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Admission Number

Doctor of Philosophy Programme in Chemistry (International Programme)

หลักสูตร ปรัชญาดุษฎีบัณฑิต สาขาวิชา เคมี (หลักสูตรนานาชาติ) (ภาคปกติ)

Faculty of Science Department of Chemistry

คณะวิทยาศาสตร์ ภาควิชา เคมี

Expected number of students to be accepted all year round : 15 Students

Admission Requirements

A candidate must:

1. have a Bachelor of Science in Chemistry or any equivalent degree with a minimum grade point average of 3.50 or
2. have a Master of Science in Chemistry or any equivalent degree with a minimum grade point average of 3.50
3. have a TOEFL score of at least 500, TOEFL computer-based score of 173, TOEFL Internet-based score of 61, or IELTS score of 5 .

   Those who do not have any of the test scores specified above will have to take the English Proficiency Examination of the Faculty of Graduate Studies on the specified examination day.

   Exemption from the above conditions may be granted by the Program Committee under exceptional circumstances.

Curriculum Structure

	Credit
For students with Bachelor's degree in Chemistry or any equivalent degree	
Required Courses	24
Elective Courses no less than	9
Thesis	48
For students with Master's degree in Chemistry	
Required Courses	6
Elective Courses no less than	6
Thesis	36
For students with Master's degree in any equivalent degree	
Required Courses	9
Elective Courses no less than	3
Thesis	36

Required Courses	Credit
For students with Bachelor's degree	
SCCH 701 Frontiers in Chemistry	3(3-0-6)
SCCH 702 Chemical Safety and Risk Management	1(1-0-2)
SCCH 703 Scientific Communications	1(1-0-2)
SCCH 704 Seminar in Chemistry	1(1-0-2)
SCCH 705 Progress in Chemistry	3(3-0-6)
SCCH 706 Research Skill Development I	3(3-0-6)
SCCH 707 Research Skill Development II	3(3-0-6)
SCCH 708 Special Problems in Chemistry	3(3-0-6)
Additional required courses for students with Bachelor's degree (6 credits)	
SCCH 711 Organic Structure Determination	3(3-0-6)
SCCH 712 Molecular Structures and Functions	3(3-0-6)
SCCH 731 Advanced Techniques in Analytical Chemistry	3(3-0-6)
SCCH 732 Instrumental Analysis Laboratory	3(1-6-4)
SCCH 751 Molecular Orbital Theory of Transition Metal Complexes	3(3-0-6)
SCCH 752 Characterization Techniques in Catalysis	3(3-0-6)
SCCH 771 Quantum Chemistry	3(3-0-6)
SCCH 772 Thermodynamics and Statistical Mechanics	3(3-0-6)
SCCH 791 Polymer Chemistry	3(3-0-6)
SCCH 792 Polymer Physics	3(3-0-6)
Required courses for students with Master's degree in Chemistry	
SCCH 707 Research Skill development II	3(3-0-6)
SCCH 708 Special Problems in Chemistry	3(3-0-6)
Required courses for students with Master's degree in any equivalent degree	
SCCH 701 Frontiers in Chemistry	3(3-0-6)
SCCH 707 Research Skill development II	3(3-0-6)
SCCH 708 Special Problems in Chemistry	3(3-0-6)
Elective Courses	
SCCH 713 Advanced Organic Synthesis	3(3-0-6)
SCCH 714 Advanced Organic Reaction Mechanism	3(3-0-6)
SCCH 715 Frontiers in Medicinal Chemistry	3(3-0-6)
SCCH 716 Chemical Biology	3(3-0-6)
SCCH 717 Advanced Natural Product Chemistry	3(3-0-6)
SCCH 718 Asymmetric Synthesis	3(3-0-6)
SCCH 719 Advanced Heterocyclic Chemistry	3(3-0-6)
SCCH 720 Current Topics in Organic Chemistry	3(3-0-6)
SCCH 733 Separation Techniques	3(3-0-6)
SCCH 734 Fluidic Technology for Analytical Science	3(3-0-6)
SCCH 735 Chemometrics	3(2-3-5)
SCCH 736 Solution Chemistry	3(3-0-6)
SCCH 737 Environmental Chemistry	3(3-0-6)
SCCH 738 Special Topics in Analytical Chemistry	3(3-0-6)

SCCH 739 Current Topics in Analytical Chemistry I	3(3-0-6)
SCCH 740 Current Topics in Analytical Chemistry II	3(3-0-6)
SCCH 753 Homogeneous Catalysis	3(3-0-6)
SCCH 754 Organotransition Metal Chemistry	3(3-0-6)
SCCH 755 Catalysis in Ring-Opening Polymerization	3(3-0-6)
SCCH 756 Heterogeneous Catalysis	3(3-0-6)
SCCH 757 Solid State Chemistry	3(3-0-6)
SCCH 758 Small Molecule Activation	3(3-0-6)
SCCH 759 Olefin Polymerization Catalysis	3(3-0-6)
SCCH 760 Biorefinery	3(3-0-6)
SCCH 761 Nanocatalysis	3(3-0-6)
SCCH 762 Special Topics in Catalysis	3(3-0-6)
SCCH 773 Structure and Chemical Bonding	3(2-3-5)
SCCH 774 Chemical Kinetics and Molecular Dynamics	3(3-0-6)
SCCH 775 Modern Chemical Physics	3(3-0-6)
SCCH 776 Mathematical Methods	3(3-0-6)
SCCH 777 Green Energy Technology	3(3-0-6)
SCCH 778 Physico-chemical Techniques	3(2-3-5)
SCCH 779 Surface Chemistry and Advanced Electrochemistry	3(3-0-6)
SCCH 780 Special Topics in Physical Chemistry	3(3-0-6)
SCCH 781 Special Topics in Chemical Physics	3(3-0-6)
SCCH 782 Seminar in Physical Chemistry and Chemical Physics I	1(1-0-2)
SCCH 783 Seminar in Physical Chemistry and Chemical Physics II	1(1-0-2)
SCCH 784 Seminar in Physical Chemistry and Chemical Physics III	1(1-0-2)
SCCH 793 Polymer Colloids	3(3-0-6)
SCCH 794 Polymer Characterization	3(3-0-6)
SCCH 795 Techniques in Polymer Science	2(1-3-3)
SCCH 796 Nanomaterials	3(3-0-6)
SCCH 797 Special Topics in Polymer Science and Technology	3(3-0-6)
SCCH 798 Current Topics in Polymer Science	3(3-0-6)
Thesis	
For students with Master's degree	
SCCH 699 Dissertation	36(0-108-0)
For students with Bachelor's degree	
SCCH 799 Dissertation	48(0-144-0)
*** These may change in cases where there are suggestions for the improvement of the curriculum**	

Proposal / Concept Paper

Not required

Additional advantages of the programme

- Multi-disciplinary research
- Active research environment
- Student Scholarships

Details of Scholarships

- Scholarship of the 60th Year Supreme Reign of His Majesty King Bhumibol Adulyadej
- Center of Excellence for Innovation in Chemistry (PERCH-CIC)
- Royal Golden Jubilee Ph.D. Scholarship Programme (RGJ)
- Teaching Assistantship
- NSTDA (TGIST)

Additional information for applicants

Applicants must also submit the following documents by post only to the Director of the Graduate Program in Chemistry, Department of Chemistry, Faculty of Science, Mahidol University, Rama VI Road, Rajthevee, Bangkok 10400. We accept these documents only with postal stamp by December 15th, 2013 (for the applicants in the First round) and by April 30th, 2014 (for the applicants in the Second round*). Both forms are available at www.grad.mahidol.ac.th*

1. Statement of Purpose (in Thai or English) describing academic background, honors or awards received, research background and research interests.
2. Two or three letters of recommendation.

Application Process

Application is only available via online application at www.grad.mahidol.ac.th

Required Documents

- **Documents for online submission**

- Prepare the following required documents to submit via online admission system. All documents must be in pdf format (maximum size 2 MB). Recent photograph must be in jpeg format only (maximum size 2 MB)
- Two (2) recent photographs (1x1 inch in size)
- A copy of an applicant's degree certificate or a letter of graduation certification (for an applicant with a degree completion) 2 copies
- A letter certifying that an applicant is currently in the last semester prior to graduation (for an applicant seeking for a degree) 2 copies
- A detailed transcript of a degree (for an applicant with a degree completion) 2 copies
- A grade report with course names and grades received from the first to the current semester prior to graduation 2 copies
- A copy of identification card 2 copies
- A copy of house registration certification 2 copies
- A copy of proof of payment.

- **Documents for submission by post**

Applicants must also submit the following documents **by post only.**

1. Statement of Purpose (in Thai or English) describing academic background, honors or awards received, research background and research interests,

2. Two or three letters of recommendation (from former advisor, university lecturer or manager).

The above documents must be sent by post the Director of the Graduate Program in Chemistry, Department of Chemistry, Faculty of Science, Mahidol University, Rama VI Road, Rajthevee, Bangkok 10400 with postal stamp not later than December 15th, 2013 (For the Applicants in the First round) and April 30th, 2014 (For the Applicants in the Second round. Both forms are available at www.grad.mahidol.ac.th

Job option after graduation

Academic scholars, researchers, scientists, working in the government sectors or in the industries, or doing business such as managing, producing or selling products or innovations related to chemistry or chemistry-related areas, particularly lead compounds and active ingredients for pharmaceutical and nutraceuticals products, new products for chemical sensors and test kits, new catalysts for petrochemical industries and innovative prototype for alternative energy resources.

Further information may be obtained from

1. **Assistant Professor Dr. Duangjai Nacapricha (E-mail: dnacapricha@gmail.com)**

   Room C. 208, Chemistry Building, 2nd Floor,

   Department of Chemistry, Faculty of Science.

   Tel: 02-201-5122 Fax: 02-354-7151

2. **Dr. Darunee Soorukram (E-mail : darunee.soo@mahidol.ac.th)**

   Room C. 418B, Chemistry Building, 4th Floor,

   Department of Chemistry, Faculty of Science.

   Tel: 02-201-5148 Fax: 02-354-7151

Program Coordinator

Miss. Jenjira Sripetcharaporn (E-mail : jcclockwork@yahoo.com)

Room C. 116, Chemistry Building, 1st Floor,

Department of Chemistry, Faculty of Science.

Tel: 02-201-5110, 02-201-5112 Fax: 02-354-7151

Note 1. For more education information : **www.grad.mahidol.ac.th**

For more information please contact The Student Admission Section.
Tel . 0 2441 4125 ext. 208-210 , 0 2441 9129, E-mail : gradthai@mahidol.ac.th

Department of Chemistry
MAHIDOL UNIVERSITY

Statement of Purpose (send by post only)

APPLICANT: Please provide name

_____
(First) (Last)

Please post to: Director of Graduate Program in Chemistry
Department of Chemistry, Faculty of Science, Mahidol University
Rama 6 Road, Bangkok 10400

(Applicant must specify the field of study, e.g.,organic chemistry, analytical chemistry, physical chemistry and chemical physics, catalysis, or macromolecular chemistry at the lower right corner of the envelope containing documents sent to the Department of Chemistry)

*This Statement of Purpose **must be posted to** the Director of Graduate Program in Chemistry, Department of Chemistry at the above address with postal stamp by **December 15th, 2013** (For the Applicants in the First round) or **by April 30th, 2014** (For the Applicants in the Second round).*

Applicant: Please type or print.

Name of applicant: _____
(first name) (family name)

Current E-mail address:_____

Degree applied: ❑ M.Sc. ❑ Ph.D.

Proposed field of study: *please indicate your first and second choices according to your interest*

☐ Organic Chemistry ☐ Analytical Chemistry ☐ Physical Chemistry and Chemical Physics
☐ Catalysis ☐ Inorganic and Materials Chemistry ☐ Macromolecular Chemistry

Signature of applicant: _____ Date:_____

Awards/Distinctions: List academic awards, prizes, honors, fellowships or other distinctions you have received.

Work/Research Experience: List research activities or employment occupation relevant to your graduate goals.

Publications: If relevant to your proposed field of study, please list your publications and any scholarly activities.

Statement of Purpose: On the back of this form or in an additional sheet, please state your purpose in applying for graduate study, your particular area of specialization within chemistry, your plans for future occupation or profession, and any additional information that may aid the selection committee in evaluating your preparation and your ability for graduate study.

If you have discussed your plans for graduate study with a faculty member in the Department, please list that person's name: _____

Signature:_____ Date:_____

Department of Chemistry
MAHIDOL UNIVERSITY

RECOMMENDATION FORM
Recommender: See below for instructions.
Staple this form to the top of your letter.

This recommendation **must be posted** to the Director of Graduate Program in Chemistry, Department of Chemistry, Faculty of Science, Mahidol University, Rama 6 Road., Bangkok 10400 with postal stamp
by December 15th, 2013 (For the Applicants in the First round) or
by April 30th, 2014 (For the Applicants in the Second round).

Application for academic year 2014
TO BE COMPLETED BY THE APPLICANT:

Applicant: Please type of print. Give this form and an envelope to the person whom you have asked to recommend you. When that person returns the sealed envelope to you, include it with your other application materials.

Name of applicant: _____
(first name) (family name)

Current mailing address:_____

Degree applied: ❑ M.Sc. ❑ Ph.D.

Proposed field of study: *please indicate your first and second choices according to your interest*

☐ Organic Chemistry ☐ Analytical Chemistry ☐ Physical Chemistry and Chemical Physics

☐ Catalysis ☐ Inorganic and Materials Chemistry ☐ Macromolecular Chemistry

Recommender's name:_____ Title:_____

Institution/Company:_____ Department:_____

TO BE COMPLETED BY THE RECOMMENDER:

The person named above is applying for admission to the Graduate Program in Chemistry at Mahidol University. We would appreciate your personal impressions of the applicant's capacity for success as a graduate student. If possible, compare the applicant to other students known to you who have attended or who are now applying for admission to the program.

1. How long have you known the applicant? _____ years
   How well do you know the applicant? ❑ Casually ❑ Well ❑ Very well
   In what capacity have you known the applicant?
   - ❑ Lecturer in one class
   - ❑ Lecturer in more than one class
   - ❑ Undergraduate research advisor
   - ❑ Graduate research advisor
   - ❑ Employer
   - ❑ Other (specify) _____

2. Please compare the applicant with one of the following (check one):
   - ❑ Undergraduates from your institution who have gone on to graduate study
   - ❑ Current senior undergraduates at your institution ❑ Other:_____

	Top 2 %	Top 5%	Top 10%	Top 20%	Top 50%	Bottom 50%
Intellectual potential	_____	_____	_____	_____	_____	_____
Analytical ability	_____	_____	_____	_____	_____	_____
Creativity and originality	_____	_____	_____	_____	_____	_____
Laboratory skill (*if applicable*)	_____	_____	_____	_____	_____	_____
Perseverance towards goals	_____	_____	_____	_____	_____	_____
Emotional maturity	_____	_____	_____	_____	_____	_____
Motivation for graduate study	_____	_____	_____	_____	_____	_____
Background for proposed study	_____	_____	_____	_____	_____	_____

3. Additional information about the applicant

Please type or print your letter. Write candidly about the applicant to provide additional information which will serve as additional credentials for the applicant's admission to the Graduate Program. Indicate how long and in what capacity you have known the applicant. Discuss the applicant's qualifications and potential to carry on advanced study in the specified field, as well as his or her promise of professional success. In describing such attributes as motivation, intellects, and maturity, discuss both strong and weak points. Indicate rank in class, if possible. *The letter can be written in Thai or in English.*

4. Summary

- ❑ Strongly recommend
- ❑ Recommend with confidence
- ❑ Recommend
- ❑ Recommend with reservation
- ❑ Not recommended

Signature:_____ Date:_____
Name:_____ Title:_____
E-mail address:_____ Telephone:_____
Institution:_____ Address:_____
_____

Mailing the completed recommendation letter: Seal the recommendation letter and this completed form in an envelope and sign your name across the seal. Return the signed, sealed envelope to the applicant well before the deadline indicated. Alternatively, you may send it directly to the Director of Graduate Program in Chemistry, Department of Chemistry, Faculty of Science, Mahidol University, Rama 6 Road, Rajdhevee, Bangkok 10400. Tel: (02)-201-5110-2 or Fax: (02)-354-7151.

(Please specify the field of study, e.g. organic chemistry, analytical chemistry, physical chemistry and chemical physics, catalysis, or macromolecular chemistry at the lower right corner of the envelope containing documents sent to the Department of Chemistry).

This recommendation letter will remain confidential during the admission process and will only be used in its procedures in admission and fellowships.