TIGP
ACADEMIA SINICA
Taiwan International Graduate Program

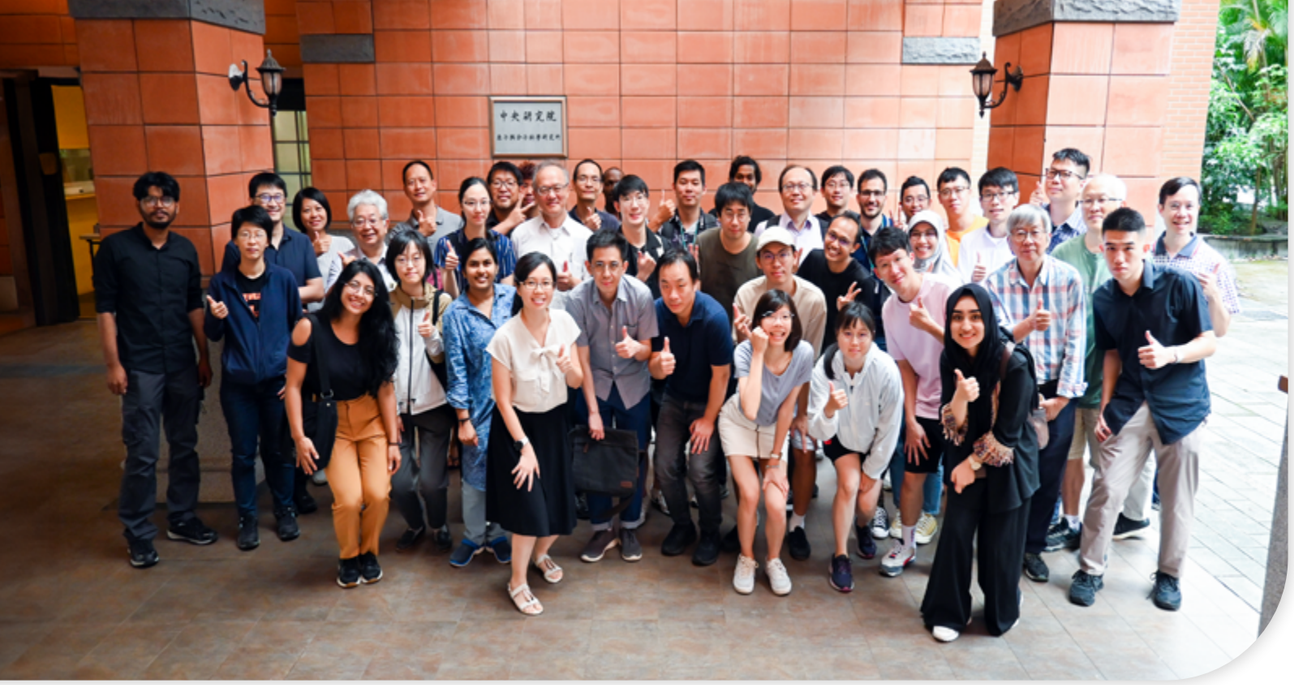
Molecular Science and Technology (MST) Program

Introduction

The Molecular Science and Technology (MST) Program is an excellent research-intensive, interdisciplinary PhD program sponsored by the Institute of Atomic and Molecular Science (IAMS) of Academia Sinica in cooperation with three major research universities in Taiwan: National Taiwan University (NTU), National Tsing-Hua University (NTHU) and National Central University (NCU) To know more about IAMS, please visit the following YouTube link for the video introduction to our Institute: https://www.youtube.com/watch?v=izNq1eGYA5A. The program has 68 active faculty members and researchers coming from the Institute of Atomic and Molecular Science (IAMS) and the Institute of Chemistry (IOC) of Academia Sinica, the Molecular Science and Technology program of NTU, the Department of Chemistry of NTHU, and the Department of Physics of NCU with broad expertise covering the following research fields:chemical dynamics and molecular spectroscopy, advanced and functional materials, nanomaterials and nanodevices, biomolecular structures and dynamics, ultrafast laser and high-field technology, light-matter interactions and optical controls, and theoretical/computational chemistry.

The MST program is designed to develop professional skills in independent research, scientific communications, and team work in a competitive environment. Central to the program is the research thesis, which allows students to undertake a challenging and cutting-edge research project under the direct supervision of our faculty members. To prepare students for a successful career in frontier research, the program provides not only advanced graduate courses, seminars and forums, but also laboratory rotations for in-depth training of various special skills. Faculty members will take turns to serve as mentors for first-year students until they have formally joined a research group to conduct their thesis study, which should take place within the first two semesters after their admission into this graduate program. All the well-designed courses have attracted and encouraged young researchers to learn both fundamental state-of-the-art knowledge and the technology of modern sciences. Since most courses are shared with the Nano Science and Technology program, students have the opportunity to develop and broaden their understanding of other disciplines and research areas.

Founded in 2002, all students graduated from the MST program so far have succeeded in establishing their professional careers in research institutes, universities and/or industries related to microelectronics/photonic device fabrication, nano-materials, biotechnology, and advanced instrumentation. In order to create an optimal environment to support excellence in academics and research for the students with different backgrounds, the program committee and faculty have continuously improved the program courses for a better integration with affiliated universities. The goals of the MST program are to prepare the students to assume future leadership in academia and industry, and to contribute their knowledge and efforts to fundamental science and/or industrial development of Taiwan and the world.



Academic System

The MST program emphasizes establishment of problemsolving ability and developing individual's self-reliance and self-confidence to conduct independent research work. In this program, faculty members will take turns to serve as mentors for first-year students until they have formally joined a research group to conduct their thesis study, which should take place within the first two semesters after their admission into this graduate program. As a rule, students complete a program of required courses before embarking on the research training. The MST program adopts a team-teaching system, where each faculty member teaches the subject according to his or her expertise. Courses offered include required and elective courses. All courses will be delivered in English.

Requirements for Ph.D. Degree

(1) Student Status and Degree Conferral Policy

Based on the Regulations of the Ministry of Education in Taiwan, our degree candidates must be officially registered students in one of the following university program or departments: the International Graduate Program of Molecular Science and Technology, National Taiwan University, the Chemistry Department of National Tsing Hua University (NTHU), or the Physics Department of National Central University (NCU). Only master graduates are eligible to apply the NTU MST program. For NTHU and NCU, an applicant can either be a B.S. graduate or a master graduate. Students who enter the NTHU or NCU MST program with a B.S. degree should enroll first as a pre-Ph.D. student till they are approved by a committee to enroll in the Ph.D. program. For all students admitted to the TIGP MST program, upon successful completion of the program, each student will be conferred a Ph.D. degree by the partner university and a certificate jointly signed by the President of Academia Sinica and the Director of TIGP.

(2) Course Works

Students are advised to complete the course requirement during the first one-and-a-half years. It is the responsibility of the thesis advisor to assist each student in projecting a program of study that will best satisfy his or her personal needs as well as fulfilling the graduate requirements. Depending on the background of the incoming student, a prescribed program of courses will be required as part of the requirements toward the degree conferral. The details of this prescribed course program will be determined shortly upon arrival after consultation with the Graduate Study Committee of the graduate program.

(3) Selection of Thesis Advisor

Incoming students are required to select a thesis advisor by the end of the first year of their graduate study (refer to **Fellowship and Stipends** below). They should be exposed to the research work of a number of laboratories before signing up for a specific faculty member. The process involves attending a series of seminars delivered by faculty members on their respective research and a series of laboratory rotations, each lasting for four weeks, during the first year of students' graduate study.

(4) Qualifying Examination

A student pursuing for the Ph.D. candidacy must pass the qualifying examinations in accordance with the regulations of the University each student enrolled (Please refer to the "Student Status and Degree Conferral Policy" above), typically before the end of his/her second or third year in residence.

(5) Advancement to Ph.D. Candidacy

Each student must strive to qualify candidacy for the Ph.D. degree typically by the end of his/her second year of graduate study. The criteria for qualifying candidacy include: (i) submission of an official report describing the candidate's past accomplishments, (ii) certified completion of a series of written examinations on selected subjects required by the designated department/university, and/or (iii) certified completion of a preliminary oral defense on proposed research proposal.

(6) Thesis Defense

Prior to the final submission of a Ph.D. thesis, the candidate must fulfill all courses and earned credits required by the designated department/university at which he/she had registered. Upon completing these requirements, the Ph.D. candidate is then eligible to defend his/her graduate research under a written recommendation by his/her thesis supervisor(s). The thesis defense will take the form of a public seminar given by the Ph.D. candidate followed by an oral examination in front of a thesis examination committee, which shall consist of at least five faculty members familiar with the candidate's area of research.

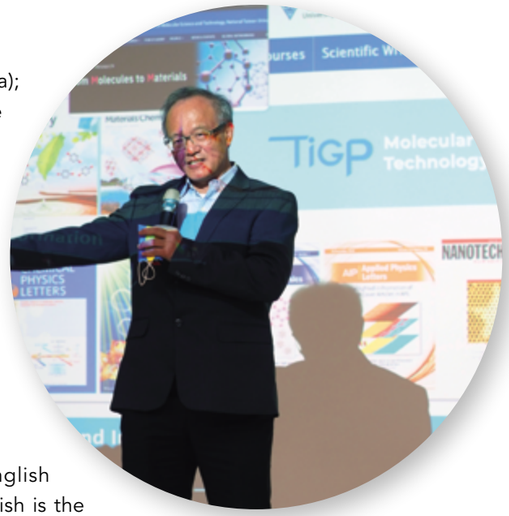
Admission Requirements

TIGP offers admissions for the fall semester only. Detailed admission requirements and application materials are available on the website of TIGP (http://tigp.sinica.edu.tw/). The application deadline for MST Program is February 1 annually.

Either international students or domestic students from within Taiwan with a B.S. and/or a M.S. degree from an accredited institution will be considered for admission to NTHU and NCU. For the NTU MST program, an applicant must be a M.S. degree graduate from an accredited institution. The applicants qualification for admission will be based mainly, but not exclusively, on the following certified/notarized documents provided by the applicant:

(1) Undergraduate and graduate (if applicable) academic records or transcripts.
(2) Graduate Record Examination (GRE) scores: Subject Test is optional (but highly recommended).
(3) English Proficiency: Applicants whose first or native language is not English are required to submit one of following English proficiency test report (the listed scores are strongly recommended):
 (i) **TOEFL**: revised TOEFL Paper-Delivered Test (or 79-80 on the Internet-based TOEFL (TOEFL-iBT)) or higher

(Our institution CODE & NAME are: 7142 Academia Sinica); TOEFL Institutional Testing Program (TOEFL-ITP) is not the option of English proficiency;
(ii) **GEPT**: applicants in Taiwan may take the General English Proficiency Test (GEPT) administered by the Language Training and Testing Center. Applicants are required to submit their High-intermediate level certificate when applying for admission;
(iii) **IELTS** (International English Language Test System): score 5.5 or higher is required.
(iv) **TOEIC**: a minimum score of 785 (Listening & Reading) is required.



Applicants who have completed a degree program in an English speaking country, or who graduated from university where English is the primary language of instruction, maybe be exempted from the test of English proficiency with an official certification issued by the Office of Registrar.

(4) Three letters of recommendation commenting on the applicant's personal character, and qualifications for independent study, including intellectual ability, research potential, and scientific motivation.
(5) A statement of purpose or plan for graduate study. The above submitted application materials will not be returned to applicants under any circumstances. The complete application materials must reach TIGP before February 1 annually. Application may be submitted through the official on-line application system or regular post mails. To prevent delays or undelivered post mails by any causes, on-line application is preferred and strongly recommended.
On-line application system
https://tigp.apps.sinica.edu.tw/index.php

Admissions Office

Taiwan International Graduate Program (TIGP) Academia Sinica
128 Academia Road, Sec. 2, Nankang, Taipei 11529, Taiwan, Republic of China

Cost of Study

Payment for tuition fees (basic fee + credits fee, about NT$54,000/US$1,687 per semester) should be made by international students on Student Registration Day. Partial subsidies for the tuition fees will later be provided (by Academia Sinica) to all international students.

Fellowship and Stipends

TIGP will provide full fellowships to all graduate students for the first year. The current initial stipend is NT$40,000 (about US$1,212) per month. Extension of the fellowship is reviewed annually, depending on the progress of the students after the first year. The recommendation letter from the thesis advisor is critical in this decision. For those MST students in good academic standing, the MST program may provide the fellowships up to three years. It is expected that the thesis advisor will provide the meritbased financial support for the rest of the study period. Effective from Jan. 1, 2020, for TIGP students who have passed qualified exam and showing outstanding progress on their research work toward graduation, their financial support may be increased up to NT$60,000.

Medical Insurance

(For international students only.) Six months after the student receives the Alien Residence Certificate (ARC), the student will be qualified for Taiwan's National Health Insurance Program (NHI). The students are expected to pay the same premium as all the Taiwan citizens and will be entitled to the same medical coverage.

Living and Housing Costs

Options include on-campus housing and off-campus housing. A dormitory for TIGP graduate students near the Academia Sinica campus is available. This on-campus student housing facilities will be available to the TIGP graduate students at reasonable costs. Off-campus private housing is generally more expensive. Rents for off-campus apartments range from NT$5,000-15,000 per month. Meals are also available at modest cost at the Activity Center Cafeteria/Dining Hall, the Café, located in the Academia Sinica campus and/or assorted restaurants nearby to the IAMS.

Correspondences and information

For general information concerning TIGP, please contact:

Administrative Assistant:

Ms. Huan-Yi Shen
E-mail: tigp@gate.sinica.edu.tw
Tel: +886-2-2789-8050; Fax: +886-2-2785-8944

Mailing Address:

Taiwan International Graduate Program (TIGP), Academia Sinica
128 Academia Road, Sec. 2, Nankang, Taipei 11529, Taiwan, Republic of China

For information concerning MST program, please contact:

Coordinator:

Dr. Tsyr-Yan Yu
E-mail: tyyu@pub.iams.sinica.edu.tw
Tel: +886-2-2366-8210; Fax: +886-2-2362-0200

Admission Committee Chair:

Dr. Ya-Ping Hsieh
E-mail: yphsieh@gate.sinica.edu.tw
Tel: +886-2-2366-8205; Fax: +886-2-2362-0200

Curriculum Committee Chair:

Dr. Hsiang-Hua Jen
E-mail: sappyjen@gate.sinica.edu.tw
Tel: +886-2-2366-8261; Fax: +886-2-2362-0200

Secretary of MST Program:

Ms. Bonnie Lin
E-mail: tigpmst@pub.iams.sinica.edu.tw
Tel: +886-2-2362-4928; Fax: +886-2-2362-0200

Mailing Address:

Rm 317, No. 1, Roosevelt Rd., Sec. 4, Taipei,
106319, Taiwan (IAMS, Academia Sinica)

P.O. Box 23-166 Taipei National Taiwan University,
Taipei City, 106923, Taiwan (IAMS, Academia Sinica)

Website Information:

Taiwan International Graduate Program (TIGP), Academia Sinica:
http://tigp.sinica.edu.tw/

Molecular Science and Technology Program (MST), Academia Sinica:
http://tigp.iams.sinica.edu.tw/

This Program is sponsored by Institute of Atomic and Molecular Sciences (IAMS), **Academia Sinica**
In cooperation with Institute of Chemistry, **Academia Sinica** &
International Graduate Program of Molecular Science and Technology, **National Taiwan University** &
Department of Chemistry, **National Tsing Hua University** &
Department of Physics, **National Central University.**