

International Graduate Program in Energy and Optoelectronic Materials College of Engineering, Taipei Tech

Introduction




Many environmental friendly renewable energy materials and technologies have been developed or are developing to replace fossil fuel. It is a consequential trend to develop novel materials for more efficient renewable energy in the future. Except the energy materials, optoelectronic device also plays an important role in our daily life. The materials are the most basic issue for the development of energy and opto-electrical application. National Taipei University of Technology (NTUT) opens a special program called "Energy and Optoelectronic Materials Program (EOMP)" to train students for above purpose.







EOMP is a special program for students who came from of other countries to Taiwan for the Master's degree or Ph.D. study at College of Engineering in Taipei Tech. EOMP opens for foreign students who are interested in the pioneer energy and optoelectronic related materials. EOMP integrates the resources and professors from different institutes in College of Engineering, Taipei Tech, including Institute of Chemical Engineering, Institute of Bio-Technology, Institute of Organic and Polymeric Materials, and Institute of Material Resources Engineering.






Professors involved in this program are all interested in the energy optoelectronic materials and devices such as solar cells, dye-sensitized solar cell (DSSCs), biofuels, and fuel cells, memory device, light emitting diodes, and liquid crystal display etc. Students will learn and study the basic knowledge and technology related to energy and optoelectronics related materials and devices from EOMP. Students who came from everywhere in the world are welcome to apply to EOMP to learn and study high technique and useful knowledge in energy and opto-electronic materials in Taipei Tech as well as to enjoy the life and culture of Taiwan.

Faculty

The background and research interests of professors involved in EOMP are listed below.

Professor	Academic Background	Research Interests
 Shen-Ming Chen	Ph.D., Department of Chemistry, National Taiwan University	Instrumental Analysis Electrochemistry Catalytic Chemistry Chemical sensors and Biosensors
 Sea-Fue Wang	Ph.D., Department of Ceramics Science, Pennsylvania State University, USA	Electrical, Magnetic, and Optical Materials Preparation and Characterization of Thin Films Synthesis of Nanomaterials Ceramic Processing
 Albert Shea-Jue Wang	Ph.D., Department of Electro-Physics, National Chiao-Tung University, Taiwan	Fabrications and applications of organic semiconductor devices, Fabrications and integration of deep submicron semiconductor devices, Fabrications and applications of novel electronic materials, Fabrications and applications of high temperature superconductors
 Syang-Peng Rwei	Ph.D., Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, USA	Polymer Property, Polymer Processing, Polymer Rheology
 Yih-Tyan Liao	Ph.D., Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, USA	Nanofiber and Nanocomposite, Cholesteric Liquid Crystal, LCD Surface Alignment Film, Living Free Radical Polymerization, Optoelectronic Material

 <p>Shu-Mei Chang</p>	<p>Ph.D., Department of Chemistry, University of Cambridge, UK</p>	<p>Light-emitting Polymers, Opto-electronic Materials, Organic Chemistry, Polymer Chemistry</p>
 <p>Chaochin Su</p>	<p>Ph.D., Department of Chemistry, Columbia University, USA</p>	<p>Time-of-flight(TOF), Modulated Molecular Beam Scattering(MMBS), Mass Spectroscopy, AES, LEED and Ultra-high Vacuum(UHV) Techniques</p>
 <p>Wan-Chin Yu</p>	<p>Ph.D., Department of Chemical Engineering, University of Wisconsin-Madison, USA</p>	<p>Biomass conversion, Cell culture, Crystal growth</p>
 <p>Kuo-Yuan Hwa</p>	<p>Ph.D., School of Medicine, Biochemistry, Cellular and Molecular Biology, Johns Hopkins University, USA</p>	<p>Interactions between polysaccharides and lectins Biological properties of synthetic and herbal glycoconjugates New application of synthetic and herbal glycoconjugates in biotechnology</p>
 <p>Hsin-Ta Wang</p>	<p>Ph.D., Department of Polymer Science, University of Akron, USA</p>	<p>Polymer Science, Biomaterials Analytical Chemistry</p>
 <p>Yao-Yi Cheng</p>	<p>Ph.D., Department of Materials Science and Engineering, M.I.T., USA</p>	<p>Polymer Materials, Polymer Physics, Dielectric Materials</p>

 <p>Norman Lu</p>	<p>Ph.D., Department of Chemistry, University of Bristol, UK</p>	<p>Solar cell, Green technology, Fluorine Chemistry, Synthetic Chemistry, Organometallics (e.g. Liquid Crystal Materials, Lithium Battery Electrolytes)</p>
 <p>Thomas C.-K. Yang</p>	<p>Ph.D., Department of Chemical Engineering, University of Missouri, USA</p>	<p>Development and application of infrared materials, Semiconductor packaging, Bio-medical materials, Nano material Manufacture, High performance computing, Thermal and chromatic analysis</p>
 <p>Sheng-Tung Huang</p>	<p>Ph.D., Department of Bio-Organic Chemistry, Brandeis University-Waltham, USA</p>	<p>New synthetic methodology, Innovated drugs design, Development of biosensor</p>
 <p>Yung-Chin Yang</p>	<p>Ph.D., Department of materials science and engineering, National Cheng Kung University, Taiwan</p>	<p>Anode fabrication of SOFC by plasma spraying, Dental porcelain and metal research, Synthesis of meso-porous bioglass, Anti-bacterial properties of Nano-powders in biomaterials</p>
 <p>Kun-Li Wang</p>	<p>Ph.D., Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Japan</p>	<p>Design and Synthesis of Novel Organic and Polymer Materials Toward opto-electrical applications</p>

Lectures

The knowledge related to energy, optical, electrical materials and opto-electronic transformation materials will be introduced in the lectures for the EOMP. All the lectures in EOMP will be commentated in English. The lectures opened for EOMP are as following.

- Surface Science and Technology
- Opto-electronic Materials
- Biorenewal Energy and Materials
- Advanced Inorganic Chemistry (related to DSSC researches)
- Semiconductor Process Integration
- Characterization Methods for Semiconductor and Optoelectronic Materials
- Optoelectronic Polymer Materials
- Advanced Organic Chemistry
- Organic Synthesis
- Advanced Instrumental Analysis
- Application of Thin Film Technology to Fuel Cells
- Advanced Science and Materials
- Liquid Crystal Science and Technology
- Electrical Magnetic and Optical Properties of Materials
- Physical Chemistry of Macromolecules
- Polymer Synthesis
- New Energy Materials
- Polymer Processing
- Plasma Engineering
- Polysaccharide for Biomass Energy
- Biofuel Cells
- Photoelectrochemistry and Solar Cells

The College and the University

The College of Engineering offers eight graduate institutes--the graduate institutes of Civil & Disaster Prevention Engineering, Materials Science & Engineering, Chemical Engineering, Organic & Polymeric Materials, Environmental Engineering & Management, Biotechnology, Engineering Technology and Mineral Resources Engineering. The total numbers of full-time faculty is 102. The eight institutes within the college have full-time and

part-time master programs and doctoral program with a total of 798 students, 180 doctoral students were enrolled in academic year of 2015.

Located in downtown Taipei, NTUT is one of the most prestigious universities in Taiwan. NTUT was founded in 1912. With outstanding reputation in professional education, NTUT is consistently ranked in the top ten by the 1000 largest companies in Taiwan.

Tuition and Fees

The following figures represent the approximate tuition costs for one semester and do not include insurance and other miscellaneous fees. Actual amount to be paid by an individual student will vary according to the choice of degree program, housing, and other options. All figures shown below are in New Taiwan Dollars (NTD).

College of Engineering

Degree Program	學士班 (B)	碩士班 (M)	博士班 (D)
工程學院能源與光電材料外國學生專班 International Graduate Program in Energy and Optoelectronic Materials (EOMP)		61,352	63,827

Scholarships

There are various scholarships available for degree seeking students at Taipei Tech. These scholarships are available for international students who do not hold citizenship of Taiwan, Hong Kong, Macao, or China.

Taiwan Scholarship

Taiwan Scholarship is provided by the Taiwan Government. The purpose is to attract outstanding students to pursue academic degrees in Taiwan and to deepen their understanding of Taiwan's academic environment and culture, thereby enhancing exchanges and building friendships between Taiwan and

their home nations. Taiwan Scholarship is, in principle, granted to students from countries that have diplomatic relations with Taiwan. Special consideration, however, may also be given to students from other countries.

* If an enrolled student fails to complete the tuition payment on time, Taipei Tech has the authority to deduct his/her scholarship to pay for the tuition fee.

For more information regarding scholarship details, please check the Taiwan Scholarship website below :

<http://tafs.mofa.gov.tw/>

Taipei Tech Scholarships

Taipei Tech Scholarships include "Foreign Student Scholarship" and "International Graduate Student Scholarship." The following offers a brief introduction to the two types of scholarships.

Foreign Student Scholarship

Eligibility

- All current Taipei Tech international students who have completed at least one semester at Taipei Tech and fulfilled one of the criteria listed below are eligible to apply.
- Recipients of scholarship or subsidy offered by any government, research or educational institution will not be considered.

Award Period

The scholarship is a one-time annual payment. Applicants may apply each year.

Application Period

Application period will be posted on the [OIA](http://www.woia-en.web.ntut.edu.tw/) (<http://www.woia-en.web.ntut.edu.tw/>) website around February.

Evaluation Criteria

- Undergraduate students should achieve an academic grade of 70 or above and a conduct grade of 80 or above, and submit one recommendation letter from their advisors.

- Graduate students should achieve an academic grade of 80 or above and a conduct grade of 80 or above, and submit one recommendation letter from their advisors.
- Graduate students may submit their thesis/dissertation proposals (minimum 5,000 words excluding references) plus one recommendation letter from their advisors.
- Students who have participated and demonstrated leadership in student activities may provide a brief report and should achieve the required academic grade (undergraduate: 70 or above; graduate: 75 or above).
- Students with proof of financial difficulties and have never been penalized by the university for their conduct.

Scholarship Award

Annual stipend: Amount varies depending on the annual school budget.

[International Graduate Student Scholarship](#)

Eligibility

- New and registered current international graduate students are eligible to apply.
- Recipients of any other scholarship or subsidy offered by the Taiwan government, research or educational institution in Taiwan will not be considered.

Award Period

The scholarship is for one academic year only; applicants need to reapply each year.

Application Period

July 1~31 for current registered international graduate students.

Evaluation Criteria

- Prospective international graduate students may check the appropriate box on the Online Application System to apply.
- Current registered international graduate students should achieve an academic grade of 80 or above in the previous school year and provide a copy of transcript and one recommendation letter from their advisors.

Scholarship Award

Available to master's and doctoral students :

- Tuition waiver for one academic year

Available to selective doctoral students :

- Tuition waiver for one academic year with monthly stipend (stipend amount varies depending on university budget)

NOTE: International Graduate Student Scholarship Application Form and Foreign Student Scholarship Application Form DOWNLOAD on website (<http://www.oia-en.ntut.edu.tw/files/11-1106-8549.php>)

If you have any questions, please e-mail the OIA at sofiahuang@mail.ntut.edu.tw

Qualifications

1. Applicants for the Ph.D. degree program must have a master's degree or its equivalent in Energy, Electro-Optical Engineering, Chemical Engineering, Applied Chemistry, Biochemistry, Biotechnology, Materials, Environmental Engineering, or other related fields from an accredited institution by August 2016.
2. Applicants for the M.S. degree program must have a bachelor's degree or its equivalent in Energy, Electro-Optical Engineering, Chemical Engineering, Applied Chemistry, Biochemistry, Biotechnology, Materials, Environmental Engineering, or other related fields from an accredited institution by August 2016.
3. Only application documents are required. No examine or interview is needed.

Application Instructions

- Complete the online application form. All applications must be completed online.
- Online Application System webpage address : <http://aps2.ntut.edu.tw/InterStuApply/Init>
- Upload and submit the required documents according to the checklist via post to :

National Taipei University of Technology
Office of International Affairs, International Student Section
No. 1, Sec.3 Zhongxiao E. Rd., Taipei 10608 Taiwan

- You will receive confirmation and follow-up emails with further instructions and information based on the receipt date of your application.
- Please note that failure to provide all the required documents will cause significant delays in your admission process.

IMPORTANT : Please log in to the Online Application System (June 1 for Fall Intake applicants and December 20 for Spring Intake applicants) to check the admission results.

For details and download of application forms, please refer to the website at:

<http://wwwoia-en.ntut.edu.tw/files/11-1106-8503.php>

MASTER'S DEGREE REQUIREMENTS

1. Thirty four (34) credit hours of graduate level courses must be completed.
 - (1) Required courses (10 credit hours): Master's Thesis (6 credit hours) and Graduate Seminars (4 credit hours).
 - (2) Twenty four (24) credit hours in the EOMP-approved technical course list must be earned.
2. Upon approval by the thesis advisor and program committee, a maximum of six (6) credit hours of courses taken from the other NTUT's graduate programs may be credited toward the MS degree.
3. Successful defense of M.S. thesis.

DOCTORAL DEGREE REQUIREMENTS

1. Thirty seven (37) credit hours of graduate level courses must be completed.
 - (1) Required courses (16 credit hours): Doctoral Dissertation (12 credit hours) and Graduate Seminars (4 credit hours).
 - (2) Twenty one (21) credit hours in the EOMP-approved technical course list must be earned.
2. Upon approval by the thesis advisor and program committee, a maximum of six (6) credit hours of courses taken from the other NTUT's graduate programs may be credited toward the Ph.D. degree.

3. Successful completion of the Ph.D. qualifying examination.
4. Successful defense of Ph.D. thesis.

Contacting Us

Taipei Tech International Student Office

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NTUT College of Engineering

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