Khon Kaen University, King Mongkut's University of Technology Thonburi  
 Vietnam: Danang University, Hanoi University of Science and Technology  
 Singapore: Meiden Singapore  
 Taiwan: National Cheng Kung University etc.



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## Long Term Internship Program



Place: Hanoi University of Science and Technology

Period: 5 months



Teaching experiment and Japanese



Field survey of traditional cassava factory



Field survey of existing treatment system

- Feel that integrated wastewater treatment system is required in Vietnam
- Must learn not only English, but also local language (Vietnamese)

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## What I learned from Long stay in Vietnam



- How to do experiment without basic reagent kit  
 → Can learn basic principle of experiment
- Health care management is most important
- What I expected from Vietnamese university?  
 → · Research assistant for Vietnamese Professor  
 · Expected high results (paper writing)
- Drinking party is important



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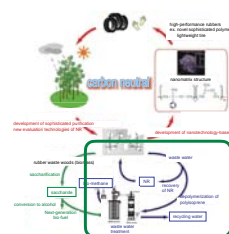
## JST-JICA SATREPS ESCANBER PROJECT



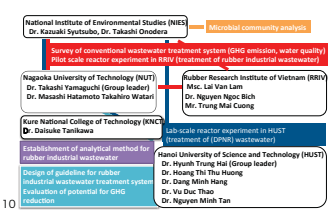
SATREPS is a Japanese government program that promotes international joint research. The program is structured as a collaboration between the Japan Science and Technology Agency (JST) New window, which provides competitive research funds for science and technology projects, and the Japan International Cooperation Agency (JICA) New window, which provides development assistance (ODA). Based on the needs of developing countries, the program aims to address global issues and lead to research outcomes of practical benefit to both local and global society (STREPS HP)

### Establishment of Carbon-Cycle-System with Natural Rubber (ESCANBER) 2011-2016

Establishment of Carbon-Cycle-System with Natural Rubber



Establishment of an appropriate treatment system for natural rubber processing wastewater



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## JST-JICA SATREPS ESCANBER PROJECT



### ① Survey of Current Treatment System



Water sampling



Measuring GHG emission



Water quality analysis

### ② Operate Lab and Pilot scale UASB-DHS system



2015/11/13

Methane recovery : 60%

Settling tank eff.



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## JST-JICA SATREPS ESCANBER PROJECT



Setup laboratory



Construction of bioreactor



Construction of ammonia removal system



Shopping in market

- Must think not only experiment, but also management
- Must learn local rules and culture

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## Double Degree Program



HANOI UNIVERSITY OF  
SCIENCE AND TECHNOLOGY



Chulalongkorn University  
จุฬาลงกรณ์มหาวิทยาลัย  
Pillar of the Kingdom

- Study 2 years in home university and 1 year in partner university
- Take class in home university and several credits can convert to partner university
- Prepare 2 thesis for graduation

Be a young professional engineer who can understand partner country



Takahiro WATARI  
Environmental Eng. (Nagaoka)  
Chemical Eng. (HUST)



Dao Viet Linh  
Bio Eng. (HUST)  
Bio Eng. (Nagaoka)



Sujitra Orutai  
Material and Science (Chula)  
Material Eng. (Nagaoka)

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## Double Degree Program

### Strong Point

- Can get two degree. Only pay tuition fee to home university
- Deeply know about culture, language and research issues in home country and partner country
- Can study in foreign country (different environment)
- Enrich their professional research field by adding new major.
- Strong relationship with partner country

### Negative Point

- Really need two degrees? (But it maybe special career)
- Difficult research environment compared with Japan
- Need to prepare two thesis
- Have to complete all requirement (ex. 2 papers for each degree)
- Live in foreign country is difficult (find accommodation etc.)
- Financial support

Maybe I am first Ph.D in Vietnam who is foreigner

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## JSPS Research Fellowship for Young Scientist

### Eligibility

Enrolled in Doctoral course

### Tenure

DC1 : 3 years, DC2 : 2 years

### Monthly stipend

200,000 yen (have to pay issuance, tuition fee etc.)

### Research grant

Up to 1,500,000 yen/year (actually around 1,000,000 yen/year)

### Research in Foreign country

Half of employed period

If can prepare own fund and research grants, easy to study in foreign country



Try to study in the Netherland

However, also have difficulty because I don't have Ph.D.

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## Why I chose Netherland for studying ?

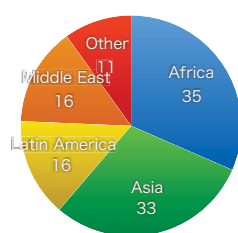
- Netherland is one of the top country that do research in wastewater treatment
- Want to learn in Europe
- Want to learn effectively paper writing
- Expand new research network



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## UNESCO-IHE Research Institute for Water Education

UNESCO-IHE is the largest international graduate water education facility in the world and is based in Delft, the Netherlands. The Institute confers fully accredited MSc degrees, and PhD degrees in collaboration with partner universities.



Students' region of origin academic year 2015/2016



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## UNESCO-IHE Research Institute for Water Education

- Ph.D student must manage 2 -3 master students
- Lunch meeting with Professors
- 8 - 10 technicians help to do experiment



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### What are the differences between Japan, Vietnam and EU?



#### Working time

Japan: 9:00 ~ xxx  
Vietnam: 7:30 ~ 17:00  
EU: 9:00 ~ 17:00



#### Target of research

Japan: Industrial utilization and academic research  
Vietnam: Industrial utilization  
EU: Academic research



#### Equipment

Japan: Good, do by myself  
Vietnam: Not good, do by myself or technician  
EU: Good, do by technician



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### What I recommend to study in foreign country



- Don't afraid language and experiment
- Lets make many friends in the world
- Lets study and understand local culture and language
- Let try to speak a lot

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**Thank you for your attention !**

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