

# SISC Program in Graduate School of Science (GSS)



Anas Santria, Ph.D  
(Department of Chemistry)



# Inorganic Chemistry

## Staff

Naoto ISHIKAWA, Professor

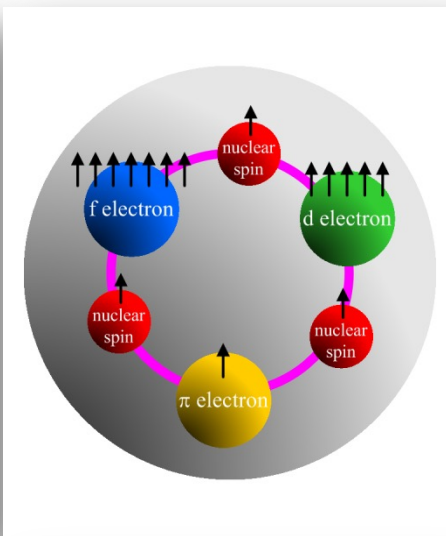
(iskw@chem.sci.osaka-u.ac.jp)

Takamitsu FUKUDA, Assoc. Prof.

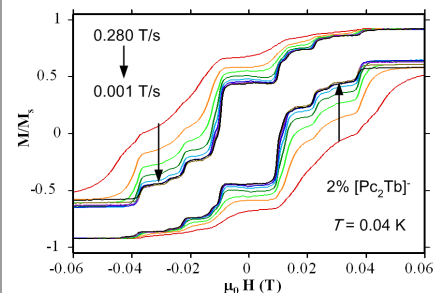
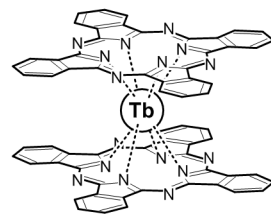
Anas SANTRIA, Assist. Prof.

## Research Interest

- Electronic structure and molecular magnetism of the systems containing unpaired **f**-, **d**-, and  **$\pi$** -electrons
- Time-domain behavior of magnetically highly anisotropic molecular systems such as **single molecule magnets** (SMMs)



## Single molecule magnet







Osaka Univ.

# Department of Chemistry

## Bioinorganic Chemistry

### Staff

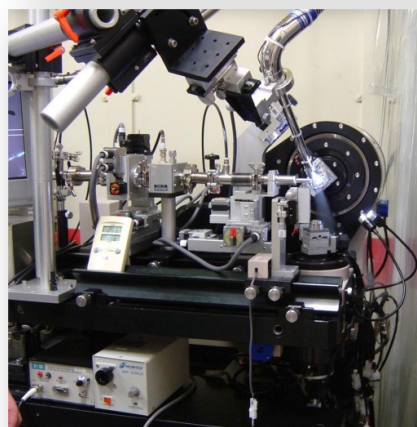
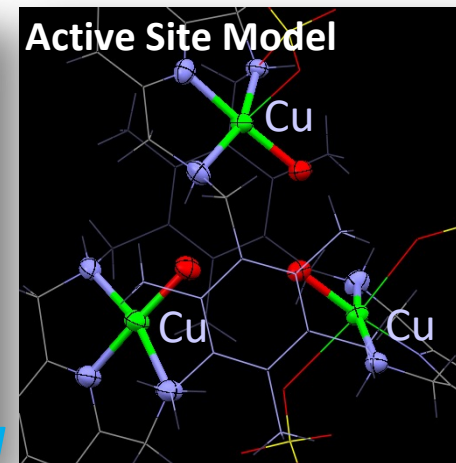
Yasuhiro FUNAHASHI, Professor  
(funahashi@chem.sci.osaka-u.ac.jp)

Masaki NOJIRI, Assoc. Prof.

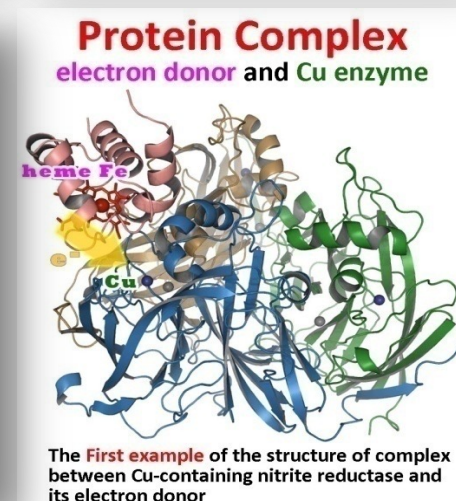
Tsubasa HATANAKA, Assist. Prof.

### Research Interest

- Biomimetic models of **metalloproteins**  
Synthetic studies on metal complexes mimicking the active metal centers of oxidoreductases catalyzing small molecule conversion.
- Structure-function relationships of **metalloproteins**  
Structural studies on the enzymatic reaction and electron transfer of metalloproteins, especially in denitrification bacteria.



High quality X-ray single-crystal structural analysis at SPring 8 (the world's largest third-generation synchrotron radiation facility)

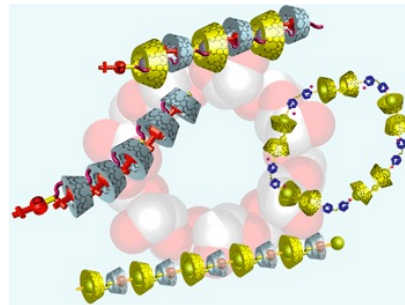
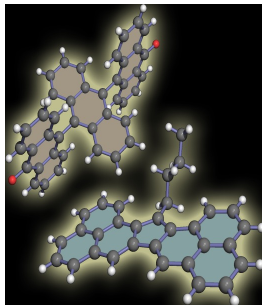
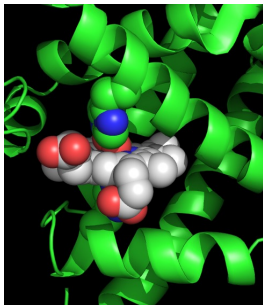
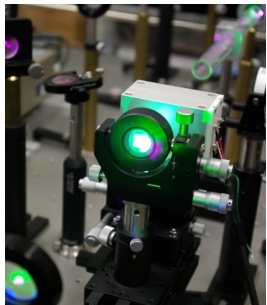


# Concept and Feature of SISC



OSAKA UNIVERSITY  
School of Science  
Graduate School of Science

**SISC** : Special Integrated Science Course. It combines aspects of three majors – **chemistry**, **biology** and **macromolecular science** – and involves research and education in fields where chemistry merges with biology. This program cultivates the capabilities, such as the ability to conduct research using advanced analytical skills, required to become a leader in natural science fields.



# 80 Research Groups in SISC



OSAKA UNIVERSITY  
School of Science  
Graduate School of Science

## Department of Chemistry (28 research groups)

- Inorganic Chemistry
- Physical Chemistry
- Organic Chemistry
- Interdisciplinary Chemistry

## Department of Biological Science (41 research groups)

- Plant Science
- Animal Science
- Neuro Biology
- Molecular Cell Biology
- Signal Transduction Biology
- Functional Biomolecular Biology
- Structural Information Biology
- Chemistry Biology

## Department of Macromolecular Science (11 research groups)

- Macromolecular Synthesis and Reactions
- Macromolecular Structure, Properties, and Functions
- Macromolecular Assemblies
- Informative Polymer Science
- Administration of Safety and Hygiene



# Class List, given in English, for Master Students

---



OSAKA UNIVERSITY  
School of Science  
Graduate School of Science

SISC

Introductory Biology  
Basic Biology I, II  
Biological Science I - VII  
Analytical Separation Chemistry  
Biomolecular Chemistry  
Chemistry on Catalysis  
Inorganic Chemistry  
Natural Product Chemistry  
Organic Biochemistry  
Physical Organic Chemistry  
Quantum Chemistry  
Structural Organic Chemistry  
Thermochemistry  
Advanced Chemical Experiment  
Advanced Macromolecular Science  
Current Topics I – V (Intensive class)  
Interactive Seminar



# Supports & Entertainments



- ✓ Administrative
- ✓ Health and m
- ✓ International



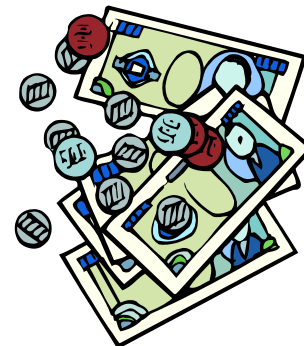
- ✓ **Science Buddy** (organized by Japanese Students)
  - Welcome Party
  - International Food Party
  - New Years Party (Rice cake making and Karuta Game)
  - Japanese Half-Hour
  - Yukata de Party

- ✓ Bus Tour (1 day excursion)



- ✓ **MEXT Scholarship (5 slots a year)**  
147,000 yen/month and 148,000 yen/month  
(for Excellent Master & PhD students)  
Enrollment and Tuition Fees are waived.
- ✓ **Research assistant of Graduate School of Science**  
1,200,000 yen / year (for PhD students)
- ✓ **Scholarship of Graduate School of Science**  
960,000 yen / year (for excellent Master students)
- ✓ **Teaching Assistant of Graduate School of Science**
- ✓ **Private Scholarships: Tokio Marine (180,000 yen/month), NISF (120,000 yen/month), Rotary Yoneyama (100,000-140,000 yen/month), etc.**

Typical living costs in Osaka: 100,000 yen/month







# More information



<https://www.sci.osaka-u.ac.jp/en/graduate-schools/chemistry-grad/>

<https://www.sci.osaka-u.ac.jp/en/graduate-schools/biology-grad/>

<https://www.sci.osaka-u.ac.jp/en/graduate-schools/macromolecular-science/>

OSAKA UNIVERSITY

HOME > Graduate Schools > Department of Chemistry

|                                      |                                       |                                    |                                   |
|--------------------------------------|---------------------------------------|------------------------------------|-----------------------------------|
| Department of Mathematics            | Department of Physics                 | Department of Chemistry            | Department of Biological Sciences |
| Department of Macromolecular Science | Department of Earth and Space Science | Student Manual and Course Schedule |                                   |

## Department of Chemistry

We all live on the earth, and we observe many nature phenomena. Most of the phenomena are caused by chemical functions. For example, complicated biological activity is attributable to a huge number of chemical interactions and chemical reactions. Chemistry is a science dealing with the structure, synthesis, properties, and interactions of substances, particularly at the molecular level.

We are surrounded by artificial chemical products, e.g., food, clothing, housing, drugs, traffic and communication tools, and so on, and we are using them everyday. Recently, new materials such as those supporting computer memory storage and superconductivity have been playing an essential role in the recent progress of human culture and technology. The development of these new materials is based on chemistry. On the other hand, some chemicals tend to cause serious environmental problems, whose solution will depend on chemistry research and education in future.

Chemistry and its related sciences are much closer to us than one imagines, and are extensively contributing to the growth of science and human society. Chemists have an essential role in the growth and their contribution increases.

The School of Science was established in 1931, and the Department of Chemistry was also established with five laboratories at the same time. Now, the Department of Chemistry belongs to Graduate School of Science, and comprises the following four divisions: inorganic, physical, organic, and interdisciplinary chemistries. In addition, the department has cooperative with many research groups of other research institutes. There are a variety of high level researches in the department, covering all fields of chemistry, and the members in the department study and work internationally.

- Department of Chemistry(external link)
- Brochure(pdf)

Chemistry



Biological sciences



Macromolecular science



Brochure (pdf)

OR, just do an Internet search

## Selection Procedure

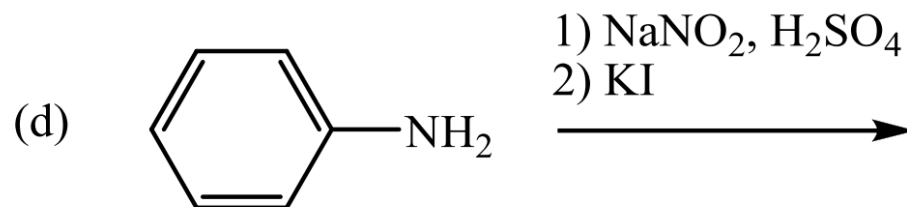
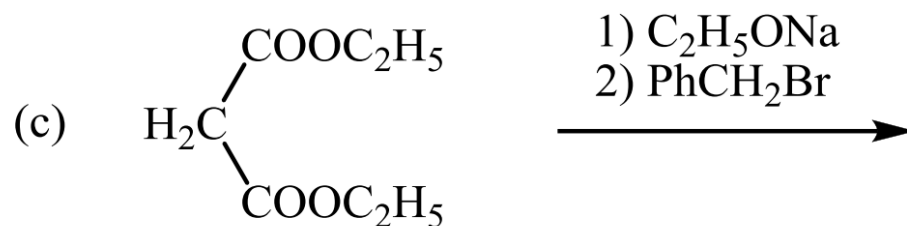
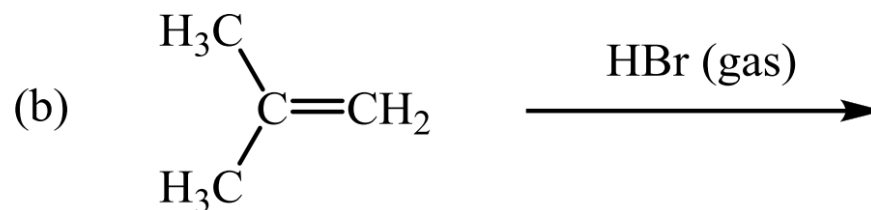
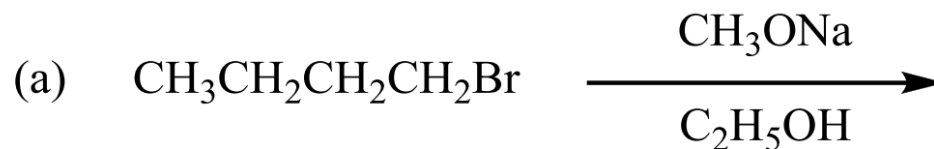
### Master Course

- ✓ 1st step  
Screening application documents
- ✓ 2nd step  
Paper-based tests in physiology
- ✓ 3rd step  
Interview by professors

### PhD Course

- ✓ 1st step  
Screening application documents
- ✓ 2nd step  
Presentation of master thesis

(3) Predict products in the following reactions.



Application Period: 14 – 18 November 2022

Many  
Thanks!

