コア連携＋組織的連携の概要・実績・展望

コア連携＋組織的連携の概要・実績・展望
との連携の輪を学生の海外短期実習で訪問することにより

研究のように、一部は既に国際共同研究として採択されている。

研究における連携実績は、例えば、林潤一郎教授とカーティン工科大学

である点で異なるが、昨年度発足のキャンパスアジアプログラムで

日本人の生き生きした状況を実感することができた。

現地を訪問し、学生交流を含む研究発表を実施しただけでなく、

博士に代表される国際共同研究の着実なシーズ

2012年度は再びシンガポールを訪問予定で計画中である。

は、東南アジア地域である。本プログラムでは、この地域

の大学院協働教育プログラム「グリーンアジア国際戦略」(修士博士一貫教育)

COEプログラムにおいては、本COEメンバーである寺岡靖剛教授、原田明教授が責任者であり、COEで培った学生教育

基本システムやアジアとの連携が活かされている。これら

の連携先に、前者は2つの連携先の1つに上海交通大学

であり、後者の6つの連携先の中に、ITB、マヒドン大学、

シンガポール国立大学、MJIITの4校が入っている。

この研究領域での次のプロジェクトの開始、教育面での2

プログラムの輪は、COEの国際連携果徳がきっかけ
となったことは明らかである。これらの中連携はこの5

年度のCOEの活動の中、まさに、関係者が乗りながら

構築してきたものであるが、プログラム責任者として振り
回ると、関係教員の創意と工夫、たゆみない努力が、当初
何とも予想もできなかった人と人の輪の広がりを生んだこと、さ

らに、それを活用した先端研究、博士後期課程学生教育が、

予想していた以上に相互に影響を与えながらうまく働き、

現実のものになった達成感がある。また、本COE活動の中

での人脈は学生教育だけでなく、博士研究員が様々な

形で国際連携に関わることでも、また、ITB、NEERI、シ
ンガポール国立大学、マヒドン大学からは訪問研究員や訪
問教授として九州で研究教育に参加することによっても達
成されている。これら若手研究者や教員が参加した活動
は、さらに国際的な研究活動を活発にして、各国の
次世代の若者を作成活動を育成し進めていく方向性を持って
いる。さまざまな取組みが各校で行われている。

ある日、COEと比較して、より教育的に特化したプログラム
である点で異なりますが、昨年度卒業のキャリアアッププログラム
「エネルギー環境理工学グローバル人材育成のための
大学院協働教育プログラム」(修士教育)、リーディング
大学院事業「グリーンアジア国際戦略」(修士博士一貫教育)
versity has enhanced in environmental and energy fields. China and Japan are in Asian countries. We are facing energy crisis, environmental pollution, resource shortage, and sustainable development. Asian sustainability needs collaboration with Asian countries. I hope that SJTU and KU continue collaboration in energy and environmental fields, especially in education and research. I wish that SJTU and KU have a good collaboration in CAMPUS ASIA Program.

Institution:
Institut Teknologi Bandung (Bandung Institute of Technology) was founded in 1920 as Technische Hogschule by the Dutch Government. During the Japanese era, the name of the institute was Bandung Kogyo Daigaku. Between 1945 to 1959 the institute was part of the University of Indonesia: Faculty of Mathematics & Natural Sciences and Faculty of Engineering. In 1959 had changed to Bandung Institute of Technology. The Department of Mining Engineering was founded in 1949 to fulfill the need of mining engineer in the country.

Research topics:
Topic of my researches are:
• Earth Resources Exploration: coal geology, ore minerals genesis, alluvial tin deposit.
• Environmental Hydrogeology: hydrogeology, groundwater quality, groundwater modelling, environmental impact assessment,

Comments:
• I feel that the GCOE-NCRS program is very important for us, especially to know each other, to know what we have done, to understand what are going on in our communities/countries, and what we should do in the future.
• With the end of the program, I feel that we still ‘need and have to’ work/collaborate/cooperate together, exchange our experiences, and preparing young researchers to solve the world’s energy shortage and environmental problem together.
• I appreciate Kyushu University for the invitation to joint the GCOE-NCRS program. Many experiences and new research/academic atmosphere we got from the program; not only for the professors, but also for the students and young researcher.
• I am glad with the approved and funding of the new GCOE program proposal of Kyushu University by the Japan Government for the next 7 years. Of course, I hope that collaboration between universities/research institutions among our countries will continue ever more.

CSIR-National Environmental Engineering Research Institute, (CSIR-NEERI), Nagpur, India
Name: Nitin Labhsetwar
Affiliation: Principal Scientist, CSIR-NEERI, Nagpur, India

CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur is a constituent of Council of Scientific & Industrial Research (CSIR), Government of India. The mandate of CSIR-NEERI (www.neeri.res.in) is to conduct quality research and developmental studies in environmental science and engineering; to render assistance to the industries of the region, local bodies, etc. in solving the problems of environmental pollution by S&T intervention; innovative approaches to optimal utilization and conservation of environmental resources. CSIR-NEERI is served by competent and experienced team of about 110 scientists with over 250 recherche and Post-doctoral students /Fellows in various core disciplines of relevance to environmental science and engineering. The new ActSIR programme made CSIR-NEERI also an academic institute, with increasing number of students and academic activities.

CSIR-NEERI envisages three major activities in XIP Five Year plan (2012-17), which will develop knowledge and processes related to: 1. Clean Water: Sustainable Options, 2. National Clean Air Mission (NCAM), 3. Centre of Excellence: Waste Utilization & Management. This is in addition to active research on cleaner and renewable energy and materials for various environmental applications, R&D to develop approaches and systems to bridge the gap of scientific frontiers and practical technology is a priority at CSIR-NEERI in the areas of cleaner energy, water & wastewater treatment, air pollution control and solid waste management. This has led to many technological solutions to environmental problems in India in these areas of environmental pollution control.

The 9th and final NCRS international symposium was truly a concluding symposium for this very active GCOE programme on NCRS. It was a pleasant surprise to see many participants than expected, which offered a much wider platform for discussions on focused as well as lateral issues. Prof. H. Nagashima has led this GCOE project very efficiently and always provided the required leadership to guide the project for a successful completion with excellent outcomes. Participation by a large number of research students through a very active poster session was quite impressive. The symposium sessions were quite well designed and covered most of the important aspects of NCRS, with recent advancements and updates from different parts of the world. Introduction of new project at Kyushu University was a pleasant surprise, which also indicates the success of present NCRS project. The most impressive was the debate of students and I can see the marked improvement in debating and presentation skills of Japanese students!!

The GCOE played a pivotal role in establishing and strengthening the research collaboration between CSIR-NEERI and KU. NEERI has quite actively participated in GCOE programme and had an opportunity to organize 8th International GCOE Symposium at Nagpur, India. In addition to the visits of Scientists from NEERI, the opportunities offered to NEERI’s research students to work at Kyushu University, was a valuable contribution of GCOE programme to NEERI. This relationship established through GCOE programme is expected to go long way and would prove to be of mutual benefits for both the countries. I am happy to write that NCRS project provided us solid background to successfully get a JSPS-DST project awarded with Prof. Y. Teraoka’s lab.

The topic of this GCOE programme is not only of current importance, but will be equally relevant in future, as “Cleaner Energy” would remain one of the most critical challenges of global importance in decades to come. Although a large number of research and educational activities have been carried out during this project, it will be of utmost importance to review these and select the most potential to pursue them further in the near future. I strongly feel continuation of NCRS activity in some form considering its importance. The debate course of Japanese students, which I was also a part of, was quite a useful experiment and the same should certainly continue in future. We would like to compliment and congratulate the entire GCOE team under the able leadership of Prof. H. Nagashima for very successful completion of GCOE-NCRS project.
Yonsei University was first established in 1885 by Christian missionaries, being the oldest private university in Korea. Our goal is to educate leaders who will manifest the spirit of “truth and freedom” to humanity from leadership positions around the world. The main campus is ensconced in a spacious, picturesque and natural setting located minutes away from the economic, political, and cultural centers of Seoul’s metropolitan downtown. Yonsei has 3,500 eminent faculty members who are conducting cutting-edge research across all academic disciplines. There are 18 graduate schools, 22 colleges and 133 subsidiary institutions hosting a selective pool of students from around the world.

The department of the chemical engineering in Yonsei is now leading in various fields such as exact chemical engineering industry, macromolecular energy industry, bioengineering and environment by new high technologies with support and funding from national institutes. The faculty consists of five emeritus professors and twenty full service professors who seek to systemize chemical engineering and put high technology based on high public utility.

Among many research areas in the department of the chemical engineering in Yonsei University, Inorganic-Material lab has a majority in inorganic materials including synthesize methods, chemical and physical modifications furthermore, in-organic composites for the application to catalysts and membranes in the petro-chemistry and low/high temperature fuel cell systems (PEMFC, SOFC, DMFC.). Moreover, in the field of fuel cell industry, the overall areas such as materials, operation, testing protocol and system have been researched.

—Your impression of attending at final NCRS

It was so successful in terms of participation from many member countries and the level of research presentation in this NCRS.

—Your opinion in your relationship with Kyushu and G-COE

We are very happy to join with Kyushu through G-COE program to establish a global collaboration network with friendship. We would like to strong the relationship for our level up the quality of research and education. For our future, Yong scientists exchange should be promoted to make a prolonged relationship between Kyushu and Yonsei univ.

—What you expect for the future of NCRS

I expect that NCRS will contribute the important role as an Asian hub network for future research and education in energy and nanomaterial.

Brief Introduction of Mahidol University

Mahidol University with its mission to excel in health, sciences, arts, and innovation with integrity for the betterment of Thai society and the benefit of mankind, is offering courses in a wide range of disciplines in medicine; public health; nursing, pharmacy; dentistry; engineering; natural sciences; computer science; health sciences; social sciences; applied sciences; applied arts; humanities and arts. Mahidol University is the most renowned research university in Thailand with the research activities in 5 broad categories: a) Medical and Clinical Sciences; b) Health Sciences and Public Health; c) Basic Science, Applied Science and Technology; d) Social Sciences, Humanities, Management and Liberal Arts; e) Arts, Language and Culture. At present, the number of undergraduate students is about 18,000 and graduate students of about 8,400.

Outline of my research topics

• Polymer Synthesis
• Modification of synthetic polymer
• Modification of natural rubber in organic and latex phases
• Surface modification of polymer

Attending at the final NCRS international symposium during 1-3 November 2012 is one of the most valuable moments as the symposium has well organized with Special and Kenote lectures which are very informative and comprehensive on the necessity to carefully use of energy and to find out alternative carbon resources in environmentally smart way. Two other activities were also organized; the first one is Poster session which provided not only an opportunity to display a wide range of basic and advanced research activities but also allowed participants to know each other and exchange knowledge and experience for future collaboration. The second one is Student session which is an interesting activity that grouped students from 3-4 nationalities to discuss and exchange theirs knowledge, culture and idea. This allowed young researchers to expose to new culture and society.

The relationship between Department of Chemistry, Faculty of Science, Mahidol University and Kyushu University was first started by the visit of 19 delegates from G-COE of Novel Carbon Resource Sciences at Faculty of Science, Mahidol University on 2nd February 2013. In this occasion, the activity of exchanges research information by staff members and students from both sides was occurred. This was a very successful meeting and a starting point of relationship as we could share ideas on the objectives of NCRS program. This is considered very privilege for us to be able to follow the relationship by participating in the 9th International Symposium on NCRS.

I would expect that Novel Carbon Resource Sciences continue to grow up ideas and include more new members to share in educating new young researchers in multidisciplinary way in order that future generation can contribute their knowledge and experience to the local and international society.
On behalf of Suranaree University of Technology (SUT), we (Visit Vao-soongnern, Rapee Gosalawit-Utke, Theeranun Siritanon; faculty members from the school of Chemistry, Institute of Science, SUT) would like to express our sincere thanks to Kyushu University (KU) and congratulate on a very good success of the 9th NCRS International Symposium and impressive achievements of the GCOE. All of us have been involved in the research of material chemistry for applications in energy generation, energy storage, and energy transformation. Our opportunity to participate this symposium motivates and inspires us to learn more for a broader aspect of research and have more linkage with several KU professors through mutual interactions during our time at Fukuoka.

The relationship between SUT and KU formally started in 2009 when SUT Rector and KU president had signed an MOU and agreements to have academic collaboration as well as staff/students exchanges. This Agreement has resulted in several activities between SUT and KU. In particular for GCOE activities, we had an opportunity to welcome a group of faculties/staffs/students from GCOE to visit SUT during January 31-February 1st 2011. During such occasion, several activities were organized including a half day visit to Synchrotron Light Research Institute, a national research institute located inside SUT campus, and a seminar session where graduate students from both KU and SUT presented their research works in order to exchange knowledge, experiences, and ideas to each other. Moreover, we had organized the workshop for professors from both sides to get to know each other through research presentation as well. Additionally, an open discussion among students and professors regarding to the global energy situation was exchanged by everyone’s perspectives and experience. We have shared our thoughts from the point of view from many countries e.g. Japan, Thailand, Indonesia, and China. Indeed the energy situation is the global problem. No individual country can solve this problem alone. Therefore, the idea of GCOE which is to have a network of people from different countries to share the view and work together is an important key. Like Adam Smith, the father of Economics, had explained the principle for the division of work which is to let each person do the things they do best so that we can get the “maximum output”. In these modern days, we may add more…let everybody do the thing they do best and let’s collaborate so that we can have the “optimum outcome” from our limited natural resources. Based on this concept, a good friendship should play an important role for good collaboration. We must unite to survive. Our world has enough resources to share. We believe that GCOE had done a lot of good things based on this concept and we do hope to see more and more progress. Just like growing the plant. This tree, although small, is already rooted waiting to grow strongly and healthy. It will eventually spread and reproduce throughout the world by means of a good of friendship from each country. According to the first law of thermodynamics, energy can neither be created nor destroyed. However, energy can be transformed and every form is still useful just like a good friendship which will not be changed even though the world keeps changing. Our life is short but a good friendship can last longer; like the sun always shines its light to the earth and continue to give its energy to the universe for several million years to come.

All the best,
Visit Vao-soongnern,
Rapee Gosalawit-Utke
Theeranun Siritanon
School of Chemistry, Institute of Science,
Suranaree University of Technology.
Nakhon Ratchasima 30000 Thailand.

Malaysia-Japan International Institute of Technology (MJIIT) is a multi-disciplinary and inter-disciplinary institute with an emphasis in four major areas, namely: Electronic Systems Engineering, Mechanical Precision Engineering, Environmental & Green Technology and Management of Technology. MJIIT is an initiative of the two governments, Malaysia and Japan to provide Japanese style engineering education with Malaysia distinctiveness. Despite its recent establishment, it draws its strength from the well-established research university, Universiti Teknologi Malaysia (UTM) by virtue that it is part of the UTM. It also draws the support from 24 Japanese universities, known as the Japanese University Consortium (JUC), which collaborates between the four focus areas.

MJIIT adapts the Japanese style kouza but rebranding it as innovative kouza (ikozha) which allows members of different ikozha to work closely with each other. Members of each ikozha can also lead research projects. MJIIT has established 10 ikozhas: Ecological Engineering, Air Resources, Communication Systems and Networks, Conditioning Monitoring, Advanced Devices & Materials Engineering, Tribology & Precision Engineering, Vehicle System Engineering, Biologically Inspired System & Technology, Lipid Engineering Applied Research, and Artificial Intelligence and Robotics. At its peak in 2017, MJIIT will have established about 40 ikozhas with 270 academic staff and a student population of 2600. Currently MJIIT has two undergraduate programmes, and MPhil and PhD programmes with a total student population of about 300.

Sustainable environment is an important aspect in any development process for the preservation of the global environment. Coupled with depleting fossil fuels and increasing energy cost, and the dire need to reduce the carbon print, efforts to introduce effective and efficient technology that integrates with ecological surroundings are highly desirable. The Ecological Engineering ikozha thus focuses on a total or system solution that integrates management approach, appropriate technology and advanced technology in ecological surroundings towards sustainable environment. Currently the Ecological Engineering emphasizes in providing appropriate and advanced technology for water and wastewater and formulating policies for the sustainable ecological environment; eliminating eutrophication in water bodies, membrane separation for water supply and wastewater treatment, and policy issues on the peatlands and food waste. The Ecological Engineering ikozha is headed by Prof Megat Johari Megat Mohd Noor with the following members: Prof Zuriani Zakaria, Dr Rory Padfield, Dr Effie Papargyropoulou from MJIIT, and Prof Ahmad Jusoh and Prof Thamer Ahmad Mohammad as Fellow.

On behalf of MJIIT I would like to congratulate Kyushu University and the G-COE for the successful conclusion of the project. This final NCRS International Symposium has indeed hit a high note, with exhibitions of highly effective collaboration efforts among member institutions. Kyushu University and the G-COE have shown the leadership capacity in Novel Carbon Resources Sciences and have the audacity and tenacity to excel further in this all-important area.