

Dean's Report 2011

The past year has been another one in which there has been much that is cheering to report.

Honors Programs

In February, the Institute for the Promotion of Teaching Science and Technology (IPST) was granted by the cabinet to expand the Development and Promotion of Science and Technology Talents (DPST) project. The DPST project gives scholarship with full financial support for talented students to study science until their Ph.D. The project has become part of its routine work, meaning that the IPST will get financial support from the government annually. In June, an invited letter, asking SUT to be a new center for the DPST project in the lower northeast region, was sent to our rector. Thanks to the rector's vision and quick decision to bring the issue right away to the university council meeting. It was the top down policy. This helps the institute to initiate the opening of undergraduate honors programs in basic science. We have now finished the process of recruiting the first batch students. All together, there are 53 students intending to study with us by signing contract and/or paying fee. Out of these students, eighteens get the DPST scholarships, twelves get the SUT scholarships for H.M. the King 84th birthday, twenties get the SUT scholarships for Science quota and threes will support themselves, by their parents of course. Some of these students will continue to pursue their M.Sc. and Ph.D. study with us. So it is important for us to live up with their expectation. It has been always pleasing when students or their parents, coming for the interview or signing contract, mention that they choose our programs because they know that our science programs are very strong. Of course, we are! That may be their complement but the scholarships do help attract bright students. It is also interesting to note that out of 684 students, who applied and took the competitive exam for the H.M. the King 84th birthday scholarships, 334 students passed the minimum setting criterion at the T-score of 40%. Looking into more details, we found that 88 qualified students chose our honors programs as their first choice, 67 as their second choice and 70 as their third choice. These mean that 225 out of 334 students chose our honors programs. Digesting into each honors program, we found that 46 students chose biology as their first choice, the highest number among 31 undergraduate curricula in SUT. The number of students choosing Chemistry, Mathematics and Physics were 20, 12 and 10, respectively, which are not bad numbers comparing to other undergraduate programs. In fact, they look very good. However, only 12 scholarships are allocated for the honors programs, threes for each program.

The reason we have been chosen by the IPST to be the lower northeast center of the DPST project is that we are strong in research and our graduate programs are successful even though we do not have undergraduate programs in

basic science at the moment. The IPST decision did really upset Ubon Ratchathani University administrators since they already have undergraduate programs in basic science and this would make them in a better position than us. In fact, before the decision was made, our institute and the Faculty of Science, Ubon Ratchathani University had to show visions about the programs to the board of the IPST.

This is the only chance to open undergraduate programs in basic science with almost all students get some kinds of scholarships, which means that we will get high quality students to study with us. We will not take many students for our programs. We will concentrate on quality rather than quantity and it seems we are heading into that direction. The curricula of our honors programs in biology, chemistry, mathematics and physics have almost completed. Hopefully, they will all be approved by the academics senate at the end of January and the university council at the end of February.

Due to the honors programs, we have got eight more positions opened for our faculty members, two for each school. It is also important for us to be exceptional among research universities by dedication to undergraduate education in honors programs. We will continue to do our best to support our faculty and to recruit exceptionally talented researchers and educators to our institute.

Education

In academics year 2010, 32 Ph.D. and 16 M.Sc. students have completed their degrees. Twenty one Ph.D. degrees and nine M.Sc. degrees were entitled to join the commencement ceremony on November 1st.

As of the 3/2010 trimester, 188 Ph.D. and 117 M.Sc. students have graduated from our institute since we started the programs in 1996. At present, we have 211 Ph.D. and 79 M.Sc. students studying with us. Our graduate students have long played important roles in reinforcing an excellence in research of our institute. Last year, about ten of our Ph.D. students did go to other well-known institutions abroad for a period of time to do their research. A number of our graduate students received awards in various occasions according to their performance in either study or research, for example, an award for outstanding presentation of their research works.

At undergraduate level in sport science, thirteens were graduated and joined the commencement ceremony in November with one achieved 1st class and one achieved 2nd class honor. Considering as a young curriculum, only two batches of students having graduated, our sport science program has put its name in the sport science arena. The curriculum has provided our students strong science bases for studies through participating in and supporting a variety of programs designed to create active, student-centered learning environments inside the classroom. As a result, two teams of our sport science students won second places in the *Sport Science Innovation Contest 2011*, organized by the Ministry of Tourism and Sports. The first was the *Wheelchair for Exercise &*

Recovery for Elderly and the other was the *Office Exercise Chair*. Consequently, one of the students from the teams was selected by SUT to receive a scholarship from the Council of University Presidents of Thailand (CUPT) in 2011. The scholarships were given to students who made creative work from their study, only one scholarship for each of 27 universities which are members of the CUPT. In addition, two sport science students were selected to go to Malaysia for four months for their cooperative education and career development course in 2011.

Research

On the research side, as always, our faculties have made significant contributions in research. During the past 7 years, faculty members of the Institute of Science of fewer than 72 produced more than 400 publications in ISI database (with more than 3000 citations), resulting in *h*-index of 26.

The number of publications in 2011 was 97 in the ISI database, including the accepted and in press articles. Several notable research works deserved additional mention here are as follows:

Three research works which were selected to appear on journal front covers are

- (1) Changes in vasoactive intestinal peptide and tyrosine hydroxylase immunoreactivity in the brain of nest-deprived native Thai hen (Assoc. Prof. Dr. Yupaporn Chaiseha (Biology)) in *General and Comparative Endocrinology* (*IF* = 2.732)
- (2) Electron Transfer between Genetically Modified *Hansenula polymorpha* Yeast Cells and Electrode Surfaces via Os-complex modified Redox Polymers (Assoc. Prof. Dr. Albert Schulte (Chemistry)) in *CHEMPHYSICHEM* (*IF* = 3.453) and
- (3) Dopamine and Mesotocin Neurotransmission during the Transition from Incubation to Brooding in the Turkey (Assoc. Prof. Dr. Yupaporn Chaiseha (Biology)) in *Hormones and Behavior* (*IF* = 3.991).

In addition, 2 articles which were published in journals from Science and Nature publishing groups with very high impact factor are

- (1) Creation and Control of a Two-Dimensional Electron Liquid at a Bare SrTiO₃ Surface (Dr. Worawat Meevasana and Assoc. Prof. Dr. Prayoon Songsiririthigul (Physics)) in *Nature Materials* (*IF* = 23.132) and
- (2) From a Single-Band Metal to a High-Temperature Superconductor via Two Thermal Phase Transitions (Dr. Worawat Meevasana (Physics)) in *Science* (*IF* = 28.103).

Lastly, two achievements not in the form of publications but recognition by their peers are

- (1) The School of Sport Science has been recognized as a role model for introducing sport science in the development of the skill for canoeing & traditional boat racing of Thailand's team for the SEA Games 2011 in Jakarta, Indonesia. As a result, the Thailand team got 8 gold, 7 silver and 11 bronze medals in comparison with the previous SEA Games in which the team got only 1 gold medal in the boat racing. In addition, Assoc. Prof. Dr. Damaras Darasak was invited by the Thailand Paralympic Committee Foundation to be the deputy leader of the Thai Paralympic team for the 6th ASEAN Para Games 2011 in Solo, Indonesia.
- (2) SUT has been admitted to be the latest member of ALICE (A Large Ion Collider Experiment) collaboration at CERN (European Organization for Nuclear Research) Switzerland. This will allow our theoretical physicists to get data and do the analyses. Thanks to Asst. Prof. Dr. Chinorat Kobdej for initiating and making this happen. We are now in the process of signing MOU with ALICE.

Personnel

Retirements

Two distinguished faculties, Prof. Dr. Pairote Sattayatham (Mathematics) and Assoc. Prof. Dr. Kenneth J. Haller (Chemistry) were retired. To honor their retirement, a party organized by the institute was held at Sir James Resort, Muaklek District, Saraburi, on September 16th. It was a well-attended party of over 70 participants, including members and families of our institute. The gratitude was reflected in their honor at the party. Both will continue working with us on a contract basis.

New Members

We welcome five new faculties who have joined us in 2011, including Dr. Piyada Ngernsoungnern, Dr. Ajcharaporn Thowlmhor (Biology), Dr. Chuthima Sap-im-earp, Asst. Prof. Dr. Jaruwan Siritheptawee (Chemistry) and Dr. Panomsak Meemon (Laser Technology and Photonics).

Promotions

We congratulate Dr. Yupaporn Chaiseha and Dr. Sageera Kupittayanant (Biology) for being promoted to associate professor.

Honors

Assoc. Prof. Dr. Jame R.Ketudat-Cairns has been elected as a member of the Council of Asia Pacific Protein Association.

Assoc. Prof. Dr. Sageera Kupittayanant received distinguished alumni award in academics and research from the faculty of Veterinary Medicine, Khon Kaen University.

Asst. Prof. Dr. Wilairat Leeanansaksiri received distinguished alumni award in academics and research from the faculty of Medicine, Khon Kaen University.

Events

Sino-Thai Symposium

In April 2011, SUT by the School of Physics, together with 1) the Institute of Particle Physics, Central China Normal University, China, 2) the Center of Introducing Talents for Quark Matter Physics, Ministry of Education & State Administration of Foreign Experts Affairs, China, and 3) the Key Laboratory of Quark and Lepton Physics (CCNU), Ministry of Education, China, organized the *Sino-Thai 2011 Symposium on High Energy Physics and Beyond* (STSP 2011) in Wuhan, China. Thanks to Prof. Dr. Yupeng Yan from the School of Physics for initiating and building strong research group in nuclear and particle physics in Thailand. Together with his closed collaboration with many strong research groups in nuclear and particle physics in China, the symposium was very successful. There were over 80 participants. Seventeen of these are Thais from 6 different universities in Thailand, most of which are SUT alumni under Prof. Dr. Yan's supervision. The Thailand side was led, of course, by SUT and our Rector, Prof. Dr. Prasart Suebka, himself chaired the last session and also gave a closing remark. The next symposium STSP 2012 will be organized at SUT in July, 2012.

German-Thai Symposium

Institute of Science in association with the Faculty of Engineering, Chulalongkorn University and the Synchrotron Light Research Institute (Public Organization) hosted the *German-Thai Symposium on Nanoscience and Nanotechnology 2011 (GTSNN 2011)* on *GREEN NANOTECHNOLOGY FOR THE FUTURE* from 13-16 September 2011 at the Synchrotron Light Research Institute. The symposium was one of many activities to celebrate the 150th anniversary of Thai-German relations in February 2012. More than 200 participants joined the symposium.

In 2002, the Royal Thai Embassy in Berlin launched the "Academic and Research Partnership Project" with an aim to encourage and increase academic and research linkages between universities and research institutes of Thailand and Germany. During the first three years, the projects had been focused on agricultural development and biotechnology as well as environment and renewable energy. In 2006, the Embassy started to promote collaboration on nanotechnology. The first project was carried out in 2006 with the study visit of Thai academic delegation to the government agencies, universities and research institutes as well as leading manufacturers in Munich, Nuremberg, Berlin, Dresden and Potsdam. The success of the first project in 2006 led to the organization of the first GTSNN. The German-Thai Nanoscience and

Nanotechnology Network was formed under the collaboration network consisting of Suranaree University of Technology, Chulalongkorn University, Kasetsart University, Chiang Mai University, Naresuan University, Mahidol University, Khon Kaen University, Burapha University, National Nanotechnology Center (NANOTEC), National Electronics and Computer Technology Center (NECTEC), National Metal and Materials Technology Center (MTEC) and Synchrotron Light Research Institute (SLRI).

Training Teachers

In 2010, Dr. Khunying Kalaya Sophonpanich, the Science Minister, initiated a project for training science teachers on the topic of “*Frontier Science and Technology*.” The trial project was very successful as mentioned in the Dean’s Report 2010. The model of our training was expanded by the next Science Minister to train science teachers in different parts of Thailand in 2011. I thought it was a political project and would be halted after changing the Science Minister. How wrong I was! Our Institute was again asked to be the host for training teachers in the northeast areas. It was another successful, at least by number, training of 160 high school science teachers. There were more teachers attended this year than the previous year. It was organized on July 4th – 6th, 2011.

President of the University Council Visiting the Institute

In November 2011, Prof. Dr. Wichit Srisa-an came to stay at SUT due to the flooding in Bangkok and at his house in Ayutthaya province. We took this opportunity to invite him to visit our institute on November 7th, 2011. We gave him a very warm welcome. In fact, the institute committees were quite excited. Each of the institute administrators also gave a short report about what was going on for their part. Then the council president gave a very impressive talk about SUT, starting through some of the history of how he ran SUT up to our honors programs. It was a great lesson and experience to listen, learn and get comments from the SUT founder, especially for most of the institute committees who are considered being new for SUT. Even though the informal meeting went on for over two hours at the institute following on by lunch at the Starwell Bali restaurant, it seemed time passed so quickly.

Visiting Guizhou University

In April 2011, I and the institute administrators went to visit the College of Science, Guizhou University, China. The aims were to follow on from the collaboration between Guizhou University and us and to recruit more Chinese students for our graduate programs. We were successful for the first part which led to the revision of the MOU between SUT and GU. The revised MOU has been approved by the university council in November 2011. This will lead us to program development for joint Ph.D. degree with GU. I have learnt that it is not

easy for some universities to open a Ph.D. program in China, including GU. At present, there are many M.Sc. programs in the College of Science, GU, but only two Ph.D. programs. Dean of the College, Prof. Wei Wei, an alumnus of our School of Mathematics, is very interested in making the joint Ph.D. program with us so that students at GU and especially their faculties can obtain Ph.D. from us. Details of the program will be discussed with Prof. Wei Wei and representatives from GU, who originally planned to visit us in January 2012, but had to postpone due to their moving to the new campus.

We were arranged to meet about 50 students from the College of Science and the College of Life Science at GU. Some of them have very good English and were interested to study with us.

I followed our rector to GU again in August to attend the 4th China-ASEAN Education Cooperation Week held in Guiyang. The rector was invited as a keynote speaker to give a talk on “Cooperation between Thailand and China and Communication between SUT and Guizhou University.” I found that China aims to send 100,000 Chinese students to study in ASEAN country by 2020. That is something we have to deal with. How could we attract more Chinese students to study with us?

Award

A research entitled “The Quantities of Heavy Metal in Seawater at Coastal Fisheries Areas, Phang Nga Province, Thailand, after the 2004 Tsunami” by Assist. Prof. Dr. Nathawut Thanee was selected as a distinguished research work for the *Best Practice Award* at the 6th international conference on “*Toward Enhancement of Economy, Social, Technological and Environment Development for Welfare Implications in the Greater Mekong Sub-region and Asia-Pacific*” held in August 2010 in Indonesia. The award was presented at the 7th international conference held in August 2011 in Sri Lanka.

In November, the rector assigned me as an SUT representative to attend a National e-Science meeting, organized by NECTEC. During a talk given by an IBM representative from the US, she announced that SUT won a prestigious IBM Shared University Research (SUR) Award. It is a worldwide equipment award program designed to promote research in areas of mutual value and in the interest of IBM and universities. Thanks to Asst. Prof. Dr. Chinorat Kobdej, together with IBM representatives from Thailand and in the US who made a successful proposal that won the SUR award. This was the first SUR program that IBM awarded to institution in Thailand. The award includes 2 servers, GPFS software, 60 TB data storage and technical collaboration with IBM experts at Almaden Lab. The high performance computing will be used primarily for the successful completion of the *storage cloud (GPFS-Panache) for High-Energy Physics “CERN” project*, which is part of the National e-Science project.

While we were having the 1st institute committee meeting for the year 2012 on January 10th, we received a very good news that the Office of National

Research Council of Thailand (NRCT) announced the annual NRCT awards for the year 2011 and Prof. Dr. Shukit Limpijumnong was among 10 academics in the country who were awarded the prestigious NRCT Distinguished Researcher awards for the year 2011. He was awarded in the Physical Science and Mathematics category. This is the first big national academics award that SUT ever received. Each award includes an honors certificate and a money prize of 500,000 Baht. We are very happy for Prof. Dr. Shukit Limpijumnong, the School of Physics, Institute of Science and of course SUT. We will have a big party to celebrate this soon.

In addition, a *Good Ph.D. Thesis Award* for the year 2011 was given to Dr. Kanoknan Sarasamak for her Ph.D. thesis on “Enthalpy Relation between Different Phases in Representative Wurtzite Semiconductors: *Ab Initio* Calculation” under the supervision of Prof. Dr. Sukit Limpijumnong. Also a *Distinguished Ph.D. Thesis Award* and a *good Ph.D. Thesis Award* were awarded to theses supervised by Assoc. Prof. Dr. Santi Maensiri while he was at Khon Kaen University. A distinguished thesis award receives 70,000 Baht while a good thesis award receives 50,000 Baht. The School of Physics still keeps its momentum going strong.

New offices

Construction of the new academic building (C2) is almost completed. The Head of Buildings and Grounds Division said we can move in after January 16th. A conclusion from the meeting with other deans, chaired by Vice Rector for Academic Affairs on December 30th, was that the Institute of Science and the Institute of Agricultural Technology will move to the new building within two months after January 16th, so the fourth floor of the present C building can be renovated before the rainy season comes because the roof has been terribly leaking. Institute of Nursing will move from F9 building to the present C building, replacing the Institute of Science. Each new office in the new building equips with a new table and a small bookshelf. However, we can move some bookshelves from our present office with us. The fourth and the fifth floors have very good view of SUT and beyond.

Finally, I finished my first term as the dean in September 2011 and have continued my second term right after that without realizing so much about the new dean position. It has been a privilege to have been part of this extraordinary institute and I would like to thank the faculty, the staff, our students and our alumni as well as other members of SUT for all their friendship and support during my term.

Happy New Year!

Prapun Manyum
Dean, Institute of Science