Because of our outstanding Chemistry and Materials Science research programs!

We are doing cutting edge research in Chemistry and Materials Science. In the Quacquarelli Symonds (QS) World University Rankings, which are an internationally recognized set of science rankings, for 2016, Tohoku University Chemistry and Materials Science were listed near the top 30.

Chemistry	World 34th	(National 5th)
Materials Science	World 22nd	(National 2nd)

QS World University Rankings, 2016 https://www.topuniversities.com/

TOHOKU UNIVERSITY

Advanced Molecular Chemistry (AMC) Course

Address

Tohoku University, Kawauchi 41, Aoba-ku, Sendai 980-8576, Japan

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Telephone +81-22-795-3242

Fax +81-22-795-7826

Website

[AMC Course]
web.tohoku.ac.jp/amc

[FGL program]
www.fgl.tohoku.ac.jp

[Tohoku University]
www.tohoku.ac.jp

Examples of Scientific Contributions of our Faculty Members

Charge transfer to ground state ions produces free electrons

Nat. Commun., 8, 14277 (2017)

In situ reversible ionic control for nonvolatile magnetic phases in a donor/acceptor metal-organic framework

Adv. Funct. Mater., 27, 1604990 (2017)

Redox-assisted regulation of Ca^{2+} homeostasis in the endoplasmic reticulum by ERdj5

Proc. Natl. Acad. Sci. USA, 113, 6055 (2016)

Real-time intravital imaging of pH variation associated with osteoclast activity

Nat. Chem. Biol., 12, 579 (2016)

Crosslinking reactions of 4-amino-6-oxo-2-vinylpyrimidine with guanine derivatives and structural analysis of the adducts

Nucl. Acids Res. 43, 7717 (2015)

Visualizing optoelectronic processes at the nanoscale

ACS Nano, 9, 10540 (2015)

Future Global Leadership (FGL program)

Tohoku University Faculty of Science

TOHOKU UNIVERSITY

Why choose Tohoku University?

International Program in Chemistry

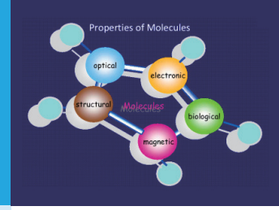
Advanced Molecular Chemistry Course

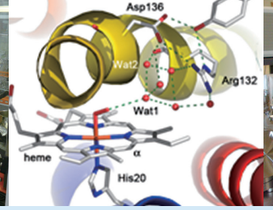
■Undergraduate Course

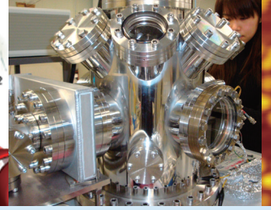
- ◎Lectures in English
- ◎Cutting-Edge Chemistry and Materials Science
- ◎Molecular Approach to New Materials
- ◎Support for International Students

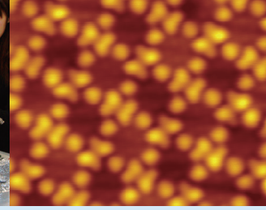
web.tohoku.ac.jp/amc

Advanced Molecular Chemistry course offers a high quality chemical education and research environment









Outline of the Advanced Molecular Chemistry (AMC) Course

The AMC course is a fundamental chemistry curriculum with an emphasis on materials science. Students will be educated and do research in organic, inorganic, physical, polymer, materials chemistries and biochemistry. The AMC course is designed to train future leaders in the field of materials science, which is playing an increasing role in the development of new technologies.
In particular, the AMC course is designed to help students develop the skills needed for identifying and solving research problems within science and technology. Lectures and laboratory classes are taught by faculty members in the Department of Chemistry and affiliated materials research institutes (IMR and IMRAM). The international character of the AMC course and its comprehensive curriculum will prepare students for global leadership roles in both academia and industry.

Curriculum

General Science & Japanese Language	Introductory Chemistry	Advanced Chemistry	Research
Fundamental Education • Chemistry • Mathematics • Computer Science • Physics • Biology • Sport	**Advanced Education** • Organic Chemistry • Physical Chemistry • Inorganic Chemistry • Quantum Chemistry	• Molecular Spectroscopy • Instrumental Analysis • Materials Properties etc.	Research Project Graduation Thesis
1st year	2nd year	3rd year	4th year

*Upon graduation from the AMC course you can enroll in our International Graduate Program for Advanced Science (IGPAS), Faculty of Science, to earn MS and Ph.D. degrees.

Career Perspectives

Studying chemistry and materials science prepares students for a variety of careers in industry, government, and academia. Chemists are employed by petrochemical firms, pharmaceutical companies, biotechnology firms, consumer chemical firms, environmental control laboratories, automotive companies and many other related firms.Students who earn M.S. and Ph.D. degrees attain higher level positions and salaries. Examples of career paths include but are not limited to the following:

- Pharmaceutical chemist
- Polymer chemist
- Biochemist
- Materials analyst
- Chemical sales and marketing representative
- Laboratory technician
- Dye chemist
- Environmental chemist
- Researcher in industrial laboratories
- University Professor

Advanced Chemistry Topics

In addition to basic chemistry courses, advanced chemistry courses in a variety of fields, such as nucleic acid chemistry, gene therapy, bio-inspired organic synthesis, photochemistry, computational chemistry, surface science, and chemistry for optoelectronic materials, are available.

Techniques You Can Learn

- X-ray crystallography
- Fluorescence spectroscopy
- Scanning probe and tunneling microscopies
- Nuclear magnetic resonance spectroscopy
- Infrared and Raman spectroscopy
- Electron paramagnetic resonance spectroscopy
- Auger electron spectroscopy
- X-ray photoelectron spectroscopy
- Time-resolved techniques
- Circular dichroism spectroscopy
- High-performance liquid chromatography

Support Offered by Tohoku University

- Financial Support
- Japanese Language
- Housing Support
- Tutor Support
- Career Support
- Counseling

Admission

The admission process is divided into two stages. In the first stage, applicants are evaluated on the following bases: results of Secondary Education examinations or the Examination for Japanese Universities (EJU-test), an official high school transcript, and results from an English proficiency exam, such as TOEFL and IELTS, in the case of non-native English speakers. Applicants successful in the first stage will undergo an oral exam in chemistry, physics, and mathematics at the high school level and an interview. For more details on admission, application and scholarships, please refer to the FGL Program website.

Scholarships

International students of outstanding academic ability may be eligible for the "President Fellowship for Undergraduates". The scholarship covers the entrance and tuition fees for four years. In addition, students will be allowed to live in University House Sanjo for their first two years. Furthermore, students of sufficient academic ability may be eligible for a living expenses stipend for one year.

Eligibility

- 18 years of age by September 30 of the year of entry
- 12 years of school education completed
- English proficiency: TOEFL, IELTS, etc.

Sendai City

Sendai is located about 300 km north of Tokyo on the Pacific coast of Honshu Island with a population of over one million people. In Sendai, students can experience the beauty of the four seasons as well as visit nearby beaches, ski resorts, and onsens (hot springs). Sendai has mild winters with little snow and warm summers. Throughout the year, in the Sendai area, there are a wide variety of cultural and sports events, which provide opportunities to experience various aspects of Japanese culture.


A view from Aobayama campus


Aoba Festival


Tanabata Festival


Illumination


Hot springs

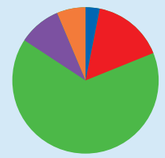

Ice Monsters of Zao mountains

Housing

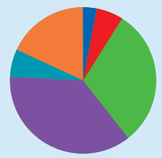
Sendai offers affordable and spacious housing in comparison to other Japanese metropolitan areas. There are many apartments in the range of 20,000-30,000 yen/month. With a very low crime rate and reasonable living expenses, Sendai is a comfortable place for young students to live.

Living Expenses/Month

Housing cost



Food cost



Average Monthly Budget

Campus Life

There are more than 60 athletic and cultural clubs offering a broad range of activities at Tohoku University, through which students have a chance to interact with Japanese students and experience traditional and modern Japanese culture. Currently, 1944 international students are engaged in study and research at Tohoku University. The campus is a vibrant place for international exchange.

Your generation needs leaders with the chemical know-how to maintain and advance their lives.