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Doctor of Philosophy Programme in Materials Science and Engineering (International Programme)

หลักสูตร ปรัชญาดุษฎีบัณฑิต

สาขาวิชา วิทยาศาสตร์และวิศวกรรมวัสดุ (หลักสูตรนานาชาติ)

Faculty of Science

คณะวิทยาศาสตร์

Expected number of students to be accepted all year round : 20 Students

### Admission Requirements

A candidate must:

#### Plan 1

1. Students must hold a Bachelor or Master degree in Science, Engineering, or related field;
2. Receive a cumulative GPA of at least 3.50;
3. Student should have experience in scientific research and participate in the MOU project between Mahidol University and origin affiliation
4. Students who are studying in Master's Program in Materials Science and Engineering can request the change of status to doctoral degree, provided that they have already complete the first year in the program at the Master's degree level with GPA not less than 3.00. This request must be formally submitted and approved by Master's Program Committee and Doctoral Program Committee as with as the Dean of the Faculty of Graduate Studies.
5. 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.
6. In case your qualification does not match to the admission criteria, candidates must prior attach A "Requesting Form for Examination" approved by the program director. The form must be submitted before making the application. Kindly download here:  
[http://www.grad.mahidol.ac.th/grad/admission/form\\_th.php](http://www.grad.mahidol.ac.th/grad/admission/form_th.php)

Exceptions from the above conditions may be granted by the Programme Committee and the Dean of Faculty of Graduate Studies;

#### Plan 2

1. Students must hold a Bachelor degree in Science, Engineering, or related field with a grade point average of at least 3.50 or
2. hold a Master degree in Materials Science and Engineering , Science, Engineering, or related field with a grade point average of at least 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.

4. In case your qualification does not match to the admission criteria, candidates must prior attach A Requesting Form for Examination” approved by the program director. The form must be submitted before making the application. Kindly download here:  
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Exceptions from the above conditions may be granted by the Programme Committee and the Dean of Faculty of Graduate Studies;

**Written Examination** (Applicants must attend the examination date accurately to your admission round.)

<b><u>First Round</u></b> January 17, 2015		<b><u>Second Round</u></b> May 16, 2015	
<b>Subjects for examination</b>	<b>Time</b>	<b>Subjects for examination</b>	<b>Time</b>
1. English	8.30 - 11.30 a.m.	1. English	8.30 - 11.30 a.m.
2. General Knowledge	11.30 - 12.30 p.m.	2. General Knowledge	11.30 - 12.30 p.m.
<b>Examination Place</b> Mahidol University , Salaya , Nakhonpathom more details : <a href="http://www.grad.mahidol.ac.th">www.grad.mahidol.ac.th</a> or Announcement at Faculty of Graduate Studies branches.			

### Curriculum Structure

	<b>Credit</b>
<b>Plan 1</b>	
<b>For student with Bachelor Degree</b>	
Dissertation	72
<b>For student with Master Degree</b>	
Dissertation	48
<b>Plan 2</b>	
<b>For student with Bachelor Degree</b>	
Required Courses	13
Elective Courses not less than	12
Dissertation	48

<b>For transfer student from Master of Science Program in Materials Science and Engineering</b>	
Required Courses	10
Elective Courses not less than	3
Dissertation	36
<b>For student with Master Degree</b>	
Required Courses	13
Elective Courses not less than	12
Dissertation	36

	<b>Credit</b>
<b>Required courses</b>	
<b>For student with Bachelor Degree and student with Master Degree</b>	
SCID 551 Materials Characterization	3(1-4-4)
SCID 556 Ceramic Technology	3(3-0-6)
SCID 557 Physical Metallurgy Principle	3(3-0-6)
SCID 558 Principle of Polymer Science and Technology	3(3-0-6)
SCID 660 Seminar Ph.D.	1(1-0-2)
<b>For transfer student from Master of Science Program in Materials Science and Engineering</b>	
SCID 556 Ceramic Technology	3(3-0-6)
SCID 557 Physical Metallurgy Principle	3(3-0-6)
SCID 558 Principle of Polymer Science and Technology	3(3-0-6)
SCID 660 Seminar Ph.D.	1(1-0-2)
<b>Elective courses</b>	
<b>For student with Bachelor Degree and student with Master Degree</b>	
<b>For transfer student from Master of Science Program in Materials Science and Engineering</b>	
SCID 554 Principle of Nanotechnology	3(3-0-6)
SCID 651 Special Topic in Materials Science and Engineering I	3(3-0-6)
SCID 652 Special Topic in Materials Science and Engineering II	3(3-0-6)
SCID 560 Materials Structure and Bonding	3(3-0-6)
SCPY 511 Atomic and Molecular Physics	3(3-0-6)
SCPY 515 Electrical Materials	3(3-0-6)
SCPY 638 Molecular Quantum Mechanics	3(3-0-6)
SCPY 642 Diffraction Technique	3(3-0-6)

SCCH 523	Polymer Chemistry	3(3-0-6)
SCCH 524	Polymer Characterization	1(1-0-2)
SCCH 527	Polymer Colloids	3(3-0-6)
SCCH 543	Polymer Physics	3(3-0-6)
SCCH 550	Rubber Science and Technology	3(3-0-6)
SCCH 632	Advanced Polymer Chemistry	3(3-0-6)
EGBE 604	Biosensors	3(3-0-6)
EGBE 607	Material and Mechanics in Medicine	3(3-0-6)

### **Dissertation**

#### **Plan 1**

##### **Plan 1.1 For student with Master Degree**

SCID 898 Dissertation 48(0-144-0)

##### **Plan 1.2 For student with Bachelor Degree**

SCID 899 Dissertation 72(0-216-0)

#### **Plan 2**

##### **Plan 2.1 For student with Master Degree**

SCID 699 Dissertation 36(0-108-0)

##### **Plan 2.2 For student with Bachelor Degree**

SCID 799 Dissertation 48(0-144-0)

**\* These may change in cases where there are suggestions for the improvement of the curriculum**

### **Additional advantages of the programme**

The program is research oriented program with the special emphasis on surface science, advanced materials, composites engineering materials, nano-materials, biological materials, corrosion and molecular engineering.

### **Details of Scholarships**

1. Scholarships for International Graduate Students.
2. Scholarship of the 60<sup>th</sup> Year Supreme Reign of His Majesty King Bhumibol Adulyadej.
3. Institutional Strengthening Program.

### **Application Process**

Application is only available via online application at [www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th).

## Required Documents

Prepare the following required documents to submit via online admission system or post :

- 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 final year 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 Certificate of English score: TOEFL/IELTS/MU-Test (if any). See detail here: [http://www.grad.mahidol.ac.th/grad/academicinfo/engstandard2553\\_th.php](http://www.grad.mahidol.ac.th/grad/academicinfo/engstandard2553_th.php) 2 copies  
Those who early submit a valid English score prior to the examination will be exempt from English test on the examination date.
- A copy of proof of payment.

Submitting documents 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)

## Job option after graduation

1. Material Science and Engineering researcher
2. Business developer in material science and Engineering
3. Specialist and consultant in material science and Engineering and related field.

Further information may be obtained from the Director of Graduate Studies,  
Materials Science and Engineering.

**1. Asst. Prof. Tomesak Srihirin (E-mail : [tomesak.sri@mahidol.ac.th](mailto:tomesak.sri@mahidol.ac.th))**

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**2. Dr. Dakrong Pissuwan (E-mail : [dakrong.pis@mahidol.ac.th](mailto:dakrong.pis@mahidol.ac.th))**

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Tel : 0 2201 5935 Fax : 0 2644 5426

**Program Coordinator**

**Mrs. Saijai Pengoun** (E-mail : [saijai.pen@mahidol.ac.th](mailto:saijai.pen@mahidol.ac.th))

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**Note** 1. For more education information : [www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th)

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