

# TAIWAN-KMUTT INTERNSHIP PROGRAM (TKIP)

July – August, 2018

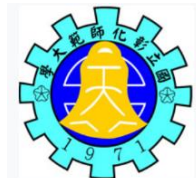
**KING MONGKUT'S UNIVERSITY OF TECHNOLOGY THONBURI**

**Bangkok, Thailand**



126 Pracha-utid Road  
Bangmod, Thongkru, Bangkok 10140  
[www.kmutt.ac.th](http://www.kmutt.ac.th)

**In Collaboration With**



BDI GROUP



# **Program Agenda for Opening and Closing Ceremonies**

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## **Sunday July 1, 2018**

- TKIP students arriving and airport pick-up by KMUTT
- TKIP students are to check into Heliconia Residence at KMUTT Bangmod Campus
- Accompanying professors from Taiwan are to check into hotels

## **Monday July 2, 2018**

- Morning (9:00 am–11:30 am): Opening Ceremony to be presided by KMUTT President
- Participants: KMUTT's executives and faculty members, Taiwanese affiliates in Thailand, professors from Taiwan, Taiwanese and Thai TKIP students, and representatives of host companies
- Afternoon (1 pm): Orientation to Taiwanese students by Dr. Chih-Way Lee of BDI Group

## **Tuesday July 3, 2018**

- Cultural excursion in Bangkok organized by KMUTT's International Affairs Office

## **Wednesday July 4, 2018**

- TKIP students are to depart for host companies
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## **Wednesday August 29, 2018**

- TKIP students are to come back to KMUTT
- TKIP students are to check into Hotel ibis Bangkok Riverside near KX Building

## **Thursday August 30, 2018**

- Closing Ceremony of TKIP at KMUTT's KX Building
- Presentations by all 16 TKIP students
- Certificate awards ceremony

## **Friday August 31, 2018**

- Taiwanese TKIP students are to fly back to Taiwan

Notes: TKIP students will be staying at KMUTT for 3 nights during Orientation at Heliconia Residence on Bangmod Campus and 2 nights during Closing at Hotel ibis Bangkok Riverside.

## Introduction

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Internship has become an integral part in higher education. Students learn better and faster when they go through practical training in companies before graduating from universities. Better still, overseas internship offers students a chance to be exposed to other cultures at placement. As a result, King Mongkut's University of Technology Thonburi (KMUTT) recently initiated the Taiwan-KMUTT Internship Program (TKIP) with the following aims:

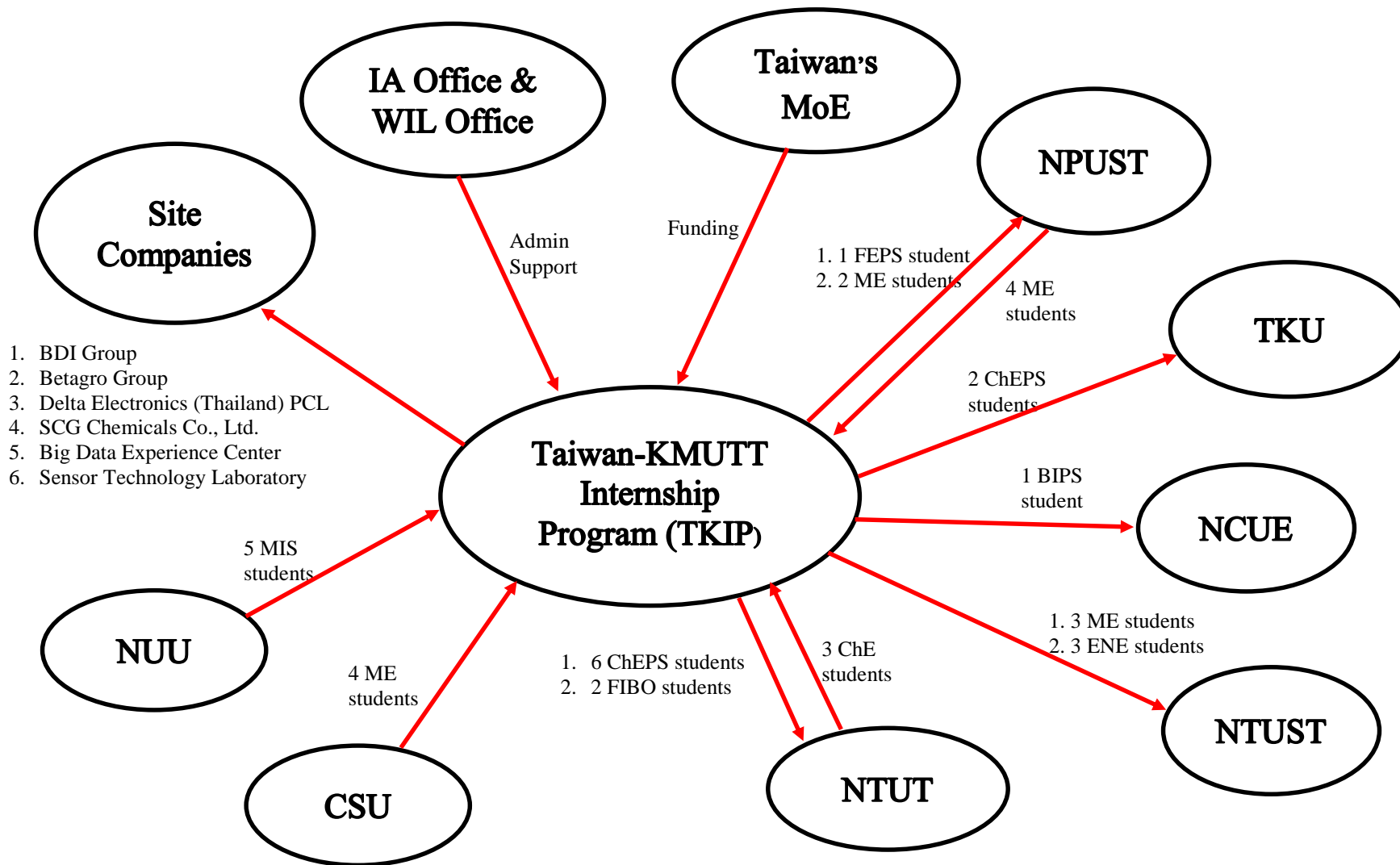
- Exchange of internship students between KMUTT and selected universities in Taiwan in research labs and private companies.
- Cultural exchanges and cross-learning between KMUTT and Taiwanese students

The establishment of TKIP is very timely, as the new Taiwanese government elected in 2016 has a new strategic "Southbound Policy" aimed at increasing cooperation and collaboration, both in academics and in trades, with neighboring countries to Taiwan's south. As such, the Ministry of Education (MoE) of Taiwan has seen a significant increase in its budget that will fund more Taiwanese students who wish to do internship in overseas countries such as Thailand, Malaysia, Singapore, etc.

Below is a diagram showing the working structure of TKIP at KMUTT. At present, the four universities in Taiwan who are TKIP's academic partners and will be sending students to Thailand are during July – August 2018 are:

1. National Taipei University of Technology (NTUT or Taipei Tech)  
URL: <http://www-en.ntut.edu.tw/bin/home.php>
2. National Pingtung University of Science and Technology (NPUST)  
URL: [http://www.npust.edu.tw/index\\_en.aspx](http://www.npust.edu.tw/index_en.aspx)
3. Cheng Shiu University (CSU)  
<http://www.csu.edu.tw/csueng/>
4. National United University (NUU)  
URL: <http://www.nuu.edu.tw/UIPWeb/wSite/mp?mp=50>

NTUT is very similar to KMUTT, both in world rankings and expertise, and has a very strong reputation in science and engineering. On the other hand, NPUST is very strong in food science/engineering and agricultural technologies. CSU is a private university dedicated to promoting the cultivation of well-rounded individuals equally adept in science and humanities. Finally, NUU is a well-rounded university with a reputable college of engineering and college of IT and information system management.



CSU = Cheng Shiu University, ChEPS = Chemical Engineering Practice School at KMUTT, FEPS = Food Engineering Practice School at KMUTT, FIBO = Institute of Field Robotics at KMUTT, IA = International Affairs, MoE = Ministry of Education, NCUE = National Changhua University of Education, NPUST = National Pingtung University of Science and Technology, NTUST = National Taiwan University of Science and Technology, NTUT = National Taipei University of Technology, NUU = National United University, TKU = Tamkang University, WIL = Work-Integrated Learning Office at KMUTT

## Host Companies and R&D Laboratories of Inbound and Outbound TKIP Students

KMUTT has enlisted a number of companies and R&D laboratory to host 16 TKIP inbound Taiwanese students during their July-August internship in Thailand, including Sensor Technology Lab at KMUTT's Bangkhuntien Campus and Big Data Experience Center (BX) at KMUTT's KX Building, as shown in the table below.








Host Company	Fields of Internship	Number of Students
Betagro Group	Food Sci. & Eng. and MIS	2
BDI Group	MIS, ME, and ChE	6
Delta Electronics (Thailand) PCL	ME	1
SCG Chemicals Co., Ltd.	ChE	2
Sensor Technology Laboratory, KMUTT	ME	3
Big Data Experience Center (BX), KMUTT	MIS	2










On the other hand, a total of 20 outbound KMUTT students (10 Master's students – all from practice schools, and 10 undergraduate students) will be going to Taiwan for their Master's research thesis and summer internship, which is shown in the table below.

Research Lab and Host University	Fields of Research or Internship	Number of Students
Department of Chemical Engineering and Biotechnology, NTUT	Chemical Engineering	3 (Master's)
Graduate Institute of Environmental Engineering and Management, NTUT	Environmental Engineering	3 (Master's)
Department of Water Resources and Environmental Engineering, TKU	Environmental Engineering	2 (Master's)
Department of Food Science, NPUST	Food Engineering	1 (Master's)
Department of Marine Biotechnology, NCUE	Biotechnology	1 (Master's)
Institute of Manufacturing Technology, NTUT	Robotics Engineering	2 (Undergraduate)
Department of Biomechanics Engineering, NPUST	Mechanical Engineering	2 (Undergraduate)
Department of Mechanical Engineering, NTUST	Mechanical Engineering	3 (Undergraduate)
Department of Electrical Engineering, NTUST	Electrical Engineering	3 (Undergraduate)

## Placement of TKIP Inbound Taiwanese Students



	Student Name	Institution	Major	Status	Photograph
<b>SCG Chemicals Co., Ltd.</b>					
1	Mr. Yi-Han Chiu	NTUT	Chemical Engineering	Master's	
2	Mr. Yu-Feng Tsai	NTUT	Chemical Engineering	Master's	
<b>BDI Group</b>					
3	Mr. Shih-Kuo Yen	NTUT	Chemical Engineering	Master's	
4	Mr. Chin-Yi Tsai	NPUST	Vehicle Engineering	Undergraduate	
5	Mr. Chung-Kang Kuo	NPUST	Materials Engineering	Master's	
6	Mr. Yi-Chen Huang	CSU	Mechanical Engineering	Undergraduate	
7	Mr. Zheng-Hao Su	CSU	Mechanical Engineering	Undergraduate	

8	Ms. Wen-Chun Peng	NUU	MIS	Master's	
<b>Betagro Group</b>					
9	Ms. Xiang-Yu Chen	NUU	MIS	Undergraduate	
10	Ms. Hsin-Yu Yu	NUU	MIS	Master's	
<b>Delta Electronics (Thailand) PCL</b>					
11	Mr. Chia-Wei Lin	NPUST	Vehicle Engineering	Undergraduate	
<b>Sensor Technology Lab, KMUTT</b>					
12	Mr. Jun-Wei Bai	NPUST	Vehicle Engineering	Undergraduate	
13	Mr. Guain-Kai Huang	CSU	Mechanical Engineering	Undergraduate	
14	Mr. Po-Chun Huang	CSU	Mechanical Engineering	Undergraduate	
<b>Big Data Experience Center (BX)</b>					
15	Mr. Jia-Sing Wu	NUU	MIS	Undergraduate	
16	Ms. Jia-Ying Tang	NUU	MIS	Undergraduate	

Participating Universities:

NTUT = National Taipei University of Technology

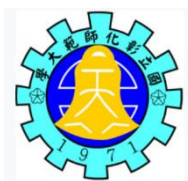
NPUST = National Pingtung University of Science and Technology

CSU = Cheng Shiu University










NUU = National United University






## Placement of TKIP Outbound KMUTT Students



	Student Name	Major	Status	Photograph
<b>Department of Chemical Engineering and Biotechnology, NTUT</b>				
1	Mr. Charuk Prathuangyulchan	Chemical Engineering (ChEPS)	Master's	
2	Mr. Supaluck Watanapanich	Chemical Engineering (ChEPS)	Master's	
3	Mr. Nawapon Somthong	Chemical Engineering (ChEPS)	Master's	
<b>Graduate Institute of Environmental Engineering and Management, NTUT</b>				
4	Ms. Chanyanooch Chanakijarnchok	Chemical Engineering (ChEPS)	Master's	
5	Ms. Bussarin Teerakitkul	Chemical Engineering (ChEPS)	Master's	
6	Mr. Kittiwat Jitmahawong	Chemical Engineering (ChEPS)	Master's	
<b>Department of Water Resources and Environmental Engineering, TKU</b>				
7	Ms. Nattanicha Rugwongthai	Chemical Engineering (ChEPS)	Master's	
8	Ms. Wanee Seesamrittponl	Chemical Engineering (ChEPS)	Master's	

	Student Name	Major	Status	Photograph
<b>Department of Food Science, NPUST</b>				
9	Ms. Phoomjai Charurungsipong	Food Engineering (FEPS)	Master's	
<b>Department of Marine Biotechnology, NCUE</b>				
10	Ms. Bongkotchakorn Peereeyaphat	Biotechnology (BiPS)	Master's	
<b>Institute of Manufacturing Technology, NTUT</b>				
11	Mr. Supat Limsamutchaikul	Institute of Field Robotics	Undergraduate	
12	Mr. Jirat Nakarit	Institute of Field Robotics	Undergraduate	
<b>Department of Biomechatronics Engineering, NPUST</b>				
13	Mr. Nonthawat Jan-in	Mechanical Engineering	Undergraduate	
14	Mr. Sakda Pengchan	Mechanical Engineering	Undergraduate	
<b>Department of Mechanical Engineering, NTUST</b>				
15	Mr. Jakkraphan Surateekosol	Mechanical Engineering	Undergraduate	
16	Mr. Pawat Chunchatrachatt	Mechanical Engineering	Undergraduate	
17	Mr. Natthawat Buaban	Mechanical Engineering	Undergraduate	

<b>Department of Electrical Engineering, NTUST</b>				
18	Mr. Palapol Chobisara	Electronic and Telecommunication Engineering	Undergraduate	
19	Ms. Sasakorn Rattanawong	Electronic and Telecommunication Engineering	Undergraduate	
20	Ms. Wujitanan Janbuala	Electronic and Telecommunication Engineering	Undergraduate	

Participating Universities:

NTUT = National Taipei University of Technology

TKU = Tamkang University

NCUE = National Changhua University of Education

NPUST = National Pingtung University of Science and Technology

NTUST = National Taiwan University of Science and Technology

## Profiles of Sponsoring Companies for Inbound Students

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### Betagro Group



#### Contact Info

Email: [contactcenter@betagro.com](mailto:contactcenter@betagro.com)

Tel: (+662) 833-8333

URL: <http://www.betagro.com/corporate/en>

#### Company Profile

Betagro Group engages in animal feed production, livestock, animal health products, and food product businesses. It offers animal feed for poultry, pigs, cattle, shrimps, fishes, and pets; and manufactures chicken feed, boiler chicken, raw chicken meat, and frozen and cooked products. The company also manufactures swine feed, as well as fattening pigs that are supplied to slaughter houses; manufactures frozen cooked food for export and concentrated soup base for industrial use; and manufactures and distributes specific pathogen free pork products. In addition, it processes and distributes chicken meat and pork, sausages, meat balls, eggs, and cooked products; manufactures animal medicines and health supplements formulated especially for commercial livestock; manufactures and distributes farm equipment; and provides chemical and biological laboratory services. Further, the company engages in food retail and wholesale, restaurant, resort, and plantation crop businesses. It serves customers in Thailand and internationally. Betagro Group was founded in 1967 and is headquartered in Bangkok, Thailand with feed manufacturing facilities throughout Thailand.

Established in 1967 under the name of Betagro Company Limited with registered capital of Baht 10 million. The company's main business started from production and distribution of animal feed products. Its first factory was located at Prapradang district, Samutprakarn province and the first head office was situated at Suanmali sub-district. The company continued to expand its business throughout the period starting from pork and chicken farm, animal feed production, hatcheries at Pakchong district, Nakornrachasima province to new production base at Lopburi province based on more suitable raw material resource and location to serve full

course of company's agricultural industry covering animal food manufacturer, chicken and pig farms, hatcheries process fresh chicken meat and frozen chicken meat.

Frozen food products. Betagro has established Betagro Group of companies to run the business operation to cover production, raising, breeding and integration of swine and chicken, including the production of animal health care and pharmaceutical products of international standard. In addition, the company in collaboration with the agriculturists launched price guarantee project for chicken and eggs, contracted farm projects and hiring some agriculturists for swine raising to develop the high-quality breeding swine to top-grade fattening swine, production and distribution of fresh pork meat, fresh chicken meat and eggs to supply both domestic and international markets.

At present, Betagro Group develops into the leading corporation in agricultural industry and fully runs its business towards complete course in food business, starting from production of safe and quality food production of serve better life of Thai people and world population. Betagro Group enjoys its total revenue of over Baht 22,000 million, with 25 companies in the Group with over 15,000 employees nationwide and abroad. Betagro Group headquarter has moved to its new location at Betagro Tower in North Park, Vipavadi Rangsit Road, Bangkok since 22<sup>nd</sup> April, 1996.

### **Regional and Feed business**

Betagro public Company Limited operates this line of business under Betagro Group of company by establishing subsidiaries in many provinces in all regions nationwide to support production and distribution of Betagro Group products. The Group's business covers animal feed production, operation of pig farm and egg farm, price guaranteed project of chicken meat and egg, contract farm projects and hires agriculturists to raise fattening swine, production and distribution of fresh pork meat, eggs and other food products. The group not only aims to supply high quality and hygienic food products for consumers but also to create job opportunities and income to the local people.

### **Betagro Public Company Limited: Feed Business**

BTG (Betagro Group Public Company Limited) is the first company under Betagro Group of company. It is established in 1967 under the original name of Betagro Company Limited and changed to Betagro feed Co., Ltd. in 1989. The company operates the production of animal feed products to supply to Betagro subsidiaries and to distribute to all customers. In 1994, the company changed its name to Betagro Agro Group Public Company Limited. Due to economic crisis in 1997 and the Bird flu crisis in 2004, the company suspended the trading in the Security Exchange of Thailand and changed its name Betagro public Company Limited in 2007. The Betagro Group has many feed mills in various locations as follows:

- Feed mill at Prapradaeng, Samutprakarn.
- Feed mill at Amphur Muang, Nakorn Pathom.
- Feed mill at Pattananikom, Lopburi.
- Feed mill at Pakchong, Nakorn Ratchasima and another 2 local companies which conduct animal feed business in the North and the South:

1. Betagro Northern Agro-Industry Co.,Ltd (BNA) has a feed mill at Amphur Muang, Lumphun, which produces and distributes animal feed stuff for customers in the upper northern region.
2. Betagro Southern Co.,Ltd (BTS) has a feed mill at Rattaphoom, Songkhla, which produces and distributes animal feed stuff for all customers in the southern region.

### **Internship Opportunities**

Betagro offers summer internship opportunities to both undergraduate and graduate students in the fields of food science and food engineering. For example, Betagro has been a host company for KMUTT's Food Engineering Practice School (FEPS), a practice-based international Master's program, for over 10 years. In addition, Betagro also sponsors undergraduate students at KMUTT through its Work-Integrated Learning (WIL).

Typical internship projects at Betagro involve:

- Process improvement to increase yields and reduce losses
- Improvement of energy efficiency
- Quality improvements of food products





**Company URL:** <https://www.scgchemicals.com/en>

### **Company Overview**

As one of SCG's three core businesses, SCG Chemicals manufactures and offers a full range of petrochemical products ranging from upstream production of olefins and intermediate production of styrene monomer, purified terephthalic acid and methyl methacrylate to downstream production of four main plastic resins, polyethylene, polypropylene, polyvinyl chloride, and polystyrene, including fabricated products such as film, pipe & fittings, and acrylic sheet. To better serve customers' requirements, SCG Chemicals assigns prime importance to the development of new technology and innovation for the creation of high value-added products and services (HVA). At present, SCG Chemicals is one of Thailand's

largest integrated petrochemical companies and a key industrial producer in the Asia-Pacific region.

Widely recognized for product quality as well as for excellent management and world-class operation efficiency, SCG Chemicals has joint ventures with a number of the world's leading chemical companies, including The Dow Chemical Company, Mitsui Chemicals and Mitsubishi Rayon.

### **Internship Opportunities**

SCG-Chem hosts many undergraduate students in Chemical Engineering from all over Thailand. The company is also a major sponsor of the Chemical Engineering Practice School (ChEPS), an international practice-based Master's curriculum at King Mongkut's University of Technology Thonburi (KMUTT). Each year, many ChEPS students are interned at the company's various subsidiaries for 6 months to a year. The company also employs many ChEPS graduates each year.

SCG-Chem produces a number of chemical products such as olefins and polymers. The company has many subsidiaries. A very important one is ROC or Rayong Olefins Co., Ltd., which is one of the biggest producers of olefins. Another important subsidiary is TPE or Thai Polyethylene Co., Ltd., which is specialized in producing polymers such as low-density polyethylene (LDPE) and high-density polyethylene (HDPE). SCG-Chem possess many complex chemical processes. So simulation is crucial to the company. Here, the preferred simulation program is Aspen Plus (developed by Aspen Technology, Inc. which is based in Massachusetts). Lately, SCG-Chem also moves its R&D into other areas such as green technologies, which require other software such as CFD (Computational Fluid Dynamics) simulators. A selected list of internship projects at SCG-Chem is shown below.

SCG-Chem the company is one of many business units of SCG Group, a conglomerate which owns a diverse portfolio of businesses. In addition to internship opportunities at SCG-Chem, chemical engineering students can also be interned at other SCG Group's business units, such as SCG Paper Public Co., Ltd., SCG Cement Public, Co., Ltd., or SCG Plastics Co., Ltd.

The following is a list of recent internship projects that SCG-Chem and KMUTT have been involved with.

- Computational Fluid Dynamics Simulation of Fine Particles Suspension in a Stirred Tank
- Process Synthesis and Intensification of Light Hydrocarbon Separation Schemes
- Development of VOC (Volatile Organic Compounds) Reduction Bio-processes for CKB Truck Loading
- Kinetic Modeling of Selective Hydrogenation of Acetylene by Regression Analysis
- Modeling of Extractive Distillation of Pilot Plant by Using Mixed Solvent
- Model Development of An Ethylene Dichloride Cracker



- Process Synthesis & Design for a Wide Range HCs (H<sub>2</sub> and C<sub>1</sub>-C<sub>9</sub>) Separation Process to Increase Ethylene Product
- Development of an Adsorption Mode

## **Delta Electronics (Thailand) Public Co., Ltd.**



### **Bangpoo Plant**

909 Soi 9, Moo 4, E.P.Z., Bangpoo Industrial Estate, Tambon Prakasa, Amphur Muang-samutprakarn, Samutprakarn Province 10280 Thailand.

**Tel. :** (+662) 709-2800

**Fax :** (+662) 709-2827

### **Wellgrow Plant**

111 Moo 9, Bangwua, Bangpakong, Chachoengsao 24180 Thailand.

**Tel. :** (6638) 522-360

**WEBSITE:** [www.deltathailand.com](http://www.deltathailand.com)

### **Company Overview**

Delta Electronics (Thailand) PCL. (DET), a Taiwan-based company, is one of the world's leading producers of power supplies and electronic components comprising cooling fans, EMI filters and solenoids. DET's key power management products consist of switching power supply, DC-DC Converters and solar inverters. The products are widely used in applications for automotive, medical, telecommunications, IT, automation and more.

Founded in 1990, DET has gradually ascended to the Stock Exchange of Thailand benchmark index (SET50) with consolidated revenue exceeding USD 1 billion. Through innovative business processes, astute M&A activities and being at the forefront of Green solutions across its products and organization, DET is now a world class power management solutions provider. Our factories are located in Thailand, India and Slovakia while its state-of-the-art R&D facilities are in Germany, Thailand and more than 10 other global locations where the best R&D talents are located.

### **Business Overview**

Though Delta Thailand was initially set up as a cost effective production base for Delta group, today it has transformed itself into one of the world's leading Design, Manufacturing and Service (DMS) companies. Its businesses are now mainly involved in power management solutions and manufacture of electronic components i.e. cooling fan, electromagnetic interference filter (EMI) and solenoid. The current power management product line covers various types of power supplies including power systems for information technology, telecommunications, industrial applications, office automation, medical industries and power supplies for server, networking and DC-DC converter and adapter.

The Company was established in 1988 and its shares have been listed on the Stock Exchange

of Thailand since 1995 under the symbol of "DELTA". Its Thailand's factories are located in Bangpoo Industrial Estate, Samutprakarn, Wellgrow Industrial Estate, Chachoengsao, and the other production sites are in Slovakia and India. All of the manufacturing plants have now been operating with strong supports from its own 9 R&D centers which were established to strengthen its product design and development capabilities. Those R&D centers are situated in 8 countries, Germany, USA, Switzerland, UK, Romania, India, China and Thailand. (For further information of our operations, please refer to the section of "**Global Operations**").

With the efforts in continuously enhance its knowledge in the product design & development coupled with the extensive capability in production management and the reliable and efficient customer services, the Company's products are widely accepted by the world's renowned producers in IT, telecommunication, industrial application, medical and consumer electronics business such as HPQ, CISCO, Motorola, IBM, Black & Decker, ENGENIO, Sun Micro Systems, Phoenix, and others.

### **Internship Opportunities**

Delta Electronics offers summer internships in various disciplines, both technical and non-technical. The non-technical fields are related to business management and international trade. For technical fields, the disciplines are:

1. Electrical Engineering and Electronics
2. Mechanical Engineering
3. Industrial Engineering
4. Chemical Engineering
5. Information Technology and Management

An example of an internship project in the IT Department at Delta involved:

- Basic understanding of HTML, how it works, and how it affects the interface, etc.
- Basics of C# language and general ideas on how to code in C#.
- Understanding of the importance of SQL in C#.
- jQuery: The purpose of jQuery is to adjust little parts of the interface and make the whole webpage looks more professional and consistent.

The task was to complete the webpage development of the E-Data Center Entrance Form.

## B.D.I. Group



B.D.I. is a Taiwanese-owned company that manufactures a wide array of products ranging from electrical appliances (necessary for daily life) to various industrial parts including motorcycle and automobile spare parts, machinery parts, and complex and delicate products of electronic parts with specific requirements on their use individually.

### COMPANY PROFILE

<b>Founder</b>	Mr. Suthum Changkajonsakdi
<b>Established Date</b>	January 17, 1978
<b>Registered Capital</b>	300 million Baht
<b>Address</b>	46/1 Moo 12 Bangplee Bangnatrad Rd., T. Bangpleeyai, A. Bangplee, Samuthprakarn 10540 Thailand
<b>Telephone No</b>	(+662) 337-3078-84
<b>Fax No</b>	(+662) 337-3589-90
<b>URL</b>	www.bdi.co.th
<b>E mail</b>	bdigroup@cscoms.com
<b>Total Plant Area</b>	26,000 M2
<b>Total Employees</b>	400 persons

### COMPANY HISTORY

YEAR	EVENT
January 17, 1978	First established at Bang – Chan with the capital of 4 million Baht and 30 employees.
October 1978	First Hub in Thailand was born.
January 1980	Moved to new factory at present address due to its business expansion.
March 1986	Technical joint venture with KOITO Manufacturing Co., Ltd. Japan to produce automotive lighting equipment. In June of the same year,

also capital joint venture with KOITO to establish Thai Koito Co.,Ltd.

**December 1986**

Joint venture with AP Honda Motor Co.,Ltd and Takahashi Seiki Co.,Ltd Japan to establish a company named Bangkok Seiki Co.,Ltd for manufacturing Mold (now changed to Bangkok Tools & Mold).

**February 1990**

Technical joint venture with Yanagawa Seiki Co., Ltd. Japan to support Diecasting production technique.

**October 1991**

Bangkok Alloy Enterprise Co., Ltd. (BAE) was established to increase Machining and Painting production capacity for aluminium.

**January 2001**

BDI & BAE achieved Certificate of ISO 9002 from BVQI.

**March 20, 2001**

Technical Joint-Venture in Plastics Molding and parts production with Takagi Seiko Corporation, Japan.

**September 2003**

BDI & BAE received Certificate of ISO 9001 : 2000 from BVQI.

**April 2005**

First start new Plastics Painting Plant at Bangplee to support most Motorcycle & Automotive Customers' Plastics Parts.

**June 2007**

BDI received Certificate of ISO/TS16949 from URS.

**July 2007**

Mr. Chang Ming Fong has been appointed to be the new President.

**April 2010**

BDI received Delivery Award from Thai Honda.

**August 2010**

BDI received the Outstanding Entrepreneurs Award in Labor Relation and Welfare in 2010 from Department of Labor Protection and Welfare.

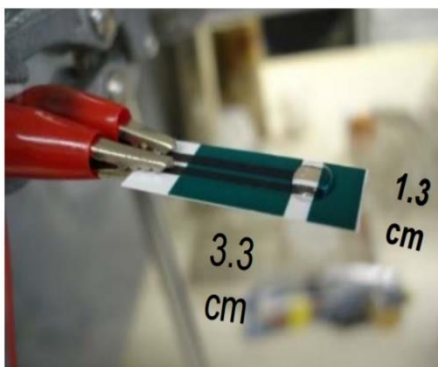
## **Internship Opportunities at BDI**

BDI Group can host students in the fields of Mechanical Engineering, Chemical Engineering, and Information Management/Information Technology.

Because BDI is primarily in the business of producing products that require mold design, the company uses sophisticated software to model the flow of raw materials in the mold. The company also uses sophisticated robotics to help streamline the production process. Interned students at BDI will have the opportunity to learn how to use a mold design software called Moldex3D, a plastic injection molding simulation software. Formulations based on plastic raw materials are an important part of BDI's production process. BDI also operates a vocational technical college called T-TEC which produces technicians who can serve the needs of the company. T-TEC is equipped with a pilot factory where students and trainees can have hands-on learning experiences in every aspect of the production of the company.

## Sensor Technology Laboratory

(Biosensors and Chemical Sensors Technology Lab) at KMUTT, Bangkhuntien Campus, Bangkok, Thailand



**URL:** <http://www.pdti.kmutt.ac.th/en/index.php/content/view/17/34/>

**Lab Director:** Assoc. Prof. Dr. Werasak Surareungchai

**Tel.:** (+662) 470-7474

**Email:** [werasak.sur@kmutt.ac.th](mailto:werasak.sur@kmutt.ac.th)

Advances in electrochemistry and sensor (biosensors and chemical sensors) research and development have come about due to the need to meet the indigenous demands of the food industry, for environmental analysis, and for biomedical applications. Research is carried out in three areas, for which there is a need to develop existing approaches for better performance of the sensors, improve analytical methods and explore possible new applications. The biosensors and chemical sensors technology group can be sub-divided into the following lines of study:

1. *Bio sensors:* Microbial BOD sensors, phenol enzyme biosensors, screen-printed glucose oxidase electrodes, and simultaneous determination of glucose and sucrose.

2. *Chemically modified electrodes*: Biocompatible redox polymer membrane, metal microparticles in polymer films, inorganic film modified electrodes, and nafion-coated probe in viscous/resistive media.
3. *Electroanalytical techniques*: Pulse amperometric detection, artificial neuron networks for interpreting voltammetric data, and stripping analysis.

The following are some current research projects in this group.

- Microbial BOD sensors
- Screen-printed electrodes for blood-glucose determination
- Screen-printed electrode for pesticide detection
- DNA-modified screen-printed electrode for Escherichia coli detection
- Development of solid polymer electrolyte of redox gases using interdigitated array microelectrodes

## Big Data Experience Center (BX)

At KX Building, KMUTT, Bangkok, Thailand



**URL:** <http://bigdataexperience.org/>  
Knowledge Exchange Center, KMUTT, Bangkok 10600  
**Tel:** (+6689) 789-5224 (Michael)  
**Email:** [contact@bigdataexperience.org](mailto:contact@bigdataexperience.org)



## RESEARCH SPOTLIGHT

# King Mongkut's University of Technology Thonburi



Dr. Tiranee Achalakul (center), Associate Dean for Educational Development, Faculty of Engineering, discusses the big data trend with Dr. Phond Phunchongpham (left), Department of Mathematics, Faculty of Science, and Executive Vice President Pajaree Saengcum (right), G-ABLE.

## Big Data Experience Center Launches

TRANSFORMING THE THAI BIG DATA ECOSYSTEM

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"Big Data" is a buzzword heard around the world, but without experiencing the benefits of using large datasets to produce useful insight or significant value in goods and services, it can be hard to comprehend what a reasonable return on investment in big data would be. Data scientists have been developing new tools to help businesses, governments, and consumers find and analyze relevant data. Insights from big data have helped governments identify and prioritize citizen needs and companies increase sales and improve efficiency. One of the main hurdles to realizing these benefits is the lack of sufficiently skilled IT staff.

So KMUTT and G-ABLE Co., Ltd., a leading system integration and IT services firm in Thailand, launched the Big Data Experience Center (BX) on 23 July, 2015 at KX, KMUTT's center for knowledge exchange for innovation, to transform the big data ecosystem in Thailand. KMUTT's internationally recognized expertise in research in combination with G-ABLE's experience providing IT services in both the public and private sector will allow BX to train and inspire people to start or extend productive use of big data.

"The BX Center will address the country's big data human resource shortage by transferring knowledge from the university's data scientists who have expertise in 11 areas," noted Dr. Tiranee Achalakul, KMUTT Associate Dean for Educational Development, Faculty of Engineering. This landmark partnership aims to facilitate the adoption of big data analytics to

increase social impact and strengthen market competitiveness by exploring, explaining and exchanging knowledge about the value of big data, especially for small and medium enterprises (SMEs). In particular, BX aims to:

- eXplain by educating and training students and industry personnel to use big data to solve business problems and giving students marketable skills;
- eXplore by sharing ideas and global best practices in the use of big data; and
- eXchange case studies, prototypes and surveys among academia, technology providers, implementers, SMEs and other private corporations.

Thai corporations and SMEs are invited to visit BX data scientists to ask questions and experience a range of big data technologies from leading providers. BX will transform the big data ecosystem, allowing Thai industry to benefit from the competitive advantage offered by insight generated from big data by compiling knowledge, developing new products, performing effective research, facilitating the learning and implementation process and sharing big data perspectives and experience. Currently BX is working with the following technology partners: IBM, Microsoft, EMC-Pivotol, Informatica, Cloudera, Oracle, Cisco, Tableau, Insightera, and CA Technology.

KMUTT and G-ABLE share the vision of mobilizing talent and leveraging education to take advantage of the big data trend as noted by G-ABLE CEO Nart Liuchareon and KMUTT President Sakarindr Bhumiratana. In particular, the launch of BX is a step toward meeting one of KMUTT's goals as an institution of higher education, "to help strengthen national competitiveness by using university resources in cooperation with partners to strengthen SMEs and other

corporations through innovation" according to President Sakarindr.

BX will benefit from the expertise of multiple data scientists, including PhDs with data modeling experience and a wide range of technical knowledge. BX will project consultation, strategy and framework design services as well as prototyping and designing data science processes. In addition, BX organizes courses, networking events, seminars, technical workshops and training in big data at the 100-square-meter facility within KX, such as the half day seminar on the Fundamentals of Big Data on 15 October.



### Launching BX

Dr. Tiranee, Dr. Santitham Prom-om, Department of Computer Engineering, President Sakarindr, CEO Nart, Executive VP Pajaree, G-ABLE, and Dr. Khajonpong Akkarajitsakul, Department of Mathematics (from left to right) agree to transform the big data ecosystem.

### FOR MORE INFORMATION

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