AUN/SEED-Net
Engineering University Network in ASEAN and Japan

~ Collaboration and Solidarity for Mutual Prosperities in Asia ~

BRUNEI
CAMBODIA
INDONESIA
LAOS
MALAYSIA
MYANMAR
PHILIPPINES
SINGAPORE
THAILAND
VIETNAM
JAPAN
ASEAN University Network/
Southeast Asia Engineering Education Development Network (AUN/SEED-Net)

was established in 2001 and consists of 26 leading Member Universities from 10 ASEAN countries with the support of 14 leading Japanese Supporting Universities. The network conducts various academic activities with its aim that Southeast Asia and Japan will be developed sustainably through the development of innovative and highly skilled human resources in the engineering field. The project is mainly supported by the Japanese Government through Japan International Cooperation Agency (JICA).

Project Purpose & 4 Main Objectives

**Capacity Development of academic staff of Member Universities**
Scholarship and Research programs for faculty staff

**Addressing common regional issues**
Research conducted which addresses common issues in the region

**Academic networking among Member Universities in ASEAN and Japan**
Other academic activities among universities in ASEAN and Japan (e.g. organizing conferences, publicizing an academic journal, exchange of faculty staff, etc.)

**Linkage between universities and industry**
Strengthen the linkage between industrial sectors and Member Universities
Messages from Member Universities
The concept of AUN/SEED-Net is capacity development of Member Universities in research and education through strengthening the academic human network among ASEAN and Japan. In the network there are various types of roles among participating universities based on different activities. Here are a few messages from key persons of Member Universities on the advantages and merits of AUN/SEED-Net for the development of the university or the region.

Capacity Development of University with SEED-Net
Up until now, National University of Laos has had a close collaboration with the network and gained outstanding benefits as a member university with a high obtainment ratio for graduate program scholarships. Most students who received scholarships have returned to become faculty members at the university. “From their experiences studying in different cultures, our young academic staff can educate their own students to become sufficiently qualified engineers who contribute to our society and the economy,” said Dr. Boualinh Soysouvanh. Through AUN/SEED-Net’s scholarship programs for young faculty members, a reliable academic human network has been established, leading to further collaboration with member universities. This has helped National University of Laos to implement new educational programs at the graduate level. “No university can be isolated from others nowadays,” explained Dr. Boualinh. “AUN/SEED-Net offers good opportunities to connect with each other and helps raise us to an international standard.”

Dr. Boualinh Soysouvanh, Professor and Dean of Faculty of Engineering, National University of Laos, Lao PDR

ASEAN linkage flourishes through SEED-Net
As Chulalongkorn University has been an integral part of the project from the beginning, Dr. Bundhit Eua-arpon has seen the connections in the network grow and strengthen over the years. “Education is a common interest among ASEAN members, and this is one of the key successes of the project that suits the region,” he said. “It can be used as a means to link ASEAN members together more strongly, and fills the gap which was there in the beginning. It was the first time that we had such collaboration and exchange, and it really kicked off.” From his experience, what Dr. Bundhit deeply values is the reciprocal and harmonious feeling among the member universities, which is a great achievement. He comments, “AUN/SEED-Net was the starting point and I have seen the linkage between ASEAN academics flourish through this network. There is no competition or politics behind the scenes. There are mutual benefits. And this is how ASEAN should be.”

Prof. Dr. Bundhit Eua-arpon, Dean, Faculty of Engineering, Chulalongkorn University, Thailand

Alumni Relationship for Future Development
As the Vice President of Nanyang Technological University, a young but top-ranking university, Prof. Er Meng Hwa sees great value in the students’ experience studying abroad and AUN/SEED-Net is a part in the internationalization of the university. “Feedback from the students has been wonderful,” he told us. “It is a great platform for students to learn holistically. There is a huge potential to work together in the development of the ASEAN region; we produce engineers, but how to produce engineers to contribute to the economic development is a very important initiative.” Prof. Er also envisions the benefits of the alumni network, not only in terms of fund-raising, but as an important factor in the future development of the university. “We recruit top students in the ASEAN region,” Prof. Er firmly stated. “When they graduate and return to their home countries, some of them will become key persons in government or private sectors, and they can contribute back to the university. It is a long-term strategy that cannot be measured in dollars and cents.”

Prof. Dr. Er Meng Hwa, Vice President (International Affairs), Nanyang Technological University, Singapore
Voices from Supervisors of SEED-Net Students
Member Institutions or Japanese Supporting Universities accept faculty members of other members as students. The supervisor guides his or her student to conduct research activities in engineering. Here are some comments from supervisors on their experiences with the students.

**Contribution to the World through SEED-Net Human Network**
Dr. Iman Reksowardojo is currently supervising several students under SEED-Net Scholarship Programs, along with 14 students whom he supervised in the past. His supervisor role stemmed from his own experience studying abroad; he understands foreign students encountering diverse environments and languages. He believes local students also become more active studying with foreign students. “They are stimulated in the learning process,” he said. “They work together and help each other.” Also for the university itself, receiving these students makes the academic staff put more effort into developing their teaching. He agrees with SEED-Net’s strategy to produce highly qualified human resources, resulting in the improvement of the region as a whole.

*Dr. Iman K. Reksowardojo, Professor, Faculty of Mechanical and Aerospace Engineering, Institut Teknologi Bandung, Indonesia*

**Effective “Basic Knowledge” from Japan for Research Activity in ASEAN**
Dr. Kiyono Junji has accepted two SEED-Net students to his laboratory under co-supervision for PhD Sandwich Program. When he accepted these students, he paid attention to two points in particular: communication and culture. As such, their research desks were positioned between Japanese students’ ones so they could communicate freely with Japanese students. He also advised them to regularly attend seminars and individual academic sessions. Dr. Kiyono encouraged the students to join many social events with laboratory members such as parties, picnics, and so on, as he sees the importance of the customs and culture of different societies. He is eager to see the students become capable academic staff who not only have academic knowledge but also multi-cultural experience.

*Dr. Kiyono Junji, Professor, Graduate School of Civil Engineering, Kyoto University, Japan*

**Research Saved People’s Lives from Landslide**
As a supervisor to many ASEAN students under SEED-Net Scholarship Programs, Dr. Dwikorita Karnawati conducts various research projects with them, which are expected to contribute to society. For example, an early warning system for landslide hazards was developed by localizing Japanese technology into the Indonesian context. When a landslide occurred in Central Java in 2007, the system saved the lives of over 30 families.

Dr. Dwikorita emphasized that the project has benefited students, universities and the countries as a whole. “These students are regarded as future leaders who can be successful through globalization,” she stated. “The network gives my university open access to ASEAN. Through one gate, we can have it all.”

*Dr. Dwikorita Karnawati, Professor and Vice-Rector, Universitas Gadjah Mada, Indonesia*
Experiences of young faculty as SEED-Net Students

After graduation, many alumni members are now working at their respective Member Universities as a faculty member and educating their own students. According to their comments they gained many valuable experiences through studying under AUN/SEED-Net Scholarship Programs including their qualifying knowledge for better educational and research activities.

Japanese Academic Experiences Leads Next-Generation Network

Dr. Panarat Chertanomwong has been working as a faculty staff at King Mongkut’s Institute of Technology Ladkrabang after three years of PhD studies at Tokyo Institute of Technology under SEED-Net. She told us of her memorable time in Japan, “The system was well designed for gaining knowledge especially the useful process in the laboratory. I now apply the methods to educate my own students.”

Dr. Panarat is currently a supervisor for SEED-Net students at her university. “Based on its strong connection among countries in ASEAN and Japan, AUN/SEED-Net provides us many opportunities even after graduation,” said Dr. Panarat. “Without the project, the chance to have such collaboration with these countries would be rare.”

Dr. Panarat Chertanomwong, Assistant Professor, Faculty of Engineering, King Mongkut’s Institute of Technology Ladkrabang, Thailand

Number of Scholarship Awarded By AUN/SEED-Net (Total: 1,133)

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<th>Level</th>
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Remarks: Integrated Graduate Program (Combination Program for Master and Doctor) started in Phase 3

(As of Aug. 15, 2014)

Improved educational capacity with “SEED-Net family”

After graduating under PhD Sandwich Program, Dr. Kinnaleth Vongchanh is now a faculty member at National University of Laos. “We usually provide opportunities for our students to learn from research,” shared Dr. Kinnaleth. “But our budget is limited. Without the help from AUN/SEED-Net, research is hardly continued, obstructing researchers from increasing their knowledge.”

She also emphasized the solidarity of ASEAN from studying in the region.

“All graduation, I still keep in touch with friends who are now faculty members at universities,” she said. “They are always eager to support us any time we need cooperation on research and education activities. This helps me to give better educational advice to my own students. They are like my ‘SEED-Net family’.”

Dr. Kinnaleth Vongchanh, Lecturer, Mechanical Engineering Department, Faculty of Engineering, National University of Laos, Lao PDR
Collaborative Research Programs

Since the target area of AUN/SEED-Net is engineering, the network consistently makes contributions to our society through research. AUN/SEED-Net supports faculty members to conduct collaborative research with Japanese and other ASEAN universities to address common regional issues or for the advancement of technology in the industry sector.

Commercialized Output of SEED-Net Collaborative Research

In 2011, Dr. Ika Dewi Ana was awarded a collaborative research grant from AUN/SEED-Net along with her industry partner and her Japanese co-researcher under the topic of bone substitution. The dental surgery product is now being commercialized in Indonesia, but it has been a long journey. AUN/SEED-Net has helped make this project a reality. “After 10 years of research, I was told to start working with industry, which is hard to achieve,” said Dr. Ika. “AUN/SEED-Net helps us to link our research with the community, to transform the research from lab scale to industry scale.” They are now collaborating with one of the biggest pharmaceutical companies in Indonesia to manage the product. About the project, Dr. Ika said, “SEED-Net not only gives awareness to the researcher about the need of engagement with industry and the community, but also the awareness of how to be more involved in the development of the region as a whole.”

Dr. Ika Dewi Ana, Associate Professor, Director of Cooperation, Alumni and International Affairs, Universitas Gadjah Mada, Indonesia

Helping the community with Japanese industry

Dr. Tran Nguyen Hoang Hung has been awarded two back-to-back research grants in collaboration with industry since 2011. With the investment and technology from two Japanese companies, he has been able to conduct important research which contributes to the development of the local community in the Mekong Delta. By applying soil-cement mixing technology to protect earth levees against annual floods, the team were able to build local roads that help the locals to travel safely and don’t have to be repaired year after year. For Dr. Hung, the most important thing about the program is that it helped bring theoretical research to practical application. “Collaboration with industry is very important to bring the research to reality,” he said. “Convincing them to collaborate is usually not easy, and few companies are willing to support domestic research. This is why I approached Japanese companies.” Dr. Hung enjoys a good relationship with his Japanese co-researchers and hopes for further collaboration in the future with the possibility to expand the technology to other ASEAN countries.

Dr. Tran Nguyen Hoang Hung, Assistant Professor, Ho Chi Minh City University of Technology, Vietnam
3 Young Leaders in Cambodia: Sharing SEED-Net Experiences in ASEAN and Japan

Awarded both Master’s and PhD scholarships from AUN/SEED-Net, these three alumni from Institute of Technology of Cambodia are currently working for the Institute as faculty members. They are regarded as rising young leaders of the leading institute in engineering in Cambodia. Here they elaborated on their AUN/SEED-Net experiences.

What they learned through PhD Program

When asked about their experience of being exposed to foreign cultures, both in ASEAN and Japan, they all agreed that they learned a lot. “Academically, we learned the style of working and teaching. Also, we learned to be independent and confident,” said Dr. Fidero. Dr. Seingheng added, “We learned both hard skills and soft skills. For hard skills, we learned mainly about engineering, and for soft skills, we learned about their hard-working attitudes, and we also gained a lot of cooperation with our ASEAN and Japanese partners.”

How they contribute to Cambodian society

Since the ultimate purpose of AUN/SEED-Net is capacity development in order to generate sufficiently qualified human resources to make contributions to society, alumni members are expected to work as faculty members at their respective universities. Dr. Reasmey commented on the significance of working in Cambodia, “I want to share my knowledge to new generations, to help improve education in the engineering field and to conduct research.” She is conducting her educational activities to Cambodian students with knowledge and techniques that she gained in Japan, and her students have expressed their appreciation for her easily understandable lectures.

Their long-term collaboration with partners in ASEAN and Japan

Even after the completion of their studies at other member universities in ASEAN and Japan, AUN/SEED-Net provides opportunities for them to continue working with their foreign partners in academic and educational activities. "At the regional academic conferences supported by SEED-Net, not only do we present our research papers but also strengthen the academic human network," Dr. Seingheng explained. "We have a good chance to meet with a lot of people, both new faces and old. Some senior researchers have worked in this field for a long time, and through discussions with such academics, we can improve our research and educational skills.”

Their recommendation to the next generation

From their experience, they also recommend the scholarship to their students. Dr. Kuok stated, “We not only encourage them to apply but also train them on how to win the scholarship.” Dr. Seingheng and Dr. Reasmey added, “We know that SEED-Net is the best choice for us.”
◆ Collaboration with Industry ◆

Introduced in Phase 3 of the project, university - industry collaboration aims to contribute to the advancement of industry through strengthening the linkage with Member Universities via a variety of activities such as Collaborative Research with Industry, promotional activities, training, etc.

Directory for Engineering, one of Promotional Activities

◆ ASEAN Engineering Journal (AEJ) ◆

ASEAN Engineering Journal is a platform for researchers and young graduate students to publish their research papers with its concept to be a foundation of research dissemination for people in ASEAN. AEJ publishes 8 issues per year in 4 categories among 10 engineering fields.

◆ Academic Conference ◆

Regional Conference is an international academic conference held in Southeast Asia in 10 engineering fields per year. AUN/SEED-Net supports Member Universities to organize the conference as well as faculty members and doctoral students of Member Universities to participate in the conference. A speaker from the industry sector is also invited to the conference.

◆ Contact Information ◆

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