TAIST TokyoTech

Premium Newsletter

Dec. 2010 Vol.4

*賛助会員の皆様への活動状況報告*

***Activity report for TAIST - Tokyo Tech Supporting Members***

*東京工業大学　TAIST運営委員会*

*TAIST Steering Committee, Tokyo Institute of Technology*

# TAIST Graduation Ceremony 2009

# TAIST 2009年度修了式

*President of NSTDA opened the ceremony*


*EVP of Tokyo Tech delivered welcome address*

Dr.Thaweesak Koanantakool, President of NSTDA (left side) opened TAIST Graduation Ceremony 2009 on 16 August 2010 at 3rd floor, Auditorium room, Convention Center Building, Thailand Science Park. Prof.Ichiro OKURA, Executive Vice President of Tokyo Institute of Technology (right side), delivered welcome address to all guests and participants.

2010年8月16日，タイランドサイエンスパーク内コンベンションセンターのオーディトリアムにおいて，2009年度TAIST修了式が開催されました。

（写真左）開式の辞を述べられるタウィーサックNSTDA長官

（写真右）祝辞を述べられる東京工業大学大倉一郎理事・副学長

*Assoc.Prof.Dr.Thanaruk T.*


*Assoc.Prof.Dr.Anantawat K.*


*Assoc.Prof.Dr.Sornprach T.*

Representative from Thai universities namely Sirindhorn International Institute of Technology (SIIT), Kasetsart University (KU) and King Mongkut's Institute of Technolgoy Ladkrabang (KMITL) gave the speech. From picture left to right is Assoc.Prof.Dr.Thanaruk Teeramunkong from SIIT, Assoc.Prof.Dr.Anantawat Kunakorn, Dean of International College, KMITL and Assoc.Prof. Dr.Sornprach Tahnisawanyangkura, Vice President for International Affair, KU respectively.

TAISTプログラムに参加しているタマサート大学シリントーン国際工学部（SIIT），カセサート大学（KU），キングモンクット工科大学ラカバン校（KMITL）の代表する方々からも祝辞が述べられました。今年度はAEプログラム6名，ICTESプログラム15名，計21名の修了生となりました。






In 2009, TAIST-Tokyo Tech has 21 students graduated from 2 programs that are Information and Communication Technology of Embedded Systems (ICTES) and Automotive Engineering (AE).


There are 15 students from ICTES program and 6 students from AE program. The atmosphere is full with smile and delight both parent, friends and junior come to join the ceremony. That day we have 149 participants.



*Friends and junior gathered together to read a poem and sang a song for graduated students*

*友人・後輩からのお祝いのパフォーマンス*

ICTESプログラムは自作の詩の朗読，AEコースは想い出深い写真のプレゼンテーションとともにコーラスのサプライズショーを行いました。下の枠内が学生による自作の詩。

TAIST students gave the surprised shows for the graduated students. ICTES students composed poem which wrote by themselves, please see below and AE students sang a song with presentation.

| | | |
|---|---|---|
| Life… is something hard to define.<br>Someone said it is the most complicated thing that god design.<br><br>It's not smooth like linear line,<br>and not stable like constant pi.<br>It's complex than equation of Albert Einstein.<br>There are a lot of problem we can't deny.<br>Don't hesitate; just face it with your smile.<br>Of cause it has exit for every problem of all kind.<br>But that solution is very shy.<br>It always hides.<br>You just don't give up, seek out until find. | In this long road, you may feel desperate and tired.<br><br>No... don't cry.<br><br>May be take vacation at Hawaii.<br>Or any kind of relax in your style.<br>After your head are purified,<br>Comeback and fight again in the front line.<br>Oh our beautiful butterfly,<br>If you want to fly in the sky,<br>high and high.<br><br>Always keep in your mind that everything will be fine.<br>You just take a break for a while.<br>Enjoy eating with your favorite apple pie<br>and delicious french-fries. | Or expensive steak with 1999 grape wine.<br><br>The only thing you have to do is try and try.<br>Then, your future will not blind.<br>But only bright and shine.<br>At last, with intent of fire that shimmer in your eyes,<br>We believe you can get whatever you desire.<br>We only want you to know...<br>you are our pride.<br>We hope we will keep in touch with email reply or mobile.<br>Our relationship will never die.<br>Goodbye, senior of mine.<br>**COMPOSED by Mr.Siwacha Janpinijrut, ICTES # 2**<br><br>**Email:siwachaj@hotmail.com** |



In addition, TAIST-Tokyo Tech has invited supporting members consisting of PTT Chemical Public Co.,Ltd, IRPC Public Co.,Ltd, ISUZU Group Foundation, PTT Aromatics and Refining PLC and Asahi Glass Co.,Ltd to exhibit and introduce themselves to TAIST members such as students, Japanese Executive and professors, representative from Thai universities and NSTDA researchers.


Moreover, all graduated students brought their research topics through poster displayed outside the room.

## Factory Visit: Toyota Banpo

## 工場見学：トヨタ自動車　バンポー工場


Toyota Motor Thailand Co.,Ltd welcomed TAIST students especially AE students and researchers from MTEC and NECTEC and lecturers from KMITL and Thai-Nichi Institute of Technology(TNI) to visit TOYOTA Ban Po in Chachoengsao province on 9 August 2010. There are 30 interesting participants.

TAIST　AEプログラムの学生及び研究者・講師総勢30名が2010年8月9日にチャチェンサオ県にあるトヨタバンポー工場を訪れました。

Ms.Pornpimol Laoprasopwattana, receptionist, stands left side of picture, welcomes all participants and introduces overall of Toyota Ban Po factory.
Mr.Suparuek Boonsompan and Mr.Wachapong Siamratanakit, from middle to right of picture,Chief Engineer, explained all questions to participants professionally.

案内担当のポーンピモン氏（中央写真・左）は一行を歓迎し，工場全体の紹介をしてくださいました。また，主任技術者のスパルック氏とワチャポン氏に参加者からの専門的な質問への回答・説明を頂きました。

## For more information on Toyota Ban Po

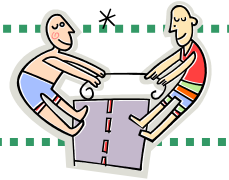
Toyota Ban Po "green factory"

Ban Po Factory is claimed as one of the Thailand's most advanced automobile factories and is the example of the best environment management factory in Thailand.
Ban Po factory is a part of IMV program (Innovative International Multi-Purpose Vehicle), located on 1,500 rai in Ban Po district in Chachoengsao province. It is the first "green factory" in Thailand and one of a few in the world. Toyota pursues the concept of energy saving, with using solar cells for the office, controlling the air and water pollution, and reducing

the trash to 0% by recycling. Ban Po factory is the learning center for students about environment-friendly technology similar to the successful factories in Japan. It currently has the capacity of producing 80,000-100,000 units annually and it also has the potential to produce 400,000 units a year.

Source: Yuadyarn Newspaper (Translated from Thai)
**http://www.bkkautos.com/Toyota-opening-green-factor-+in-Ban-Po**
We would like to express our thanks for warm welcome and useful information for Toyota Ban Po on that day during visit.

## SPORTS DAY 2010



TAIST-Tokyo Tech held the activity called “Sport Day 2010” on 13 September 2010 in the afternoon at Sport Hall, Sirindhorn Science Home, Thailand Science Park, Pathumthani.

TASIT-Tokyo Techは2010年9月13日に「スポーツデイ2010」をシリントン・サイエンスホーム内にあるスポーツホールで実施しました。

*Our speakers come from AE and ICTES representa-*

The objective of this activity is to create the relationship among all TAIST students both AE and ICTES program, NSTDA researchers, Japanese professors, Thai co-lecturers.

このイベントは，TAISTのAE，ICTESのプログラムの枠を超えた全学生，NSTDA研究者，日本側の教員，そしてタイ側の教員全ての交流を目的としています。

Dr.Panya Kansuwan, AE Program Director, as the president, opens the activity. We have 2 team colors consist of BLUE and ORANGE team. There are 1 activity for ice-broken behavior and 5 types of sport that are football, tug-of-war, chairball, relay race, 6 legs-run and obstacle run.

参加者はブルーとオレンジの２つのチームに分かれ，サッカー，綱引，ポートボール，リレーなどの種目に挑戦。笑顔が溢れる楽しい一日となり，参加者の親睦が深まりました。

There were more than 130 participants including TAIST students both AE and ICTES program, NSTDA researchers, professors from King Mongkut's Institute of Technology Ladkrabang (KMITL) and Sirindhorn International Institute of Technology (SIIT), NSTDA and Tokyo Tech staff.
The atmosphere on that day was totally happy and full with smile.
BLUE and ORANGE team joined playing games together without separating color. We used footballs and powder in the game. Footballs will be sent a circle while everybody sings a song.
Below is the picture about ice-broken behavior activity.

*Dr.Shina Benyajati, left side with glass, MTEC researcher from NSTDA joined in the activity*

*Prof. Takahashi Kunio, the middle of picture, AE professor from Tokyo Tech joined activity*

*Even working, but NSTDA and Tokyo Tech staff still did with smile.*


Group Photo to show the power!!!

*Middle is Prof. Takahashi is giving them trophy cup. They seized trophy cup together*

## NECTEC lab visit　　NECTEC研究室見学

NECTEC welcomed 3rd batch of ICTES students to visit NECTEC laboratory on 9 August 2010. Students visited 6 laboratories on that day as shown below:

2010年8月9日，ICTES第3期生はNECTECのIndustrial Control/ Automation Laboratoryをはじめとする６研究室を見学しました。

1. Industrial Control and Automation (ICA) Laboratory introduced by Mr.Wasin Sinthupinyo
2. Embedded System Technology (EST) Laboratory introduced by Mr.Seksun Sartsatit
3. Imaging Technologies (IMG) Laboratory introduced by Mr.Wasin Sinthupinyo
4. Human Language Technology (HLT) Laboratory introduced by Mr.Choochart Haruechaiyasak
5. Wireless Innovations and Security (WIS) Laboratory introduced by Mr.Kitti Wongthavarawat
6. Optical and Quantum Communications (OQC) Laboratory introduced by Ms. Jutaphet Wetcharungsri

*(left side) Mrs.Kullaprapa Navanugraha, NECTEC Senior Director of Human Capital Development Division, is honorable guest to give TAIST students a welcome speech.*

*(left side) Mr.Wasin Sinthupinyo, NECTEC researcher, described the information of Image Technology.*

*Dr. Nattapon Chayopitak, NECTEC Researcher explained work process of ICA laboratory*


*Group photo with relaxing gesture.*

The Industrial Control and Automation Laboratory (ICA lab), previously named as Industrial Electronics Lab, has been founded since1993.The objective of the lab is not only to conduct in-house research and development, but also to closely collaborate with and support local industries in R&D. In the past, the main R&D activities were focused on automation system and energy conversion. It is believed that, having many kinds of basic equipment and experienced staffs, the ICA lab can be a good partner for the local universities and private companies in R&D activities. For more information, please join www.nectec.or.th

One high technological equipment in ICA laboratory

**NECTEC researcher who takes in charge of ICA laboratory**

Dr.Kanokvate Tungpimolrut
email: kanokvate.tungpimolrut@nectec.or.th
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National Electronics and Computer Technology Center
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Klong Luang,Pathumthani 12120, THAILAND.
Tel : +66 (0)2-564-6900 Ext 2410
Fax: +662 (0)2-564-6901

## One performance with one member of ICA lab　ICA研究室の研究例紹介

**Advanced Automation System Research Group**
先進オートメーションシステム研究グループ

Advance Automation System research group (AAS) is a research group within National Electronics and Computer Technology Center (NECTEC). The main objective of AAS is to support National Science and Technology Development Agency (NSTDA) policy by developing intelligent control systems for automated machines in various fields such as manufacturing, medicine, energy management, and agriculture. Research works carried out by AAS are mainly based on motion control, open system, machine vision and artificial intelligence technologies. Some of the current and previous projects of AAS can be described as follows.

先進オートメーションシステム研究グループ（AAS）はNECTECの研究グループの一つです。AASの主な目的は、NSTDAの研究開発方針に基づいて、生産工場、医薬品、エネルギーマネジメント、オープンシステム、マシンビジョン、人工知能技術など様々な分野における自動機械のための知的制御開発することです。近年のプロジェクト内容例は以下のとおり。

<u>Manufacturing industry</u>

Controller for Computer Numerical Control (CNC) Machine
Vision-based inspection system
Optimization software for metal cutting process

<u>Medicine</u>

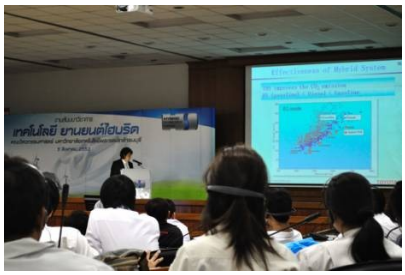
Eye tele-analyzer system
Intelligent prosthetic knee

<u>Energy management</u>

Inspection robot for power generator

***For this volume, we shall introduce only one laboratory and will continue to introduce other laboratories in the following volumes of TAIST Newsletter.***
今号では１つの研究室を紹介しましたが，次号以降他の研究室もご紹介いたします。

## Academic Seminar by Toyota Motor (Thailand) Co., Ltd at KMUTT

Toyota Motor (Thailand) Co. Ltd, held academic seminar called “Toyota Technology Hybrid Cars” on 5 August 2010 at King Mongkut’s University of Technology Thonburi

(KMUTT). The objective of this seminar is to transfer knowledge and deep information on Technology Hybrid car which currently has big impact to energy stability and air pollution to public.

トヨタ自動車タイランドは，2010年8月5日にKMUTTにおいて「トヨタテクノロジー　ハイブリッドカー」というタイトルでセミナーを実施しました。このセミナーは，近年エネルギーの継続性や公害問題に大きな影響のあるハイブリッドカーについての情報を提供することを目的としており，TAISTプログラムからは30名以上の学生，タイの大学教授等が参加しました。

Around 30 students and Thai professors from TAIST-Tokyo Tech participated in this seminar. “Growth of Hybrid car system and big changes to world car society” and “Toyota Hybrid system” lectured by Mr. Kentaro Tomo, project manager of system planning for Hybrid car, expert of hybrid system and “Durability of Toyota Hybrid system and battery” lectured by Mr. Masanori Ito, assistant manager of battery development system department, expert of battery system.

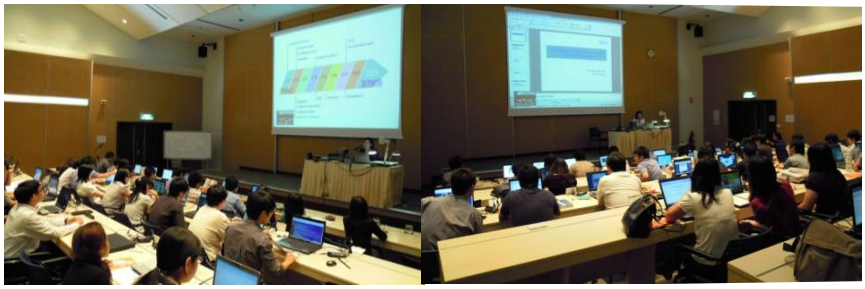
Working with engineering departments of three leading universities in Thailand; Chulalongkorn University; Chiangmai University and KMUTT, Toyota Motor (Thailand) Co.Ltd provides the university students, professors and staff with information and knowledge on developing the hybrid system to deepen their understanding about the system.

トヨタ自動車タイランドでは，チュラロンコン大学，チェンマイ大学そしてKMUTT等と協力し，教員，学生及び大学職員に開発やハイブリッドシステムについての理解を深めるための情報・知識を提供しています。

Toyota Motor (Thailand) Co.,Ltd launched Hybrid car to market in Thailand since August 2002 with Camry Hybrid. It got well acceptance in term of energy saving technology with good capability of driving and friendly environment. Currently Toyota Hybrid car has sold more than 2.7 million cars worldwide.

**Source:** www.posttoday.com on August 2010 (translated from Thai)

## TAIST with library training　　TAIST学生への図書館利用講習



TAIST Tokyo Tech has invited the official from Science and Technology Knowledge Services (STKS) to describe the information

related to library service, searching and downloading articles, titles and authors from website to TAIST's newcomer students both Automotive Engineering (AE) and Information and Communication Technology of Embedded System (ICTES) program on 23 June 2010 at Sirindhorn Science Home.

科学技術情報サービス（STKS）のスタッフを招き，2010年6月23日，TAIST Tokyo Techの新入生を対象とした図書館サービス，記事の検索・ダウンロード，ウェブからのタイトル・著者の調べ方についての説明会が実施されました。

The objective aim to give the students can use benefits from NSTDA library effectively. Students know how to find the information from available sources.

これは，学生がより効果的にNSTDAの図書館を活用できるようにすることを目的としています。学生たちは，情報源の中から必要な情報を探すことを学びます。

There are 9 services from NSTDA library consisting of

1) information service books, magazine service database online for research such as IEEE, ACM, Web of Science, H.W. Wilson, Pro Quest Dissertation & Theses, ABI/Inform, Science Direct)
2) Answering and help Searching service
3) Computer service for research
4) Space for reading service
5) Wireless service
6) Emergency information service
7) STKS delivery
8) Novel books and magazine service
9) Information searching Training

For more information, please visit website : http://stks.or.th

## Performance of Graduated Students' Posters
## 卒業生のポスター発表内容

*Mr.Manop Masomtop, AE#1*

***Research Topic:*** *Co-Axial conducting Material for Solid Oxide Fuel Cell*

***Abstract:*** Solid Oxide Fuel Cells (SOFCs) have attracted a number of researchers due to their efficiency as alternative energy devices. Studies have been conducted to investigate different components of the SOFCs to improve the performances. Current collecting wires are the components which have affected the overall performance. Since SOFCs are normally operated in the temperature range of 700-1000°C in dual atmospheres, the wiring mate-

rial must be able to function at this condition. Currently, the material used to make the wires is platinum because of its high electrical conductivity, high melting point and oxidation resistant. However, platinum is expensive, especially for the practical operation of SOFCs. Silver could be an alternative choice due to its very high electrical conductivity. Nevertheless, the melting point of silver is rather low (900 - 960°C). In this thesis, modified current collecting wires, Ag_4625, Ag_4968, Au_4625 and Au_4968, have been used in the temperature range of 100-1000°C. Their conductivity curves have demonstrated higher performances in comparison with the systems employing Pt and gold wires. In addition, the cost is reduced approximately 800-1000 times from that of the traditional material used.

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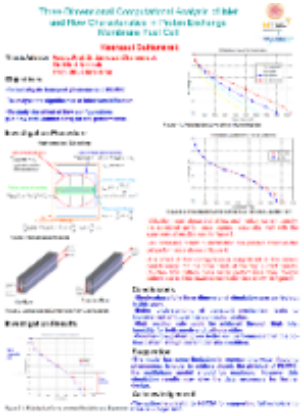
***Research Topic:*** *Three-Dimensional Computational Analysis of Inlet and Flow Characteristics in Proton Exchange Membrane Fuel Cell*

*Mr.Keerasut Suttanaruk, AE#1*



***Conclusion:*** Single phase fully three dimensional simulation was carried out in this work. Better understanding of transport mechanism leads to improvement of future interconnector design. High reaction rate could be achieved through high inlet humidity for both anode and cathode sides. Counter-flow pattern gives better cell performance than the co-flow pattern at high current density condition.

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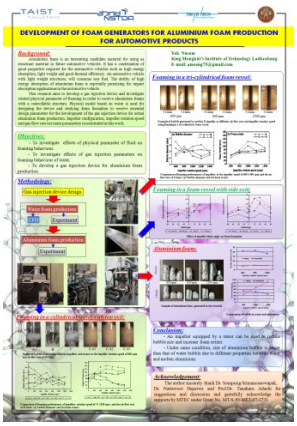
*Mr.Yok Nusom, AE#1*

***Research Topic:*** *Development of foam generators for Aluminium foam production for Automotive products.*




***Background:*** Aluminium foam is an interesting candidate material for using as structural material in future automotive vehicles. It has a combination of good properties required for the automotive vehicles such as high energy absorption, light weight and good thermal efficiency. An automotive vehicle with light weight structures, will consume less fuel. The ability of high energy absorption of aluminium foam is especially promising for impact absorption applications in the automotive vehicle. This research aims to develop a gas injection device and investigate related physical parameter of foaming in order to receive aluminium foams with a controllable structure. Physical model based on water is used for designing the device and studying foam formation to receive essential design parameters for the development of the gas injection device for actual aluminium foam production. Impeller configuration, im-

peller rotation speed and gas flow rate are main parameters concentrated in this work.

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***Research Topic:*** *Effect of Butanol-Diesel-Blended Fuel in common rail diesel engine.*

*Mr.Sakda Thongchai, AE#1*


***Abstract:*** The present study evaluated feasibility of using butanol to be blended with diesel called "BDx" blended without any emulsifier or additive to observe solubility and stability. Relevant physical and chemical properties were measured and compared to the specification of Thai diesel. Then, butanol-diesel blends were tested with unmodified common rail engine in order to assess engine performance, fuel consumption and emissions, with comparison to commercially available diesel in the market. The physical/chemical properties of the blends revealed acceptable values except flash point; whereas, the engine testing results suggested that BD15/20 can be used in common rail diesel engine without any modification. Nonetheless, if BDx were higher than BD15/20, it would deteriorate engine performance and fuel consumption.

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***Research Topic:*** *Study on Parameters affecting Springback of Forming Advanced High Strength Steel Sheets (AHSS)*

*Mr.Watcharapong Sirigol, AE#1*


***Introduction***: Recently, advanced high strength steels (AHSS) such as dual phase steels are becoming widely used in many applications in place of mild steels, especially in automotive parts manufacturing, owning to its light weight, high strength and good formability.

However, the unavoidable obstacle of AHSS sheet metal forming is springback, which is referred to as the geometry changes of a part after tool removal.

In this study, the adjustment of die geometry and process parameters used to investigate an influence of springback behavior by using U-shape tooling. Consequently, die design guideline and shape fixation techniques know how to use the suitable process parameter to reduce springback systematically.

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*Ms. Rawikarn Supparachyothin, ICTES#1*

***Research Topic*:** Development of an Eye Tracking System for Ophthalmic Diagnosis, Treatment and Surgery

***Abstract:*** This research is about the development of a real time eye tracking system that helps the ophthalmologists to perform more convenient diagnosis, treatment, and surgery. The position of the patient's pupil is propose to detect in real time by applying image processing techniques to the video sequence of eye operating process and use the positional information to control the microscope position to track the eye. In this way, stabilized views of the moving eye are obtained and provided to ophthalmologists and their assisting nurses. The challenge of this work is the patient's eye is detected harder than normal eye due to some disorder of ciliary body, lens, retina, sclera, and iris.

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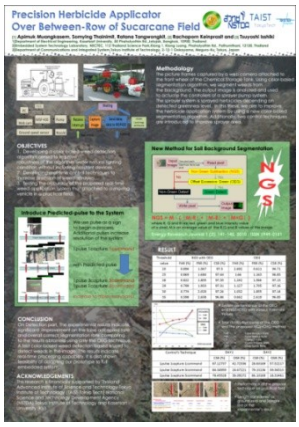
*Mr. Apimuk Muangkasem, ICTES#1*



***Research Topic:*** *Precision Herbcide Applicator over between-row of sugarcane field*

***Methodology:*** Using color-based segmentation algorithm, we segment weeds from the background. The output image is analyzed and used to actuate the controllers of a sprayer pump system. The sprayer system is sprayed herbicides depending on detected greenness level. In this thesis, we aim to improve the herbicide application system by using a new color-based segmentation algorithm. Additionally, two control techniques are introduced to improve sprayer area.

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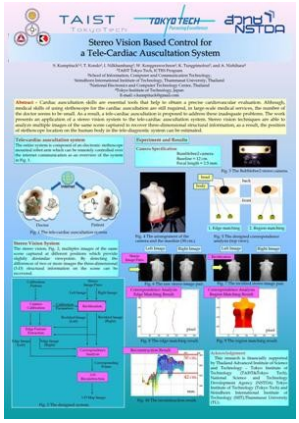
*Ms. Supawan Kumpituck, ICTES#1*



***Research Topic:*** *Stereo Vision Based control for a Tele-Cardiac Auscultation System*

***Abstract:*** Cardiac Auscultation skills are essential tools that help to obtain a precise cardiovascular evaluation. Although, medical skills of using stethoscope for the cardiac auscultation are still required, in large-scale medical services, the number of the doctor seems to be small. As a result, a tele-cardiac auscultation is proposed to address these inadequate problems. The work presents an application of a stereo vision system to the tele-cardiac auscultation system. Stereo vision tech-

niques are able to analyze multiple images of the same scene captured to recover three-dimensional structural information, as a result, the position of stethoscope location on the human body in the tele-diagnostic system can be estimated.

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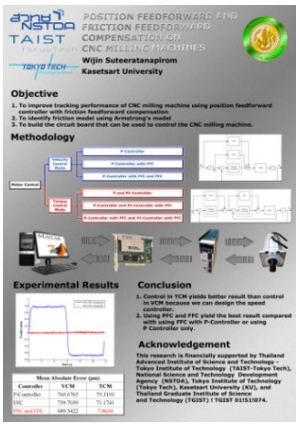
***Research Topic:*** *Position Feedforward and Friction Feedforward Compensation on CNC (Computer Numerical Control) Milling Machines*

*Mr. Wijin Suteeratanapirom, ICTES#1*




**Conclusion:** To improve tracking performance of CNC milling machine using Position Feedforward Controller (PFC) with Friction Feedforward Controller (FFC) compensation found that by controlling in Torque Control Mode yields better result than controlling in Velocity Control Mode because we can design the speed controller. Additional, using PFC and FFC yield the result compared with using FFC with Propositional Controller only.

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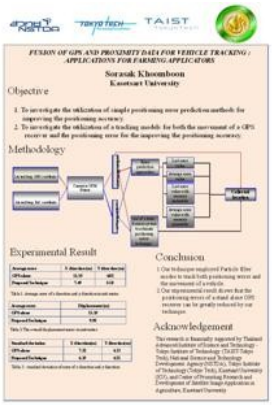
*Mr. Sorasak Koomboon, ICTES#1*

***Research Topic:*** *Fusion of GPS and Proximity data for Vehicle Tracking: Applications for farming applicators*




***Objective:*** To investigate the utilization of simple positioning error prediction methods for improving the positioning accuracy and to investigate the utilization of a tracking models for both the movement of a GPS receiver and the positioning error for the improving the positioning accuracy.

***Conclusion:*** Employing Particle filter modes to track both positioning errors and the movement of a vehicle. The experimental result shows that the positioning errors of a stand alone GPS receiver can be greatly reduced.

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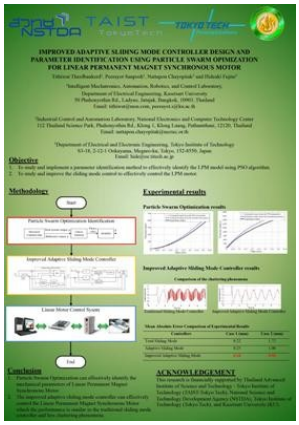
*Mr. Tithiwat Therdbankerd, ICTES#1*

***Research Topic:*** *Improved adaptive Sliding mode controller design and parameter identification using particle swarm optimization for Linear permanent magnet synchronous motor*




***Conclusion:*** Particle Swarm Optimization can effectively identify the mechanical parameters of Linear Permanent Magnet Synchronous Motor. The improved adaptive sliding mode

controller can effectively control the Linear Permanent Magnet Synchronous Motor which the performance is similar to the traditional sliding mode controller and less chattering phenomena.

**********

*Mr. Phayong Sornsiriaphilux, ICTES#1*

***Research Topic:*** *Data Compression in Wireless Sensor Network with Centralized Messaging*

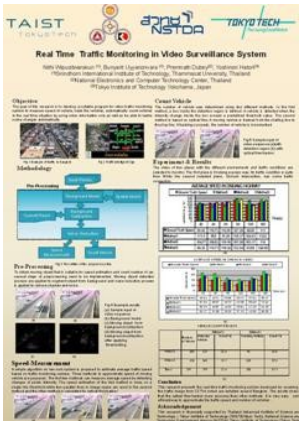
***Objective:*** To study the performance of proposed data compression in order to reduce memory requirement on a base station node in wireless sensor network, to reduce available redundancy in spatial, temporal and spatiotemporal domain among the sensor data in a buffer compared to uncompressed data, to reduce amount of data in data packet of source wireless sensor node prior to transmission to destination wireless.


**********

*Mr. Nithi Wipusitwarakun, ICTES#1*

***Research Topic:*** *Real Time Traffic Monitoring in Video Surveillance System*

***Conclusion:*** This research presents the real-time traffic monitoring system developed by receiving the traffic image from CCTVs which are installed around Bangkok. The results show that the optical flow tracker more accuracy than other methods. It is very easy yet efficient way to approximate the traffic speed and number of vehicles.

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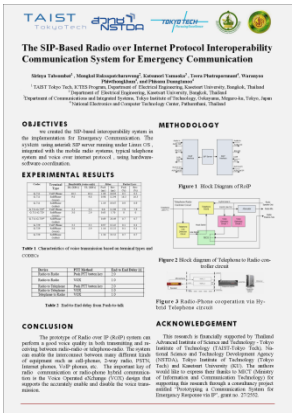
*Ms.Sirinya Tabsombat, ICTES#1*

***Research Topic:*** *The SIP-Based Radio over Internet Protocol Interoperability Communication System for Emergency Communication*

***Conclusion:*** The prototype of Radio over IP (RoIP) system can perform a good voice quality in both transmitting and receiving between radio-radio or telephone-radio. The system can enable the interconnect between many different kinds of equipment such as cell-phones, 2-way radio, PSTN, Internet phones, VoIP phones, etc. The important key of radio communication or radio-phone hybrid communication is the Voice Operated eXchange (VOX) design that supports the accurately enable and disable the voice transmission.



## Graduated Students' impression to TAIST-Tokyo Tech
## 卒業生のTAIST-Tokyo Techへの印象

**Name:** Mr.Kobkrit Viriyayudhakorn

**From:** 1st batch of ICTES Program

**Impression:** "The TAIST Tokyo Tech program has provided me the great opportunities and supports to elevate my skills, knowledge and thoughts by the world class professors and researchers."

**Research Topic:** Translation and Synonym Pairs Extraction in Health-Related Web Documents

**Name:** Mr.Sumeth Yuenyong

**From:** 1st batch of ICTES program

**Impression:** "Overall I like the TAIST program, even though it's difficult to study through video conference and the work can be very hard sometimes. The professors are kind to students and the co-lecturers are quite helpful. I have enjoyed my time in this program, made many friends learned a lot of new things. On final note, I would like to say "Thank you TAIST-ICTES".

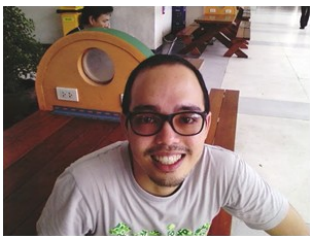
**Research Topic:** Automatic Heart Sound Analysis for Tele-Cardiac Auscultation.

**Name:** Mr.Konlakorn Wongpatikasaree

**From:** 1st batch of ICTES program

**Impression:** "I would like to thank you all supporters at TAIST-Tokyo Tech for the great opportunity to study this ICTES program. It was fortunate for me to have excellent professors and friends. I was so lucky to have a good time during two years at TAIST-Tokyo Tech."

**Research Topic:** Speech Synthesizer for Thai Text-to-speech (ITS) system on embedded device.



**Name:** Mr.Chaiwat Suwansaroj

**From:** 1st batch of ICTES program

**Impression:** **"**Good opportunity to work and study with 3 parties among NSTDA, Thai Co-lecturers and Japanese Professors. TAIST makes me have a good friends and improve myself. Thank you TAIST."

**Research Topic:** Design and development of ECG paper conversion prototype.

**Name:**Ms.Arunee Ratikan **From:**1st batch of ICTES program

**Impression:**“ I gratefully thank to supporters of TAIST-Tokyo Tech that give me a chance to study in ICTES program. In this scholarship, all teachers make me receive valuable knowledge. Moreover, I have many good friends both SIIT and KU. *Without* the support of TAIST-Tokyo Tech, I cannot study in Master Degree.”

**Research Topic:** Text analysis for Thai Text-To-Speech system mobile device.

**Name:** Mr.Itthi Sa-nguandee **From:** 1st batch of ICTES program

**Impression:** “I think this program is a very good. Thai students have a chance to study with Japanese professors. The advice from all professors gave me is not only useful in my research but also in my daily life. When I have a problem, all staff are willing to help me in various ways. My classmates are very friendly and there is a great atmosphere in the classroom.”

**Research Topic:** Rainfall Estimate in Thailand using FY2-C Satellite Data.

**Name:** Mr.Tithiwat Therdbankerd **From:** 1st batch of ICTES program

**Impression:** “Learn at TAIST - ICTES make me proficient in technology and fulfill my dream of a master's degree.”

**Research Topic:** Improved adaptive sliding mode controller design and parameter identification using particle swarm optimization for linear permanent magnet synchronous motor.

**Name:** Mr.Pariwat Wongsamran **From:**1st batch of ICTES program

**Impression:**“ The ICTES program enables me to knowledge of cutting edge technology in mastering embedded system significantly. I am truly impressive that this is a co-created program by the world class institutions as well as closely hands on experiencing with many professional in leading national research and development agency. Finally, I am proud to say that this is the first and only program that suitable for who wants to be a master in embedded system industry. Thank you very much for a good opportunity to study here.

**Research Topic:** Wireless Dam Environmental Monitoring System.

**Name:**Mr.Keerasut Suttanarak **From:**1st batch of AE program

**Impression:**“ TAIST – Tokyo Tech fulfilled in my knowledge not only in course work but also in the research methodology. Moreover they provided great opportunity for seeing in the world class of Automotive Engineering”

**Research Topic:** Three-Dimensional Computational Analysis of inlet and Flow characteristics in Proton Exchange Membrane Fuel Cell.

**Name:**Mr.Manop Masomtob

**From:**1st batch of AE program

**Impression:**“ TAIST-Tokyo Tech provides me with high knowledge which can implement in real work, have opportunities to conduct the research with leading researchers, Thai professor and Tokyo Tech' s professors in Japan and got many good advices. I always have the opportunities to practice English in international environment.

Furthermore, this program provide a chance to study PhD in Japan and to work with leading organizations in Thailand. From my perspective, it is worthwhile to have a chance to study this program although I used to graduate master degree in mechanical engineering previously.”

**Research Topic:** Co-Axil Conducting Material for Solid Oxide Fuel Cell

**Name:**Mr.Sakda Thongchai

**From:**1st batch of AE program

**Impression:**“ I am so proud that I have a chance to participate in TAIST-Tokyo Tech. I am very impressed with Tokyo Tech’s and KMITL’s professors, NSTDA researchers, and TAIST-Tokyo Tech staffs. They give me good helps and advices very well. Especially, MTEC researcher, who is my advisor, has not only given me many advices but also fostered me very kindly at anytime and anywhere. If I do not get any supports from them, I can not get successful like this. Thank you indeed again”

**Research Topic:** Effect of Butanol-Diesel-Blended Fuel in Common Rail Diesel Engine

**Name:**Mr.Watcharapong Sirigool

**From:**1st batch of AE program

**Impression:**“this project provides funding for people who are interested in automotive engineering. Japanese professors can pass on knowledge in several fields that is greatly interesting for me. TAIST Tokyo Tech program makes me very impressive”

**Research Topic:** Study on Parameters Affecting Springback of forming of Advanced High Strength Steel Sheets (AHSS).

**Name:**Mr.Yok Nusom

**From:**1st batch of AE program

**Impression:**“ I had been a great time during studying in TAIST Tokyo Tech Program because I had achieved new knowledge and new technology. Moreover, I have new friendship and good social in the classroom. However, I would like to thank to NSTDA and MTEC that given me the full scholarship and research supporting for master degree in automotive engineering program.”

**Research Topic:** Development of Foam Generators for Aluminium Foam production for Automotive products

These are just some part of our TAIST-Tokyo Tech achievement. Many of them got scholarship to further Doctoral Degree at Tokyo Tech or officially Tokyo Institute of Technology and Japan Advanced Institute of Science and Technology or JAIST in Japan.

***And you would like to be our part of TAIST-Tokyo Tech like them?***

# List of Supporting Members for TAIST Tokyo Tech

TAIST賛助会会員企業様一覧

| | |
|---|---|
| Nissan Technical Center South East Asia Co.,Ltd. (NTCSEA)<br>www.**nissan**-global.com | Fujikura Management Organization Thailand (FMOT)<br>www.**fujikura**.co.jp |
| ISUZU Group Foundation<br>www.**isuzu**-tis.com | Asahi Glass Co.,Ltd. (AGC)<br>www.**agc**.co.jp |
| Mitsubishi Electric Corporation<br>global.**mitsubishielectric**.com | Akebono Brake Industry Co. Ltd.<br>www.**akebono-brake**.com |
| Toyota Motor Thailand Co., Ltd.<br>www.**toyota.co**.th | PTT Exploration and Production Public Co.,Ltd.<br>www.**ptt**ep.com |
| PTT Aromatics and Refining PLC.<br>www.**ptt**ar.com | IRPC Public Co.,Ltd.<br>www.**irpc.co**.th |
| PTT Chemical Public Co.,Ltd.<br>www.**ptt**chem.com | Teppratarn Kanrae Co.,Ltd.<br>www.**wenggroup**.com |
| Thai Caprolactam Pub.,Co.,Ltd. (UBE)<br>www.**ube**.co.th | Showa Denko K.K.<br>www.**sdk**.co.jp |
| Hitachi, Ltd.<br>www.**hitachi**.com | |

(order of application to be member)

Acknowledged our supporting members:




**Fujikura Management Organization Thailand (FMOT)**

President Messages: "Fujikura (Thailand) Ltd. has been providing a various kind of wire & cable assemblies since 1984. All of our activities are based on the "Customers' Satisfaction" as the top priority. And we are looking for not only company's prosperity but also our employees' happiness for the sake of contribution to the society. As the certification of ISO 9001, it shows our strong point on the combination of Marketing, Design, R&D, Cable production and its assembly at the best quality. And the certification of ISO 14001 also shows our good harmonization to a natural environment."

FMOT has many types of product consisting of Interface Assembly, Wire Assembly, Flexible Flat Cable, metal dome switch, Thermal Solution Assembly and Bulk Cable. It has branch in America, Asia, Europe and Thailand. For more information, please visit www.fthai.fujikura.co.th

**Asahi Glass Industry Co.,Ltd. (AGC)**

Asahi Glass takes pride in the world-class level of our core technologies, glass and fluorine chemistry. Focusing on our flat glass, automotive glass, display glass, electronics & energy, and chemicals divisions, we have achieved a business portfolio that balances stability and potential for growth, allowing us to enjoy top global shares in a number of product fields. It has many types of product comprising of Glass, Electronics, Chemicals, Automotive Glass, Electronics & Energy, Lucina and ASPEX.


The example of one type of AGC's product is ASPEX stands for the Asahi Glass Schizosaccharomyces pombe Expression System, a protein production system using fission yeast. Highly efficient expression can be realized for various proteins by the combination of fission yeast Schizosaccharomyces pombe and unique vector systems developed by Asahi Glass. Information sourced from www.agc.co.jp

**IRPC Public Co.,Ltd.**

IRPC is a pioneer in integrated petrochemical industry in the South East Asia. Its refinery and petrochemical complexes

are situated on its own industrial estate on the Eastern coast of Thailand in Cheong Nern district, Rayong Province. Besides basic utilities, there are supporting facilities such as deep-sea port, tank farm and power plant.

The refinery capacity of the Company's refinery is 215,000 bbl per day which is the third in term of local capacity. Petroleum products from the refinery consisted of various kinds of refined oil, lube base oil, asphalt and other by-products. In addition, naphtha which is part of the refining product can be used as raw material for olefins and aromatic products. These in turn become the raw material for downstream petrochemical products and sell to plastic converters. Information and picture from www.irpc.co.th. Additional information, please visit website.




***"We continue to introduce other supporting companies in the following volumes of TAIST Newsletter."***

この他の企業様については，次号以降のニューズレターで引き続き紹介いたします。

Column

## TAIST Tokyo Tech responds to Urgent Needs for Higher Level Education

### 9 years of Compulsory education and 6.3.3.4 system

The formal educational system in Thailand composes of 12 years of basic education, and higher education. Basic education is divided into 6 years of primary education (compulsory), 3 years of lower-secondary (junior high school: compulsory), and 3 years of upper-secondary (high school) levels. The primary education aims to provide basic knowledge and abilities. For secondary education, it aims to reinforce all knowledge, abilities and skills, and further more to enable students to advance according to their own aptitudes and interests for higher education.

### Academic or Vocational tracks from the Upper secondary education

The upper secondary education divided into academic and vocational tracks. In academic tracks, there are 3 fields – "Sciences-Mathematics", "Arts-Mathematics" and "Arts-Language" fields – for students to choose from their interests. The vocational track consists of two levels – vocational certificate and high vocational certificate (Diploma). Vocational

certificate can be earned after 3 years from lower secondary study. Then, high vocational certificate can be earned after 2 years from vocational study. The vocational schools offer more than 30 programs that prepare students for employment or further studies.

**Admission to University by National Entrance Examination**

Admission to university is through an entrance examination. The bachelor's degrees level aims to promote especially the ability to apply theories to practices for academic and professional development. Normally, it takes 4 years in undergraduate level. Some students pursue their study in graduate school to enhance their specialized knowledge and skills; analytical and synthetical capability.

**Effect and Importance of advice by parent**

Parental role is very important for school age children. Parents can grant some vital advices in choosing the field of study, solving problems, and sharing experiences. However, parents' advices affect children in many ways. Instead of forcing children to do so, parents may provide them the reasonable suggestions. Some parents may agree with taking extra tutorial class not only academic subject but also usage of the second language.

**Needs for higher level Scientists and Engineers**

The availability of career for student who finished high school is very limited. Nevertheless, the labor market for a graduate is quite vast. The qualification is a significant point for hiring. This means that it depends on personal skills and abilities, field of study, employment rate, and economy situation. Because a number of students have become to obtain bachelor's degree currently, competitive rates are relatively high as a results. The higher education could provide not only a good qualification and opportunity of the personal fulfillment, but also contribute to enhance economical situation of the country as well.

**"TAIST-Tokyo Tech" promotes higher level Human resources development**

**"TAIST- Tokyo Tech"** provides two graduate programs those are Automotive Engineering (AE) and Information and Communication Technology for Embedded System (ICTES). All curriculums are conducted in English and also focus on "Student Oriented" principle in Japanese way of studying, encouraging students' personal qualities by creating new ideas and exploring things for themselves. Every academic year, scholarships had been granted by NSTDA. **"TAIST- Tokyo Tech"** has a plan to add an Environmental Engineering (EnvE) program in the near future to contribute human resources development in science and technology field further.

Dr. Dumrongkiat Ratana-Amornpin
Manager, Tokyo Tech Office (Thailand)
Director of Master of Business Administration program (Industrial Management), TNI

## 情報/Information

TAIST Tokyo Tech 拠点/ Bases of TAIST Tokyo Tech

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Ms. Chayanan: **chayanan@nstda.or.th** Phone: 66-2-564-8017 FAX: 66-2-564-8019

東京工業大学タイオフィス：Tokyo Tech Office (Thailand)
**http://www. ttot.ipo.titech.ac.jp/index.html**
P-205 Thailand Science Park, 111 Phaholyothin Rd., Klong 1, Klong Luang, Pathumthani 12120 Phone: 66-2-564-8016(or 8018) FAX: 66-2-564-8019
Ms. Krittaya: mail to: **krittaya@titech.in.th**
Ms. Chanya: mail to : **chanya@titech.in.th**

## TAISTプログラム運営委員会構成/ Steering Committee for TAIST in Tokyo Tech

| | |
|---|---|
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