Integrated Lab Solution

- Shanghai TL Chemical Inc was established in 2002
- **Major Shareholders:**
  - Shanghai Institute of Organic Chemistry
  - Shanghai Tongji S&T Industrial Inc.
- Shanghai TL Chemical Inc is becoming the most professional company in China for Integrated Lab Solution
- **Our Key Technologies for Lab Solution**
  - Three Dimensional Lab Design
  - Ventilation System with VAV Technology
  - Unpowered Air-conditioning Fresh Air System
  - Professional Design for Lab Furniture
- Nearly 100 Chemistry Lab Projects and more than 5000 Fume Hoods are using our technologies since 2006

**Our Philosophy: Chemists Help Chemists**

- **Safety**
  - Ventilation and Fresh Air System
- **Contradiction**
  - VAV (Variable Air Volume)
- **Comfort**
  - Temperature
  - Humidity and Noise

![Image of lab building and equipment]
# Contents of FACS Newsletter 2014

<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Messages</strong></td>
<td>1-3</td>
</tr>
<tr>
<td>Message from the President (2013-2015)</td>
<td>1</td>
</tr>
<tr>
<td>Message from the Chairman of 16ACC</td>
<td>2-3</td>
</tr>
<tr>
<td><strong>FACS Executive Committee (2013-2015)</strong></td>
<td>4</td>
</tr>
<tr>
<td>FACS EXCO Members (2013-2015)</td>
<td>4</td>
</tr>
<tr>
<td><strong>FACS Projects and the Project Directors (2013-2015)</strong></td>
<td>5-6</td>
</tr>
<tr>
<td>FACS Projects and the Project Directors (2013-2015)</td>
<td>5-6</td>
</tr>
<tr>
<td><strong>FACS Activities</strong></td>
<td>7-65</td>
</tr>
<tr>
<td>Report on the 15th ACC in Singapore</td>
<td>7-16</td>
</tr>
<tr>
<td>Minutes of the 16th General Assembly (16GA)</td>
<td>17-33</td>
</tr>
<tr>
<td>Minutes of the 63rd EXCO Meeting</td>
<td>34-53</td>
</tr>
<tr>
<td>Minutes of the 64th EXCO Meeting</td>
<td>54-61</td>
</tr>
<tr>
<td>Report on the 4th Asia-America Chemical Symposium (A2CS)</td>
<td>62-65</td>
</tr>
<tr>
<td><strong>FACS Awards 2013</strong> (Papers)</td>
<td>66-79</td>
</tr>
<tr>
<td>FACS Foundation Lectureship Award 2013 in Organic Chemistry</td>
<td>66-70</td>
</tr>
<tr>
<td>Distinguished Young Chemist Award 2013 in Physical Chemistry</td>
<td>71-75</td>
</tr>
<tr>
<td>Distinguished Contribution to Chemical Education Award 2013</td>
<td>76-79</td>
</tr>
<tr>
<td><strong>Directories</strong></td>
<td>80-82</td>
</tr>
<tr>
<td>Profile of Turkish Chemical Society</td>
<td>80-82</td>
</tr>
<tr>
<td><strong>Announcements</strong></td>
<td>83-86</td>
</tr>
<tr>
<td>The 16th Asian Chemical Congress (16ACC)</td>
<td>83-84</td>
</tr>
<tr>
<td>The 41st International Conference on Coordination Chemistry (ICCC41),</td>
<td>85-86</td>
</tr>
</tbody>
</table>
President’s Foreword: Our Challenges in Challenging Times

Concluded with 1,738 delegates from 48 countries among which 67% or 1,171 were from overseas (outside Singapore), the 15th ACC (Asian Chemical Congress) turned out to be one of the most successful ACC in its history. Many world-class scientists spoke at the conference, including three Nobel Laureates, a large number of pioneers, rising stars, plenary, keynote, invited and many distinguished speakers from Asia and elsewhere.

The success of the conference is a testimony that chemistry in Asia is vibrant and thriving. It also gives FACS Council the energy and confidence to sustain our current activities and embark on new initiatives to try to serve the diverse needs of all members.

The challenges facing FACS are exciting but enormous. Among these, there are five that I would highlight that need more ideas and assistance from every Society, not just the Council:

1. **Heterogeneity** - Asia comprises the most prosperous to the most under-privileged communities, ranging from US$100,000 to US$1,000 in GDP per capita. The 100x gulf created a huge heterogeneous community with societies at different stages of their developments. Their demands and priorities are hence varied. How should FACS position itself to help bridge this gap and stay relevant across all members?

2. **Finance** - FACS is functioning on a modest budget relying on limited membership dues to sustain, let alone grow, its activities. There is no feasible mechanism to solicit fresh and significant funding to support its aspirations. Is this sustainable? What are our alternatives?

3. **Staffing** - Unlike large and active bodies like ACS, RSC, CSJ, RACI etc, FACS does not have full-time professional or secretariat staff to conduct its daily operations. Much of the work relies on full-time academic or industry professionals who are already sparing their leisure time to help FACS. Is this the best model? How far can we stretch volunteerism?

4. **Relevance** – Do the current projects truly reflect the relevance of FACS to our societies and members? If not, what else? How does FACS remain relevant to our societies and how do we measure such relevance? What values do our societies get from FACS? In return, what more can they contribute?

5. **Future** – Chemistry has evolved over the decades. With the recent emergence of interdisciplinary areas such as functional materials, energy, environment, food and nutrition, health science, mobile electronics, diagnostic and sensing, etc, what is the role of chemistry in these areas? Is chemistry fast becoming a peripheral or marginal science, or the value of chemistry is even stronger today since it underpins and transcends all these areas? Should FACS take an active role in promoting the value of chemistry in the modern world? What are the mechanism and plans?

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http://www.imre.a-star.edu.sg/
http://www.chemistry.nus.edu.sg/
http://www.snic.org.sg/
http://www.facs-as.org/
Message

President Elect, Federation of Asian Chemical Societies (FACS)
& President, Bangladesh Chemical Society
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I would like to take this opportunity to thank ‘the Federation of Asian Chemical Societies, FACS' for choosing Dhaka Bangladesh as the venue of the ‘16th Asian Chemical Congress’ and the ‘18th General Assembly’ to be held from 18–21 November 2015.

The Asian Chemical Congress (ACC) is the biennial flagship scientific meeting of FACS. As a tradition, ACC is organized to bring chemists from the Asia-Pacific region and other parts of the world together for strengthening the cooperation and development in the field of chemical research and technology. FACS is providing a channel of communication and collaboration among chemists and the chemical societies all over the Asia–Pacific region and the world.

Chemistry, as it is well known, is the central science and plays significant role in shaping the destiny of mankind. The theme for 16 ACC has been chosen as “Chemistry for Humanity” The present human civilization is facing many challenges like environmental pollution, food security and climate change. Chemists can play a pivotal role to meet these challenges. Chemistry could also provide solution to many of the world’s major problems such as food security, energy, potable water, materials and resource utilization. Therefore, advancement in chemistry for solving the above problems is critical for the sustainable development of people all over the world, particularly for the Asian region where poverty is a major problem in many countries. We are also aware that chemistry plays a significant role in the progress of the nation in industry, agriculture and the overall economy.
The upward trends of R&D in the Asian Countries like Japan, China, Singapore, South Korea etc, have been evident since the 1950s. The R&D investment in Japan has far exceeded that of USA while the R&D of China and Asia has also surpassed those of the rest of the world (outside USA and Europe). However, there are many developing or less developed countries in the region that are struggling hard to invest spending in R&D sector. The quantum and quality of research in the region is also not at the same level. Japan, China, Singapore and South Korea have advanced tremendously in the field of chemical sciences while the other countries are trying their best to cope with the situation.

Over the last few decades, Bangladesh has improved a lot in the field of Environmental, Organo-metallic and Natural products research. Nanotechnology research is also gaining momentum in the country. Therefore, the 16 ACC will give Bangladeshi researchers and chemists an opportunity to interact with the leading researchers of Asian Countries and other parts of the world and will foster collaboration in tackling many global challenges of unprecedented magnitude. It will also provide opportunities for rising stars and research students to interact and collaborate.

One of the main objectives of the Bangladesh Chemical Society is to encourage teaching and research in chemistry and allied fields. The society is also trying to protect the professional interests of chemists. We believe that meaningful interaction and cooperation amongst the academicians, researchers and chemists working in the industries are most urgently needed for the progress of Bangladesh.

Bangladesh Chemical Society shares the common objective of the world community of chemists and the members of the society are devoting their knowledge, skills and expertise for national development. I do hope that we all will act in unison, gathering all our knowledge particularly knowledge of chemistry, wisdom and efforts to face the changes for our survival now and for our future generations.

Bangladesh is known as a land of hospitality and is famous for its rich and diverse culture. The weather during November and December is also very pleasant.

I, on behalf of the Bangladesh Chemical Society and the Organizing Committee of 16 ACC welcome you all to Dhaka.

January 2014

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President Bangladesh Chemical Society and Chairman, Organizing Committee 16 ACC

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Report on the 15th Asian Chemical Congress (15ACC)

Introduction
Born in 1985 in Singapore, the Asian Chemical Congress is a biennial grand event for Asia-based chemists and scientists in all chemistry-centric areas to meet, present and discuss the latest advancement of education and research in broad discipline of chemistry. It has also been a powerful platform for Asia to reach out to the rest of the world through active participation of delegates in various speakers’ categories from other continents, and more systematically, through joint organization of thematic forums, symposiums and workshops etc. with major chemical societies and publishers from these continents.

In 2009 at the 13th Asian Chemical Congress (13ACC) in Shanghai, when the Federation of Asian Chemical Societies Executive Committee (FACS EXCO) awarded the Singapore National Institute of Chemistry (SNIC) the right to host the 15th Asian Chemical Congress, it is bound to be an exciting event to look forward to. Though scientific exchanges are more and more often at individual level and at small scale, it would be interesting for chemistry communities to overall examine Singapore, a young nation that started their systematic scientific research merely 20 years ago. As the FACS flag was handed over at the closing ceremony of 14 ACC in Bangkok in 2011, a clear message was sent to the entire community that “Singapore is ready and all are welcome!”

After intensive preparation in the followed two years, the 15ACC received the FACS EXCO members and society representatives on Aug 18th, 2013 at a preconference gathering in the Straights Kitchen Restaurant of Grand Hyatt Hotel at the Scotts Road in the tourist belt of Singapore. The best of local cuisines in a contemporary marketplace setting were served with varieties of tropical fruits and beverages (of course also a wide range of alcohol drinks). It was meant for warm-up, and more importantly, to get our privileged guests prepared for the intensive FACS General Assembly (GA) meeting with important agenda that would be held on the day followed at the Convention Centre of Resorts World Sentosa. It was made known later that Sapporo was finally selected by the FACS General Assembly as the venue of the 17ACC in 2017 with the Chemical Society of Japan being the host.

From 19th to 23rd of August 2013, the 15ACC was held at the Convention Centre of Resorts World Sentosa with 1738 of registered delegates from 48 countries and 3 territory regions. Among them 1171 were from overseas, with Japan, China and Korea being the countries with the largest number of participants. With a population of 5.3 million, Singapore tops the number of participants with 567 registered delegates which is certainly a significant achievement to be mentioned. A detailed breakdown of the delegates according to country and territory or their categories is given in tables on the next page.

The 15ACC started with a welcome reception for early arrived delegates on Aug 19th evening, and a grand opening on Aug 20th morning. 4 Plenary Lectures, 24 Keynote Lectures, 1 FACS Foundation Lectureship Award Lecture, 22 Pioneers from Asia Lectures, 48 Asian Rising Star Lectures, 2 other FACS Award Lectures and over 400 invited lectures in 45 technical sessions were delivered over the 4 days, with over 200 oral talks and 600 posters being concurrently presented. Meanwhile, the Congress has also featured a number of special programmes such as ASEAN Chemistry, Asian-American Chemistry Symposium on Advanced Materials, The 1st Asian Chemistry Research Fair (ACRF-1), Chemistry in Saudi Arabia, Editors’ Forum, Singapore-France Merlion Workshop, etc. The conference banquet with various award ceremony and exciting social programme at the signature Marina Bay Sands marked the closing of the 15ACC, where over 500 attendees have shared our joy and would look forward to the 16ACC in Dhaka.

The 15ACC held in Singapore overall has achieved a resounding success, according to not only our experience, but also the very positive feedbacks (and thank-you notes) from old and new friends who were with us at 15ACC. Reading these e-mails and notes have been very warm-hearted experiences. We take these as encouragement for us to move forward more confidently and steadily to make more significant contributions to the chemistry communities.
This report serves to recall good memories at 15ACC. Though being a documentary article, effort was taken to make it a light one to read. The events to be recapped here will generally follow the chronological arrangement at the 15ACC. Any omission could merely be due to the constraint in time and paragraphs.

### Delegate Statistics (according to Country and Territory)

<table>
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In Total: 1738

### Delegate Statistics (according to different categories)

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<tr>
<td>Plenary Speakers</td>
<td>4</td>
<td>FACS EXCO Members</td>
<td>11</td>
</tr>
<tr>
<td>FACS Award Speakers</td>
<td>3</td>
<td>FACS Society Representatives</td>
<td>25</td>
</tr>
<tr>
<td>Keynote Speakers</td>
<td>24</td>
<td>Organising Committee Members</td>
<td>30</td>
</tr>
<tr>
<td>Pioneers from Asia Speakers</td>
<td>22</td>
<td>Editors</td>
<td>8</td>
</tr>
<tr>
<td>Asian Rising Stars Speakers</td>
<td>48</td>
<td>Sponsors and Exhibitors</td>
<td>96</td>
</tr>
<tr>
<td>History of ACC Speakers</td>
<td>7</td>
<td>Poster Presenters</td>
<td>637</td>
</tr>
<tr>
<td>Invited Speakers</td>
<td>440</td>
<td>ACRF-1 Poster Presenters</td>
<td>148</td>
</tr>
<tr>
<td>Oral Speakers</td>
<td>223</td>
<td>Student Helpers</td>
<td>24</td>
</tr>
</tbody>
</table>

In Total: 1738**

**Some double counting has been excluded**
Welcome Reception

On Aug 19th late afternoon, some 500 early arrived delegates of 15ACC headed to Loui's NY Pizza Parlour inside of the Universal Studios Singapore @ the Resorts World Sentosa to attend the 15ACC welcome reception. The reception was jointly organized with the Germany-based renowned publisher VCH-Wiley to celebrate the 125 anniversary of Angewandte Chemie, a top chemistry journal. Mr. Lim Chuan Poh, Chairman of A*STAR (Agency for Science, Technology and Research) and the Guest-of-Honor of the reception, delivered a welcome address. Professor Peter Goelitz, the Editor-in-Chief of Angewandte Chemie, shared with the delegates on the success and anticipation of the journal and VCH-Wiley publisher. A big variety of delicious food served at this tourist highlight with free flow of beers, wine and soft drinks has made it an unforgettable evening for many of us.

Opening Ceremony

The opening ceremony of 15ACC started as early as 8:00 am on Aug 20th 2013 with good attendance. After the opening speech given by Professor Andy Hor, Chair of 15ACC and new FACS President, Professor Supawan Tantayanon, Immediate-Past FACS President, delivered a special note. Then she announced & presented FACS Awards to Professor Tamio Hayashi of the Institute of Materials Research and Engineering/Singapore (FACS Foundation Lectureship Award 2013 in Organic Chemistry), Professor Yu-Guo Guo of the Institute of Chemistry/Chinese Academy of Sciences/China (FACS Distinguished Young Chemist Award 2013 in Physical Chemistry), Professor Bhinyo Panijpan of the Mahidol University/Thailand (Distinguished Contribution to Chemical Education Award 2013), and Professor, San H. Thang of CSIRO/Australia (FACS Citations 2013 for Contributions to Chemistry in the Asia-Pacific Region), respectively. Photos were also taken for the awardees together with FACS EXCO members to memorize this precious moment.

Plenary and Keynote Lectures

At 15ACC 4 Plenary Lectures were delivered. 3 of them were given by Nobel Laureates in Chemistry, Professor Ei-ichi Negishi (2010), Professor Akira Suzuki (2010), and Professor Aaron Ciechanover (2004). The 4th one was presented by the Tamaki Professor of Humanities and Sciences at Stanford University, Professor Barry Trost. These talks with latest advancement and insightful analysis in their respective areas have been presented to the audience. It was an excellent learning experience.

The Keynote Lectures at 15ACC have covered a much broader range of topics with world-class researches, and were presented by carefully selected renowned scientists from Asia (incl. Australia), America and Europe. Good distribution in both scientific areas and geographical origins of the 24 keynote speakers has maximized the interactions among speakers, between speakers and other delegates across different disciplines and continents. The 15ACC keynote speakers were:

- Andrew B Holmes - University of Queensland, Australia
- Andrey Rogach - City University of Hong Kong, Hong Kong SAR, China
- Changqing Sun - Nanyang Technological University, Singapore
- Christopher Abell - University of Cambridge, United Kingdom

Photos from the Welcome Reception: left - Prof. Peter Goelitz, Editor-in-Chief of Angewandte Chemie, with Prof. Andy Hor, Chair of the 15ACC; middle – symbolic plaque board at Universal Studios Singapore to mark the event; right – a glance of a corner in the restaurant when the Guest-of-Honor was giving a welcome note.
**Award Presentation @ Opening Ceremony** (from left to right): The FACS Immediate-Past President, Professor Supawan Tantayanon was presenting Awards to Professor Tamio Hayashi, Professor Yu-Guo Guo, Professor Bhinyo Panijpan and Professor San H. Thang, respectively.

**Group Photo @ Opening Ceremony**: FACS EXCO Members with the 4 FACS Award recipients.

**Plenary Lectures at 15ACC** (from left to right): Nobel Laureate Professor Ei-ichi Negishi (2010), Nobel Laureate Professor Akira Suzuki (2010), Nobel Laureate Professor Aaron Ciechanover (2004), and Tamaki Professor of Humanities and Sciences at Stanford University, Professor Barry Trost.

- Daniel Resasco - The University of Oklahoma, USA
- Dongyuan Zhao - Fudan University, China
- Edman Tsang - University of Oxford, United Kingdom
- Eiichi Nakamura - University of Tokyo, Japan
15ACC Report

- Ernesto Occhiello - SABIC, Saudi Arabia
- Federico Rosei - Institut National de la Recherche Scientifique, Canada
- Guo-Xin Jin - Fudan University, China
- Jean-Marie Basset - King Abdullah University of Science and Technology, Saudi Arabia
- Jim Thomas - The University of Sheffield, United Kingdom
- Johannes Lercher - Technical University Munich, Germany
- Katsuhiko Ariga - National Institute of Materials Science, Japan
- Keiji Maruoka - Kyoto University, Japan
- Kian Ping Loh - National University of Singapore, Singapore
- Kimoon Kim - Pohang University of Science and Technology, South Korea
- Masahiro Yamashita - Tohoku University, Japan
- Pierre Braunstein - Institut Le Bel, France
- Stephen Hashmi - University of Heidelberg, Germany
- Tom Davis - The University of New South Wales, Australia
- Xi Zhang - Tsinghua University, China
- Zhongfan Liu - Peking University, China
- Guo-Qin Xu - National University of Singapore, Singapore
- Henry N.C. Wong - The Chinese University of Hong Kong, Hong Kong SAR, China
- Jackie Y.R. Ying - Institute of Bioengineering and Nanotechnology, A*STAR, Singapore
- Kazunari Domen - University of Tokyo, Japan
- Kohei Tamao - RIKEN, Japan
- Lai Yoong Goh - ASM & UTAR, Malaysia
- Len Lindoy - The University of Sydney, Australia
- San H. Thang - CSIRO, Australia
- Shuhong Yu - University of Science and Technology of China, China
- Song Gao - Peking University, China
- Soo Ying Lee - Nanyang Technological University of Singapore, Singapore
- Tamio Hayashi - Institute of Materials Research and Engineering, A*STAR, Singapore
- Wonwoo Nam - Ewha Womans University, South Korea
- Xinhe Bao - Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China
- Yasuhiro Iwasawa - University of Tokyo, Japan
- Yi Lu - University of Illinois at Urbana-Champaign, USA
- Zhaomin Hou - RIKEN, Japan

Customized memorial plaques were presented to these Asia-proud pioneers in recognition of their significant contributions to Asia and the world.

Asian Rising Stars Lectures
Blooming Asia cannot sustain without constant supply of future leaders, especially in scientific research. 48 Asia-based or Asia-grown young scientists with impressive research achievement and a clear upward trajectory were selected to deliver commemorative Asian Rising Star Lectures. This dedicated forum has served the purpose to showcase to the world our best young researchers, and to create an ideal opportunity for our best minds to meet and foster collaborations for even bigger impact. These speakers were:

- Hongyu Chen - Nanyang Technological University, Singapore
- Wei Chen - National University of Singapore, Singapore
- Hec Cheul Choi - Pohang Univ. of Science & Tech, South Korea
- Yu Han - King Abdullah University of Science and Technology, Saudi Arabia
- Jingcheng Hao - Shandong University, China

Pioneer from Asia Lectures
Asia has made tremendous progress in the scientific research in the past decades, thanks to a large group of people who represented Asia and made breakthroughs, created new concepts and theories, opened completely new research areas, etc. 15ACC made the effort to secure 22 of such eminent scientists (Asia-based or Asia-grown) who can share their pioneered piece of research work with latest advancement in a commemorative Pioneers from Asia Session. These speakers are a role model for our current generation of researchers, and we also used this dedicated forum to showcase to the world scientific community the “Best from Asia” who were:

- Andrew T.S. Wee - National University of Singapore, Singapore
- Ben Zhong Tang - The Hong Kong University of Science and Technology, Hong Kong SAR, China
- Chandrasekaran Srinivasan - Indian Institute of Science, India
- Chi-Ming Che - The University of Hong Kong, Hong Kong SAR, China
- Chunhua Yan - Peking University, China

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- Chunhua Yan - Peking University, China
- Guo-Qin Xu - National University of Singapore, Singapore
- Henry N.C. Wong - The Chinese University of Hong Kong, Hong Kong SAR, China
- Jackie Y.R. Ying - Institute of Bioengineering and Nanotechnology, A*STAR, Singapore
- Kazunari Domen - University of Tokyo, Japan
- Kohei Tamao - RIKEN, Japan
- Lai Yoong Goh - ASM & UTAR, Malaysia
- Len Lindoy - The University of Sydney, Australia
- San H. Thang - CSIRO, Australia
- Shuhong Yu - University of Science and Technology of China, China
- Song Gao - Peking University, China
- Soo Ying Lee - Nanyang Technological University of Singapore, Singapore
- Tamio Hayashi - Institute of Materials Research and Engineering, A*STAR, Singapore
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- Yu Han - King Abdullah University of Science and Technology, Saudi Arabia
- Jingcheng Hao - Shandong University, China

11
Customized designed memorial plaques were presented to these Asia-proud rising stars in recognition of their impressive achievements with the best wish for more splendid future contributions.

History of ACC Lectures

It would not have been possible for the Asian Chemical Congress (ACC) to be at its current prestigious status, without the innovative ideas and great endeavors from the pioneer organizers of the early ACCs. By having a session on the history of ACC with talks given by some of the key pioneer organizers gives us an opportunity to know these people; and more importantly, through them and their talks to gain a holistic view of the ACC, and could thus better appreciate what we have with the ACC today. Luckily and proudly, we were able to engage 7 senior professors who organized earlier ACCs and have witnessed the evolution of ACC from the early days to share some anecdotal facts. They were:

- J N O Fernando - Institute of Chemistry Ceylon, Sri Lanka
- Suat Hong Goh - National University of Singapore, Singapore
- Chee Cheong Ho - Institut Kimia Malaysia, Malaysia
- Hsing-Hua Huang - National University of Singapore, Singapore
- Barry Noller - The University of Queensland, Australia
- Keng Yeow Sim - National University of Singapore, Singapore
- Ting-Kueh Soon - Institut Kimia Malaysia, Malaysia
History of ACC Invited Speakers (from left to right): Prof. J N O Fernando, Prof. Suat Hong Goh, Prof. Chee Cheong Ho, Prof. Hsing-Hua Huang, Prof. Barry Noller, Prof. Keng Yeow Sim, and Datuk Dr. Ting-Kueh Soon.

Photos of ACRF-1 Top2 lines: The student representatives of the 8 shortlisted ACRF-1 projects were giving their oral presentation in front of the judge panel. Bottom line: 5 members from 3 of the 8 shortlisted teams who won the ACRF-1 Award with the poster judge panel chaired by Dr. Stuart Cantrill, Chief Editor of Nature Chemistry.

The 1st Asian Chemistry Research Fair
Talent nurturing and development is crucial, especially for the scientific community when scientific research is losing its charm to some other careers for remuneration reasons. In light of this, 15ACC launched the 1st Asian Chemistry Research Fair (ACRF-1) which serves as a platform to attract and deepen interest of pre-university students through research projects with typically a duration of 6 to 12 months. A total of 148 students from 10 top schools signed up for this premium education and school research initiative, conducted their projects, and presented their findings at 15ACC in the form of...
15ACC Report

posters on Aug. 20th, 2013. 8 out of 80 projects were shortlisted by a judge panel led by Dr. Stuart Cantrill, the Chief Editor of *Nature Chemistry* and re-presented as oral lectures at 15ACC on 23rd August 2013. Among the 8 projects, 3 teams with a total of 5 members won the 1st Asian Chemical Research Fair Award sponsored by the American Chemical Society (partner of 15ACC). Each Award offers a trip to an ACS Regional Meeting in the USA, including economy class airfare, student registration fee and basic accommodation. Though at pre-university level, the research presented had a flavor of innovation with reasonably well data analysis, and enthusiasm in the presentations was clearly sensed. The ACRF-1 was a successful event and well-received by the schools and the students, and served the purpose of talent nurturing and development. It is anticipated that some of these students will pursue chemistry major in universities, and eventually take up a research career.

Editors’ Forum

Editors’ Forum was one of the highlights of 15ACC. Partnered with Royal Society of Chemistry, the forum was held on Aug 21st evening. 4 editors of the top chemistry journals (*Nature Chemistry*, *Angewandte Chemie*, *Journal of the American Chemical Society*, and *Green Chemistry*) gave lectures on publication matters, and joined by 4 editors of regional chemistry journals with vast experiences in the followed panel discussions. Under a relaxed but active atmosphere the 15ACC delegates put up various searching questions, and the editors answered with wit and insightful views. Impact factor, reviewing process, rejection rates, etc were spoken and discussed. It was a learning rich experience for most of the audience. The 8 editors were:

- Stuart Cantrill, Chief Editor, *Nature Chemistry*
- Peter Goelitz, Editor-in-chief, *Angewandte Chemie*
- Peter J. Stang, Editor, *Journal of the American Chemical Society*
- Sarah Ruthven, Editor, *Green Chemistry*
- Curt Wentrup, Editor-in-Chief, *Australian Journal of Chemistry*
- Ehud Keinan, Editor-in-Chief, *Israel Journal of Chemistry*
- Mitsuhiko Shionoya, Editor-in-Chief, *Chemistry Letters*
- Norihiro Tokitoh, Editor-in-Chief, *Bulletin of the Chemical Society of Japan*

Photos from Editors’ Forum *(from left to right), top:* Prof. Andy Hor, Dr. Stuart Cantrill, Prof. Peter Goelitz, Prof. Peter Stang, and Dr. Sarah Ruthven. *Bottom, left:* the panel of editors at the post-talk interactive discussion; *right:* the concentrated audiences at a corner of the lecture hall.
Singapore-France Merlion Workshop
This Workshop was an independent event sponsored by Institut Français de Singapour and French company Sanofi, with 15ACC delegates being the speakers. A total of 11 scientists from France and Singapore spent a full day together on Aug 20th, to present and discuss around the theme of “From Molecules to Materials: Translating Science to Technology”.

The 4th Asia-America Chemistry Symposium on Advanced Materials
The Asia-American Chemistry Symposium is an event initiated by the Federation of Asian Chemical Societies and the American Chemical Society. At 15ACC it is 4th one with the theme of “Advanced Materials”. A total of 9 eminent scientists of FACS or ACS presented their research on Aug 22nd. It is to note that from FACS the speakers were nominees of the Chemical Societies of Japan, Malaysia, Singapore, South Korea, and Thailand.

Chemistry in Saudi Arabia
A dedicated session to showcase the vibrant chemistry research in Saudi Arabia was held at 15ACC with the support of Saudi Arabia Chemical Society. A group of over 30 delegates comprising of professor, researchers and students presented their research in different forms.

ASEAN Chemistry
A dedicated session was also given to ASEAN-based scientists to present and discuss about the chemistry-related research which is particularly relevant to the ASEAN economy. A selected group of 12 scientists spoke in this session, and received good attention.

FACS-SNIC Award Lectures
2 of FACS Award 2013 Recipients and 7 of SNIC (Singapore National Institute Chemistry) - Industry Award Recipients delivered their award lectures in this session on Aug. 20th. It offered a good opportunity for audiences to appreciate the significant contribution of these Awardees to the chemistry community (Asia or Singapore) through research innovations.

Thematic Invited Sessions
15ACC had also covered a very wide range of topics in chemistry and related areas which we cannot elaborate in detail here. Over 400 invited speakers spoke at the following thematic invited sessions:

- Advances in the Chemistry of N-heterocyclic Carbenes and Related Species
- Assembly of Nano and Microparticles into Functional Materials
- Catalytic Biomass Refinery for Chemicals
- Chemical Biology in Discovery Research
- Chemical Vapor Deposition for Thin Film Application
- Chemistry Education in Emerging Asian Economies
- Chemistry for Fuel Cells
- Chemistry for Molecular Imaging
- Functional Coordination Complexes
- Emerging Electrode Materials for Next-generation Lithium Secondary Batteries
- Green Synthesis & Catalysis
- Graphene Chemistry: Synthesis and Application
- Lanthanide-doped Nanostructures
- Hydrogen Production and Storage
- Metal-Organic Frameworks
- Materials Design for Energy Storage and Conversion
- Molecular Separation by Zeolite Membranes
- Nanocosmeceuticals and Natural products
- Nanomaterials-based Biosensors and Bioanalytical Systems
- Non-bonded Interactions
- Novel Compounds for Display, Lighting and Solar Cell Application
- Novel Catalytic Systems for Green Chemistry
- Novel Functional psi-Systems and Materials
- Organic Chemistry and Biological Chemistry
- Organometallic Pincer Complex: Application and Catalysis
- Polymer and Supramolecular Materials
- Polymer-based Materials for Bioapplication
- Polymer-derived and Polymer-induced Nanostructures
- Polymer Nano Science and Technology
- Process Chemistry
- Recent Progresses in Fast Kinetics and Their Application
- Recent Progresses in Lab on a Chip and Its Applications
- Recent Trends in Heterocyclic Compounds
- Renewable Energy I: Dye-Sensitized Solar Cells
- Renewable Energy II: Polymer-Based Solar Cells
Banquet cum Closing Ceremony

After 4 days of hardcore scientific presentations, some 500 delegates of 15ACC finally could enjoy delicious food and exciting social programme at the conference banquet cum closing ceremony at Marina Bay Sands, a signature site of Singapore. There various awards were presented, relaxing conversations were held, thanks and good wishes were conveyed, etc. It was simply a joyous evening that is unforgettable! Thanks to you all who have helped made 15ACC a great success!

Photos from the Banquet (from left to right), top left: Nobel Laureate Prof. Ei-ichi Negishi was presenting Asian Rising Star Trophy; top middle: IUPAC President, Prof. Tatsumi was presenting Pioneer from Asia Trophy; top right: FACS Immediate-Past President Prof. Supawan Tantayanon was presenting a token of appreciation to FACS President Prof. Andy Hor; middle left: Indian Dance presented by students from a local secondary school; middle right: Chinese Dance presented by students from a local secondary school; Bottom left: a corner at the banquet ball room; Bottom middle: Prof. Jasim Uddin Ahmad, Chair of the 16ACC was presenting the preparation of next ACC, and inviting for participations; Bottom right: FACS flag handover from Prof. Andy Hor to Prof. Jasim Uddin Ahmad.
Minutes of the 16th General Assembly

Date: Monday, September 5, 2011
Time: 9:00 am – 3:00 pm
Venue: Queen Sirikit National Convention Center, Bangkok, Thailand

Participants

Delegates of the member societies

<table>
<thead>
<tr>
<th>Societies</th>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Australian Chemical Institute</td>
<td>Representative</td>
<td>Prof. Curt Wentrup</td>
</tr>
<tr>
<td>Bangladesh Chemical Society</td>
<td>President</td>
<td>Prof. Ahmad Jasim Uddin</td>
</tr>
<tr>
<td>Brunei Darussalam Institute of Chemistry</td>
<td>President</td>
<td>Dr. Hj. Ibrahim Hj. Abd Rahman</td>
</tr>
<tr>
<td>Chinese Chemical Society</td>
<td>Representative</td>
<td>Prof. Zhigang Shuai</td>
</tr>
<tr>
<td>Chemical Society of South Pacific (Fiji Islands)</td>
<td>Representative</td>
<td>Mr. Vimlesh Chand</td>
</tr>
<tr>
<td>Hong Kong Chemical Society</td>
<td>Chairman</td>
<td>Prof. Raymond W. Y. Wong</td>
</tr>
<tr>
<td>Indian Chemical Society</td>
<td>Representative</td>
<td>Prof. Biswapatii Mukherjee</td>
</tr>
<tr>
<td>Himpunan Kimia Indonesia</td>
<td>President</td>
<td>Dr. Muhamad A. Martoprawiro</td>
</tr>
<tr>
<td>The Israel Chemical Society</td>
<td>Representative</td>
<td>Prof. Arnon Shani</td>
</tr>
<tr>
<td>The Chemical Society of Japan</td>
<td>President</td>
<td>Prof. Yasuhiro Iwasawa</td>
</tr>
<tr>
<td>Jordanian Chemical Society</td>
<td>President</td>
<td>Prof. Sultan T. Abu-Orabi</td>
</tr>
<tr>
<td>The Korean Chemical Society</td>
<td>President</td>
<td>Prof. Nakjoong Kim, Ph.D.</td>
</tr>
<tr>
<td>Kuwaiti Chemical Society</td>
<td>Representative</td>
<td>Dr. Alyaa Elotabi</td>
</tr>
<tr>
<td>Institut Kimia Malaysia</td>
<td>Vice-President</td>
<td>Dato' Chang Eng Thuan</td>
</tr>
<tr>
<td>Nepal Chemical Society</td>
<td>President</td>
<td>Dr. Raja Ram Pradhananga</td>
</tr>
<tr>
<td>New Zealand Institute of Chemistry</td>
<td>President</td>
<td>Assoc Prof. Gordon W. Rewcastle</td>
</tr>
<tr>
<td>The Chemical Society of Pakistan</td>
<td>President</td>
<td>Dr. Din Mohammad</td>
</tr>
<tr>
<td>The Institute of Chemistry, PNG</td>
<td>President</td>
<td>Dr Basil Marasinghe</td>
</tr>
<tr>
<td>Philippine Federation of Chemistry Societies</td>
<td>President</td>
<td>Prof. Dr. Maribel Nonato</td>
</tr>
<tr>
<td>The Mendeleev Russian Chemical Society</td>
<td>Representative</td>
<td>Prof. Dr. Alex Pokrovski</td>
</tr>
<tr>
<td>Singapore National Institute of Chemistry</td>
<td>President</td>
<td>Prof. Andy Hor</td>
</tr>
<tr>
<td>Saudi Chemical Society</td>
<td>President</td>
<td>Dr. Daifallah Aldhayan</td>
</tr>
<tr>
<td>Institute of Chemistry, Ceylon</td>
<td>Representative</td>
<td>Prof. J. N. O. Fernando</td>
</tr>
<tr>
<td>Chemical Society Located in Taipei</td>
<td>President</td>
<td>Prof. Chien-Hong Cheng</td>
</tr>
<tr>
<td>Chemical Society of Thailand</td>
<td>President</td>
<td>Prof Supawan Tantayanon</td>
</tr>
<tr>
<td>Chemical Society of Vietnam</td>
<td>Representative</td>
<td>Prof. Dr. Huynh Van Trung</td>
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</table>
## EXCO Members

<table>
<thead>
<tr>
<th>Position</th>
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</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Prof. Chunli Bai</td>
</tr>
<tr>
<td>President-Elect</td>
<td>Prof Supawan Tantayanon</td>
</tr>
<tr>
<td>Immediate Past President</td>
<td>Datuk Dr. Ting-Kueh Soon</td>
</tr>
<tr>
<td>Secretary General</td>
<td>Prof. Long Lu</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Dr. San H. Thang</td>
</tr>
<tr>
<td>Coordinator of Projects</td>
<td>Prof. Tahsin J. Chow</td>
</tr>
<tr>
<td>Director of Scientific Affairs</td>
<td>Prof. Kyung Byung Yoon</td>
</tr>
<tr>
<td>Editor of Publications</td>
<td>Prof. Noriyuki Suzuki</td>
</tr>
<tr>
<td>Secretary-General Elect</td>
<td>Assoc Prof. Supa Hannongbua</td>
</tr>
</tbody>
</table>

### Observers

1. Dr. Dien Pandimen, Singapore National Institute of Chemistry,
2. Prof. Fortunato B Sevilla III, Philippine Federation of Chemistry Societies, Past President (1995 -1997),
3. Prof. Dong Myung Shin, The Korean Chemical Society,
4. Mr. Yasuhiisa Chiba, The Chemical Society of Japan,
5. Prof. Tamotsu Takahashi, The Chemical Society of Japan,
6. Mr. Nobuyuki Kawashima, The Chemical Society of Japan,
7. Ms. Khaleda Al-Dalama, Kuwait Chemical Society,
8. Miss. CHEK Sotha, Cambodian Chemical Society,
9. Prof. Dr. Thida Win, Myanmar Chemical Society,
10. Prof. Datin Dr Zuriati Zakaria, Institut Kimia Malaysia

### Observer Society

Cambodian Chemical Society

### Invited Guests

1. Prof. David StC. Black, Secretary General, IUPAC
2. Dr. Nancy B. Jackson, President, American Chemical Society (ACS)
3. Dr. Robert Parker, CEO, The Royal Society of Chemistry (RSC)

###Absent Societies

Iraqi Chemists Union;
Mongolian Chemical Society;
The two member societies, Iraqi Chemist Union and Mongolian Chemical Society have never responded to any Emails.
AGENDA of the 16th General Assembly (16GA)

1. Approval of the Agenda
2. Address by the President
3. Confirm the 15GA Minutes and matters arising
4. Receive and approve the Biennial Report from the Secretary General
5. Receive and approve Report from the President-Elect (14ACC Preparation)
6. Receive and approve Financial Statements from the Honorary Treasure
7. Receive and approve Report from the Coordinator of Projects
8. Receive and approve Report from the Editor of Publications
9. Receive and approve Report from the Director of Scientific Affairs
10. Confirm the recipients of FACS Awards and Citations
11. Confirmation of National Delegates and Voting Members
12. Vote on the host of the 16th Asian Chemical Congress (16ACC)
13. Approve the amendments to FACS Statutes Chapter 3 on FACS Executive Committee (EXCO) and EXCO Meeting and Chapter 7 on FACS Projects and Sub-projects
14. Approve applications of Memberships from Cambodian Chemical Society and Chemical Research Society of India
15. Elect the FACS Executive Committee (EXCO) for 2011-2013
16. Elect new FACS Fellows and Honorary Fellows
17. Conduct any other relevant business

Professor Chunli Bai, President of FACS, presided the 16th General Assembly (16GA). He first expressed his warm welcome to all delegates of the FACS member societies, EXCO members, observers and invited guests to participate this event. He then gave his gratitude to the Chemical Society of Thailand to host 16GA and the coming 14th Asian Chemical Congress (14ACC). Then he declared the participation of each member societies, EXCO Members, Prof. David StC. Black, IUPAC, Dr. Nancy B. Jackson, ACS and Dr. Robert Parker, RSC.

During the morning break, the formal FACS/ACS Collaboration Alliance Agreement was subscribed by Prof. Chunli Bai, President of the Federation of Asian Chemical Societies (FACS) and Dr. Nancy B. Jackson, President of American Chemical Society (ACS).

1. Approval of the Agenda

   All items are approved without any question.

2. Address by the President

Before the presidential address, Prof. Chunli Bai invited Prof. David StC. Black, Secretary General, IUPAC, Dr. Nancy B. Jackson, President, American Chemical Society (ACS) and Dr. Robert Parker, CEO, The Royal Society of Chemistry (RSC), to give a short talk, respectively. They are all expressed their thanks to FACS to be invited to attend 16GA. They gave brief introductions on the origins, purposes, activities and strategic interests of their own
societies/union. They were satisfied with the roles played by FACS in chemical societies. And finally they emphasized the power of chemistry in life, industry, and economy, the challenge that chemists are facing, the importance of collaborations between chemical societies worldwide. The following is the full address from the President of FACS

Dear invited guests,
Delegates of Member Societies,
EXCO Members, and Observers,
Ladies and gentlemen:

I feel greatly privileged and honored to serve the Federation of Asian Chemical Societies (FACS) as the President for the period of 2009 - 2011. I wish to thank you all once again for your trust in me. I would like to give my gratitude to all member societies for your support and cooperation, particularly to Jordanian Chemical Society for hosting the 58th EXCO Meeting. I would like to place on record my appreciation to all members of the Executive Committee (EXCO) for your excellent services rendered to the Federation in this period, especially to Datuk Dr. Ting-Kueh Soon and Prof. Supawan Tantayanon for your enthusiasm. I would also like to express my acknowledgement to other Federations and national societies, particularly to IUPAC and American Chemical Society for their close cooperation.

It has been a matter of great pride and satisfaction to see the Federation growing and is able to meet the needs of chemical professions. Chemistry is so-called central science that can solve many social problems. It plays an essential role in clean and renewable energies for the low carbon economy. Innovative knowledge-based economy including high-tech chemistry and chemical engineering can strongly support sustainable development for the society and enhance our resistibility and immunity to both economic disturbances and natural disasters. Green chemistry will eventually revolutionize the chemical industry for pollution-free processes. Understanding the chemical processes in life sciences at molecular level is essential for developing new drugs and diagnostic methods and for green fertilizers and pesticides in agriculture. Chemistry is also the ultimate resources for new materials.

United Nations recognizes the importance of chemistry and proclaimed 2011 as the International Year of Chemistry (IYC) with the theme “Chemistry - Our Life, Our Future”. I believe it is a formidable opportunity for Asian chemistry: for increasing the public appreciation of chemistry; for recognizing the essential contributions of chemistry to our society; for realizing the central role of chemistry in solving global challenges in resources, environment and climate change through close international collaboration; and most importantly, for attracting young talents with bright and original ideas to advance chemistry. In short, IYC provides us a unique opportunity to join forces among Asian chemical societies in order to meet the global challenges.

The 21st century is believed to be Asian century. Our Asian chemical societies should capture the IYC to get close contact with respective government agencies to solicit stronger
supports for chemistry development and to attract young talents for innovative research. FACS would like to play a major role in the sustainable development of the region to improve our environment and improve the quality of our life. With the cooperation and support of all scientists in Asia Pacific, I am sure that FACS can play a crucial role in the socio-economic development of the world. As the economic globalization accelerated in the new millennium, challenges and opportunities are also globalized. IYC is also an opportunity for international collaborations all around the world, and particularly among our Asia-Pacific region.

I wish FACS would make great progress under the leadership of Prof. Superwan Tantayanon. I wish the new EXCO members would make more contributions in your service. I wish the member societies would develop faster and be more active. I wish FACS would cooperate closely with other Federations and national societies, such as IUPAC, EuCheMS, FASC, FLAQ, ACS, RSC, GDCh, et al.

Thank you!

Prof. Chunli Bai
President (2009 – 2011)
Federation of Asian Chemical Societies (FACS)

After the presidential address, Datuk Dr. Ting-Kueh Soon suggested to give congratulations to Prof. Chunli Bai for his Presidency in Chinese Academy of Science.

3. Confirm the 15GA Minutes and matters arising

The Minutes of the 15th General Assembly (15GA) have been approved in the 57th EXCO Meeting and published in the issue of 2011. Prof. Chunli Bai went quickly through the items one after another of the minutes of 15GA. No question arised.

4. Receive and approve the Biennial Report from the Secretary General

Prof. Long Lu gave his great thanks to all member societies and EXCO members for support and cooperation, especially to Jordanian Chemical Society for hosting the 58th EXCO Meeting, and to Datuk Dr. Ting-Kueh Soon and Prof. Supawan Tantayanon for many kinds of help. He briefly introduced the current state of FACS that 28 member societies govern the FACS Council and two more societies will join FACS. Most societies are active and made many contributions to FACS but some societies are lost connections. 9 members serve the Executive Committee, and 10 Projects and a sub-project respond scientific activities. The practical work he has done in this period includes the following:
   a) Assisted Prof. Chunli Bai so that he can carry out his Presidential duties.
   b) Assisted the President, the President-Elect, the Immediate Past President to make Agreement between FACS and ACS.
c) Organized 4 EXCO Meetings
56th EXCO Meeting 14 September 2010 Shanghai, China
57th EXCO Meeting 19 June 2010 Xiamen, China
58th EXCO Meeting 7 October 2010 Dead Sea, Jordan
59th EXCO Meeting 26 March 2011 Anaheim, USA
Prepared Agendas and Minutes of the EXCO Meetings
d) Organized 15GA on 13 September 2009, Shanghai, China.
Prepared the Minutes of 15GA. He thanked Datuk Dr. Ting-Kueh Soon and Datin Dr Zuriati Zakaria for preparing primary materials and the Agenda.
e) Prepared 16GA materials and its Agenda.
f) Served as FACS contact point.
g) Updated the website information.
h) Helped the Editor of Publication with two issues of FACS Newsletters.
i) Invited member societies to nominate the FACS Awards 2011.
There are 14 nominees from 6 member societies to compete the 4 Awards. Unfortunately, there is no nominee for Citation Award, the same as last time.
j) Invited member societies to bid for hosting 18 GA and 16ACC.
There are three member societies to bid the host of 18 GA and 16ACC.
k) Having Indian Chemical Society back to FACS
l) Participated in the EuCheMS General Assembly and meeting of Presidents on 14-15 October in Bled, Slovenia on behalf of Prof. Chunli Bai, President of FACS.
m) Sent sympathy letter to Pakistan Chemical Society on the occasion of the flood disaster and waived this year’s subscription fee
n) Sent Congratulation Letters to the Leadership of Member Societies changed
   Professor David Wood, President of Royal Australian Chemical Institute (RACI)
   Prof. Jasim Uddin Ahmad CChem, FRSC, President of Bangladesh Chemical Society
   Professor Jiannian Yao, President of Chinese Chemical Society
   Professor Nak Joong Kim, Ph.D., President of The Korea Chemical Society
   Professor Chien-Hong Cheng, President of Chemical Society Located in Taipei
   Dr. Daifallah Aldhayan, Chairman of Saudi Chemical Society.

Prof. Long Lu mentioned that some societies change their leaderships quite often, for instance, The Korea Chemical Society. It changes the leadership every year. So he made a suggestion for societies to send their contacting information for any change. Except for President/Chairman, the secretariat would like to have a person’s information for general contact. It is not good to use society’s Email because some Presidents/Chairmen or Secretaries-General never use/check them. The council was fully agreed with it.

5. Receive and approve Report from the President-Elect (14ACC Preparation)
Professor Dr. Supawan Tantayanont, Chairperson of 14th Asian Chemical Congress (14ACC), reported the preparation of 14ACC. At the Opening Ceremony Professor Dr. Her Royal Highness Princess Chulabhorn planned to attend but was unable to come due to her illness. A representative was appointed to come. Several important speeches and activities were
arranged, such as: Professor Dr. Supawan Tantayanont, Chairperson of 14ACC, would give a Congress Report and Welcome Remark. Professor Dr. David Black, IUPAC Secretary – General, would present a Congratulation Speech. Professor Dr. Chunli Bai, President of FACS, would delivery an Opening Remark. The FACS Awards 2011 would be announced by Prof. Dr. Long Lu, FACS Secretary – General and the Plaques would be presented by Professor Dr. Chunli Bai, the President of FCAS.

At the Congress, Nobel Laureates and eminent scientists from all over the world were invited to present **plenary lectures**, such as:

<table>
<thead>
<tr>
<th>Name of speaker</th>
<th>Title of Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Professor Dr. Yuan T. Lee</strong> (The Nobel Prize in Chemistry 1986)</td>
<td>Elementary Processes Involved in Matrix Assisted Laser Desorption Ionization</td>
</tr>
<tr>
<td><strong>Professor Dr. Ada E. Yonath</strong> (The Nobel Prize in Chemistry 2009)</td>
<td>The Amazing Ribosome</td>
</tr>
<tr>
<td>Professor Dr. Minoru Isobe</td>
<td>New Molecular Science from Synthetic and Bioorganic Chemistry Related to Natural Products</td>
</tr>
<tr>
<td>Professor Dr. Yongyuth Yuthavong</td>
<td>Drug Development at the Interface of Chemistry Biology</td>
</tr>
<tr>
<td>Professor Dr. Niyazi Serdar Sariciftci</td>
<td>Organic Nanostructures for Solar Energy Conversion: From Photovoltaic Electricity to Synthetic Fuels Using CO2 Recycling</td>
</tr>
<tr>
<td>Professor Dr. Keiji Morokuma</td>
<td>Theoretical Studies of Chemical Reactions and Dynamics of Biomolecular Systems in Protein</td>
</tr>
</tbody>
</table>

The winners of FACS Awards 2011 were arranged to deliver lectures as follows:

- **Foundation Lectureship Award 2011 in Inorganic Chemistry:**
  *Nanoelectronics Molecular Metal Wires and Related Molecular Materials* by Prof. Shie-Ming Peng,

- **FACS Distinguished Contribution to Economic Advancement Award 2011:**
  *Industrial Chemistry & Innovation* by Dr Pailin Chuchottaworn,

- **FACS Distinguished Contribution to Chemical Education Award 2011:**
  *Development, Promotion and Dissemination of Microscale Chemistry and Green Chemistry Education* by Professor Emeritus Kazuko Ogino,

- **FACS Distinguished Young Chemist Award 2011 in Inorganic Chemistry:**
  *Metallopolyynes and Metallophosphors: New Multifunctional Materials with Emerging Applications* by Professor Wai-Yeung Wong.

The scientific programs would include **8 general sessions, 23 Symposia** and **5 Workshops** as follows:

- Analytical and Environmental Chemistry
- Materials and Polymer Chemistry
- Physical and Theoretical Chemistry
- Organic Chemistry and Green Chemistry
- Chemical Education
- Inorganic Chemistry, Nanochemistry and Catalysis
- Natural Products, Chemical Biology and Medicinal Chemistry
- Industrial Chemistry & Innovation
23 Symposia

1. Separation, Storage, and Utilization of CO2
2. Assembly of Nano and Microparticles into Functional Materials
3. Green Chemistry in Curriculum
4. Recent Advances in Functional Materials I
5. Recent Advances in Functional Materials II (RAFM II)
6. Flow Techniques and Downscaling for Analytical Sciences
7. Cheminformatics
8. Membranes for Molecular Separation
9. Recent Progresses in Fast Kinetics and Their Application
10. Medical Applications of Nano Materials
11. International Year of Chemistry 2011 “Future Chemical Perspectives in Asia”
12. Recent Progresses in Lab on a Chip and Its Applications
13. Medicinal Chemistry
14. Elsevier Symposium “General Synthetic Chemistry”
15. Asia America Chemical Symposium (A2CS) “Water Resources and Quality”
17. Renewable Energy II: Polymer-Based Solar Cells
19. Recent Trends in Heterocyclic Compounds
20. Novel Synthesis of Nano Materials and Applications
21. Novel Compounds for Display and Lighting Devices
22. Medical Applications of Biopolymers
23. ANRAP (Asian Network for Research on Anti-diabetic Plants)

And 5 Workshops

1. IUPAC Workshop in Recent Advances of Natural Products
2. Joint Thai – UK Workshop on Frontiers in Drug Discovery Research
3. Organic Small Scale Chemistry
4. UNIDO workshop on Green Industry, Organic Pollutant and Persistent Organic Pollutants (POP)
5. Chemical Security Engagement

183 invited lectures and 331 talks would be arranged, plus certain amount of posters in the above mentioned General Sessions, Symposia and workshops. All lectures were arranged in a program book and the abstracts were published in the book.

Some important events and meetings were organized, for instance, Welcome reception on the night of September 5, Banquet on the night of September 6 and Closing Ceremony and Announcement of the 15ACC on the night of September 8 were settled down. The 60th FACS Executive Committee (EXCO) Meeting on September 6 and the 7th Meeting of the Asian Chemical Editorial Society (ACES). Besides, the exotic culture and spectacular Thai performances were also organized in special theme party.
Registration Fee

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Early Bird Fee By 30 Mar 2011 (THB)</th>
<th>Standard Fee 31 Mar – 20 July 2011 (THB)</th>
<th>On-site Fee From 21 July 2011 (THB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACS Member</td>
<td>11500</td>
<td>13400</td>
<td>15400</td>
</tr>
<tr>
<td>IUPAC Member</td>
<td>12900</td>
<td>14400</td>
<td>15600</td>
</tr>
<tr>
<td>Non-member</td>
<td>14400</td>
<td>16000</td>
<td>17600</td>
</tr>
<tr>
<td>Overseas Graduate</td>
<td>8000</td>
<td>9600</td>
<td>11200</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accompanying</td>
<td>1600</td>
<td>1600</td>
<td>1900</td>
</tr>
<tr>
<td>Banquet</td>
<td>2250</td>
<td>2000</td>
<td></td>
</tr>
</tbody>
</table>

The registered participants were over 1200 persons, including over 400 students, from 43 countries/territories all over the world. Plus other attendees, such as exhibitors and business-persons, total participants would be estimated over 1700 persons. Various hotels nearby are reserved and selected by the participants. The VIPs were arranged to stay in the Imperial Queen Park Hotel.

The Chemical Society of Thailand (C.S.T.) truly believes that besides the valuable scientific knowledge, all participants’ trip to Thailand, The Land of Smile, will be an impressive and memorable occasion.

Please refer to the detailed report on 14ACC.

6. Receive and approve Financial Statements from the Honorary Treasure

Prof. San H. Thang reported the following various FACS accounts and the FACS subscription status:

A. The balance of the FACS account kept in Australia under RACI General Ledger (# No. 2-4170) as at August 23, 2011 is AUD 48,748.61.

Please note that the interests earned for this account in the financial year end at June 30 2011 has not been allocated by the RACI Office.

<table>
<thead>
<tr>
<th>Beginning balance</th>
<th>AUD 48,748.61</th>
</tr>
</thead>
<tbody>
<tr>
<td>(As reported at the 59th EXCO meeting in Anaheim, CA, USA on March 26, 2011)</td>
<td></td>
</tr>
</tbody>
</table>

The below Table summarizes the account balances since the 15th GA (September 2009) till this 16th GA (September 2011).

<table>
<thead>
<tr>
<th>Balance of the FACS Account kept in Australia (in AUD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,109.47</td>
</tr>
</tbody>
</table>

25
B. Current balance of the **Foreign Currency Account** under Account name: **Federation of Asian Chemical Societies** held with the Commonwealth Bank of Australia is:

**USD30,025.21** *(balance obtained via phone banking as @ August 24, 2011)*

- The latest transaction statement from the Commonwealth Bank shows balance of USD 30,025.21 (ref. Supporting Info #2 handout).

### Beginning balance

*(as reported at the 59th EXCO meeting in Anaheim USA, March 26 2011)*

<table>
<thead>
<tr>
<th>Subscription fees received from Members (Year):</th>
<th>USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Royal Australian Chemical Institute (2011)</td>
<td>600.00</td>
</tr>
<tr>
<td>The Chemical Society of Japan (2011)</td>
<td>574.76</td>
</tr>
<tr>
<td>The Israel Chemical Society (2011)</td>
<td>261.67</td>
</tr>
<tr>
<td>New Zealand Institute of Chemistry, Inc. (2011)</td>
<td>289.31</td>
</tr>
<tr>
<td>Institute of Chemistry, Ceylon (2010 &amp; 2011)</td>
<td>229.31</td>
</tr>
<tr>
<td>The Hong Kong Chemical Society (2011)</td>
<td>289.28</td>
</tr>
</tbody>
</table>

Net received total (in USD): 2,473.88  
**Final balance total:** USD 30,025.21

For complete information, the below Table is a summary of this account balance since the 15th GA till this 16th GA.

### Balance of the Foreign Currency Account (USD)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17,791.57</td>
<td>21,326.15</td>
<td>24,542.71</td>
<td>27,551.33</td>
<td>30,034.21</td>
</tr>
</tbody>
</table>

C. Cash on-hand (in USD): **USD1,135.58**

As a result of the following activities, cash on-hand is USD 1,135.58 up from USD 885.58 as reported at the 59th EXCO meeting on March 26, 2011 in Anaheim, CA, USA:

<table>
<thead>
<tr>
<th>Items</th>
<th>Cash received (USD)</th>
<th>Cash Payment (USD)</th>
<th>Cash on-hand (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening (as reported at the 59th EXCO meeting in Anaheim, CA, USA, March 26, 2011)</td>
<td></td>
<td></td>
<td>885.58</td>
</tr>
<tr>
<td>Reimbursement to the Treasurer for IUPAC Associated Organization Fee (2011)</td>
<td></td>
<td>50.00</td>
<td>- 50.00</td>
</tr>
<tr>
<td>2011 Subscription fee for Chemical Society of Thailand</td>
<td>300.00</td>
<td></td>
<td>+ 300.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td><strong>1,135.58</strong></td>
</tr>
</tbody>
</table>

For complete information, the below Table is a summary of the cash-on-hand balance since the 15th GA.
D. The dormant FACS Account kept in IKM: The Treasurer reported the current balance as following:

<table>
<thead>
<tr>
<th>Accounts</th>
<th>Closing Balance at 59th EXCO (RM)</th>
<th>Current Balance At 16th GA (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maybank Current Account (No. 562535-177723)</td>
<td>4,196.01</td>
<td>6,373.01*</td>
</tr>
<tr>
<td>Maybank Fixed Deposits (No. 212530-064600)</td>
<td>163,257.43</td>
<td>165,853.42*</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>167,453.44</strong></td>
<td><strong>172,226.43</strong></td>
</tr>
</tbody>
</table>

* For details, see below and handout (Supporting Info # 3 prepared and provided by Datuk Dr Soon Ting-Kueh).

**Beginning balance (Maybank Current Account)**

<table>
<thead>
<tr>
<th>Subscription fees received from Members (Year)</th>
<th>USD</th>
<th>RM</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Mendeleev Russian Chemical Society (2011 and 2012)</td>
<td>240.00</td>
<td>720.00</td>
</tr>
<tr>
<td>The Chemical Society of Pakistan (2007, 2008, 2009 and 2011)</td>
<td>480.00</td>
<td>1,457.00</td>
</tr>
<tr>
<td><strong>Net received total (in RM)</strong></td>
<td><strong>2,177.00</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total :</strong></td>
<td><strong>RM 6,373.01</strong></td>
<td></td>
</tr>
</tbody>
</table>

The increase of RM 2,177.00 from RM 4,196.01 at the 59th EXCO to the current balance of RM 6,373.01 in the Maybank Current Account (No. 561535-177723) was due to the payment of USD 240.00 for the Mendeleev Russian Chemical Society 2011 and 2012 FACS subscription dues and USD 480.00 received for the Chemical Society of Pakistan for 2007, 2008, 2009 and 2011 FACS subscription dues, respectively. The increase of RM 2,595.99 for the Maybank Fixed Deposits Account was the interests earned after maturity of two receipts No. 003958 (on April 15 2011) and B1446251 (on Nov 3, 2010). Datuk Dr Soon informed that the FACS 2011 subscription for IKM (USD 300.00) has been deposited into the Maybank Current Account in early August 2011; the amount will be shown in the next statement.

For complete information, the below Table is a summary of the balances of Maybank accounts kept in IKM since the 15th GA:

<table>
<thead>
<tr>
<th>Account</th>
<th>15th GA (Sep 13 2009)</th>
<th>57th EXCO (Jun 19 2010)</th>
<th>58th EXCO (Oct 7 2010)</th>
<th>59th EXCO (Mar 26 2011)</th>
<th>16th GA (Sep 5 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 562535-177723</td>
<td>40,064.87</td>
<td>3,269.01</td>
<td>3,269.01</td>
<td>4,196.01</td>
<td>6,373.01</td>
</tr>
<tr>
<td>No. 212530-064600</td>
<td>121,239.96</td>
<td>158,414.30</td>
<td>161,499.68</td>
<td>163,257.43</td>
<td>165,853.42</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>161,304.83</strong></td>
<td><strong>161,683.31</strong></td>
<td><strong>164,768.69</strong></td>
<td><strong>167,453.44</strong></td>
<td><strong>172,226.43</strong></td>
</tr>
</tbody>
</table>
E. Subscription notices/FACS Yearly Subscription List
For an update FACS Yearly Subscription List (as at August 24, 2011), please refer to the handout. There are 8 Member Societies currently not up-to-date on their 2011 subscription. Friendly reminders had been sent by the Treasurer on August 22, 2011 via email to these Members with outstanding subscription and urging them settling their dues at their earliest convenience. Once again, the Indian Chemical Society continues to be a Member Society that the Treasurer has problem in making dialogue with.
The Treasurer will propose a motion that a decision is required to decide/determine the status (‘Waiving’ subscription fee) for five Member Societies, namely, Iraqi Chemical Society, Mongolian Chemical Society, Nepal Chemical Society, Papua New Guinea Institute of Chemistry, and Chemical Society of South Pacific. These five Member Societies have had their subscriptions waived by the FACS through a decision made at the 14th GA in 2007; and their status are expected to be reviewed at this 16th GA meeting.

7. Receive and approve Report from the Coordinator of Projects
Prof. Tahsin J. Chow reported the 10 Projects and a Sub-project, Project Directors, and their activities.
• Asian Chemical Education Network (ACEN)
  Director: Prof. Mei-Hung Chiu
  4 activities have been held.
• Asian Network of Analytical Chemistry (ANAC)
  Director: Prof. Masaaki Tabata
  6 activities have been held and a proposal for coming two years was given.
• Asian Network for Environmental Chemistry (ANEC)
  Director: Prof. Ross Saddler
  A proposal for coming two years was given but no concrete activity was mentioned.
• Asian Network for Research on Anti-diabetic Plants (ANRAP)
  Director: Prof. Mohammed Mosihuzzaman
  3 activities have been held.
• Asian Pasific Food Analysis Network (APFAN)
  Director: Prof. Pieter Scheelings
  No activity and proposal.
• Asian Chemical Information Network (ChIN)
  Director: Prof. Xiaoxia Li
  4 activities have been held. Main activities are development of new version of FACS website and its maintenance. A proposal for coming two years was given.
• Green Chemistry (GC)
  Director: Prof. Chee-Cheong Ho
  No concrete activity was mentioned but a proposal for coming two years was given.
• Medicinal Chemistry and Natural Projects (MCNP)
  Director: Prof. David Winkler
  Financial report (use of seed money) rather than academic activity and a proposal for coming two years were given.
The 16th General Assembly of the Federation of Asian Chemical Societies

- Low-Cost Instrumentation-Microscale Chemistry (LCI-MSC)
  Director: Prof. Datin Dr. Zuriati Zakaria
  2 activities have been held and a community from some member societies was organised.
- History and Archives of FACS (ARCHIVE)
  Director: Prof. Barry N. Noller
  Main activity is digitising FACS General Assemblies, EXCO Meetings.
- Asian Network of Metallic Chemistry (ANMC)
  Director: Yasushi Nishihara
  5 activities have been held.

8. Receive and approve Report from the Editor of Publications

Prof. Suzuki reported that since 13th ACC at Shanghai, 2009, two issues of FACS Newsletter were published and distributed. He was greatly appreciated the Chemical Society of Japan, particularly Ms. Hiroko Ihida, CSJ Secretariat and Dr. Nobuyuki Kawashima, Executive Director, for financial and administrative support.

The balance of the printing (USD1 = JPY80-85)

<table>
<thead>
<tr>
<th>Expense</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPY935,650</td>
<td>JPY580,778</td>
</tr>
<tr>
<td>Printing 2000 copies</td>
<td>Support from FACS</td>
</tr>
<tr>
<td>JPY685,650</td>
<td>JPY 80,778</td>
</tr>
<tr>
<td>Shipping fee</td>
<td>Advertisement fee</td>
</tr>
<tr>
<td>JPY250,000</td>
<td>JPY500,000</td>
</tr>
</tbody>
</table>
(74 overseas, 56 domestic destinations)

Balance: \(580,778 - 935,650 = -354,872\) (negative)
The Chemical Society of Japan made up for the deficiency.

9. Receive and approve Report from the Director of Scientific Affairs

1. 13 one-day Symposia with the topics listed below.
   1) Renewable Energy I: Dye-Sensitized Solar Cells
   2) Renewable Energy II: Polymer-Based Solar Cells
   3) Renewable Energy III: Artificial Photosynthesis and Hydrogen Production
   4) Separation, Storage, and Utilization of CO₂
   5) Membranes for Molecular Separation
   6) Assembly of Nano and Microparticles into Functional Materials
   7) Novel Compounds for Display and Lighting Devices
   8) Recent Progresses in Fast Kinetics and Their Application
   9) Recent Trends in Heterocyclic Compounds
   10) Novel Synthesis of Nano Materials and Applications
   11) Medical Applications of Nano Materials
   12) Recent Progresses in Lab on a Chip and Its Applications
   13) Medical Applications of Biopolymers

2. Participated in the launching ceremony of the Cambodian Chemical Society
10. Confirm the recipients of FACS Awards and Citations

The Secretariat received 14 nominees from 7 member societies (China, Hong Kong, Japan, Korea, Pakistan, Taipei and Thailand). There is no candidate for Citation Award this year. The Committee for FACS Awards 2011 (the President-Elect, the Immediate Past-President and the Secretary General on behalf of the President) met before the 59th EXCO meeting, in Anaheim, California, USA on March 29, 2011, and decided to give the FACS Awards 2011 to the following nominees:

FACS Foundation Lectureship Award 2011 in Inorganic Chemistry
Prof. Shie-Ming Peng, Chemical Society Located in Taipei

FACS Distinguished Young Chemist Award 2011 in Inorganic Chemistry
Prof. Wai-Yeung Wong, Hong Kong Chemical Society

FACS Distinguished Contribution to Economic Advancement Award 2011
Dr. Pailin Chuchottaworn, Chemical Society of Thailand

FACS Distinguished Contribution to Chemical Education Award 2011
Prof. Emer. Kazuko Ogino, Chemical Society of Japan

The results were approved by the Council.

11. Confirmation of National Delegates and Voting Members

26 out of 28 member societies attended the 16GA. Each has the voting right.

12. Vote on the host of the 16th Asian Chemical Congress (16ACC)

3 member societies were willing to bid the host of 16th Asian Chemical Congress (16ACC) which will be held in 2015. The member societies are as follows:

- Chemical Society Located in Taipei 25 June, 2011
- The Chemical Society of Japan 29 June, 2011
- Bangladesh Chemical Society 30 June, 2011

Each society was given ten (10) minutes to do power-point presentation. Bangladesh Chemical Society wins from the Council vote at the first round to host 16ACC and 18GA.

13. Approve the amendments to FACS Statutes Chapter 3 on FACS Executive Committee (EXCO) and EXCO Meeting and Chapter 7 on FACS Projects and Sub-projects

Chapter 3  FACS EXCO Meeting

3.1 The Executive Committee (EXCO) of FACS shall comprise the following as accordance to the FACS Statutes adopted at the FACS 16th General Assembly held in Bangkok, Thailand on September 5, 2011:
- President
- President-Elect
- Immediate Past-President
Secretary General
Treasurer
Secretary General-Elect
Coordinator of Projects
Editor of Publications
Director of Scientific Affairs
One representative from each of the three regions as defined in 3.3

3.2 The representative, to be elected among the member societies within the region, will come from a member society of country/territory that is not already represented in the Executive Committee.

3.3 Memberships of FACS will be classified into the following three regions:

**EAST & PACIFIC ASIA**
China
Japan
Korea
Hong Kong
Russia
Taipei
Australia
New Zealand
Fiji

**SOUTHEAST ASIA & PAPUA**
Brunei Darussalam
Indonesia
Malaysia
Philippines
Singapore
Thailand
Vietnam
Papua New Guinea

**SOUTH & WEST ASIA**
Bangladesh
India
Nepal
Pakistan
Sri Lanka
Iraq
Jordan
Kuwait
Saudi Arabia

3.4 The role of the regional representative is to be a liaison between the FACS EXCO and member societies of the region.

3.5 The representative is to be elected among the member societies within the region after the election of the principal office bearers during the General Assembly. He or she shall hold office for one term only.

3.7 For persons holding the posts of Treasurer, Coordinator of Projects, Editor of Publication and Director of Scientific Affairs, the maximum number of terms is two. However, in certain cases, it may be extended for one more term.

3.10 The quorum for EXCO Meeting shall be seven (7) EXCO members. In the event of a quorum not being attained, the meeting shall continue as an informal EXCO Meeting; however no formal motions can be passed.

**Chapter 7  FACS Projects and Sub-projects**

7.3 Terms of the Coordinator of Projects, Project Directors and Co-Directors
For persons holding the posts of Coordinator of Projects, Project Directors and Co-Directors, the maximum number of terms is two. However, in certain cases, it may be extended for one more term.

The above amendments to FACS Statutes were approved
14. Approve applications of Memberships from Cambodian Chemical Society and Chemical Research Society of India

The Cambodian Chemical Society (CCS) and the Chemical Research Society of India (CRSI) were willing to join FACS and sent the required documents. The Executive Committee of FACS had discussed the matters in the 57th EXCO meeting for CRSI and via Emails for CCS. The Executive Committee strongly recommends the two societies to join FACS. The Council approved it by show of hands.

15. Elect the FACS Executive Committee (EXCO) for 2011-2013

According to the newly amended FACS Statutes, there are twelve (12) positions in FACS Executive Committee as follows:

- President: Prof Supawan Tantayanon
- President-Elect: Prof. Andy Hor
- Immediate Past President: Prof. Chunli Bai
- Secretary General: Prof. Supa Hannongbua
- Secretary-General Elect: Dr. Dien Pandimen
- Treasurer: Prof. Datin Dr Zuriati Zakaria
- Coordinator of Projects: Prof. Datuk Dr. Ting-Kueh Soon
- Editor of Publications: Prof. Long Lu
- Director of Scientific Affairs: Prof. Kyung Byung Yoon
- Representative from East & Pacific Asia: Prof. Dr. Tomatsu Takahashi
- Representative from Southeast Asia & PNG: Prof. Dr. Muhamad A. Martoprawiro
- Representative from South & West Asia: Prof. Dr. Sultan T. Abu-Orabi

The upper five (5) positions are officially fixed; the middle four (4) positions are nominated by the President and the President-Elect and the below three (3) positions are elected by each region. The Council went through the candidates of each position and finally approved them.

16. Elect new FACS Fellows and Honorary Fellows

The two recent Nobel Laureates, Professor Akira Suzuki and Professor Ei-ichi Negishi were nominated for the New FACS fellows. On March 26, 2011 in Anaheim, CA, USA, the 59th FACS EXCO Meeting has discussed the issue. All EXCO members have agreed to accept them as the FACS Fellows. The Council approved them.

17. Conduct any other relevant business

No.
Group photo of the 16th General Assembly
### Minutes of The 63rd FACS EXCO Meeting

**April 24, 2013, Melbourne Convention & Exhibition Center, Melbourne, Australia**

**Participants : FACS EXCO Members**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position at EXCO</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Prof. Dr. Supawan Tantayanon</td>
<td>President</td>
<td>YES</td>
</tr>
<tr>
<td>2 Prof. Dr. Andy Hor Tzi Sum</td>
<td>President-Elect</td>
<td>NO</td>
</tr>
<tr>
<td>3 Prof. Dr. Chunli Bai</td>
<td>Immediate Past President</td>
<td>NO</td>
</tr>
<tr>
<td>4 Prof. Dr. Supa Hannongbua</td>
<td>Secretary General</td>
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</tr>
<tr>
<td>5 Dr. Dien Pandimen</td>
<td>Secretary General-Elect</td>
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</tr>
<tr>
<td>6 Prof. Datin Dr. Zuriati Zakaria</td>
<td>Treasurer</td>
<td>YES</td>
</tr>
<tr>
<td>7 Datuk Dr. Ting-Kueh Soon</td>
<td>Coordinator of Projects</td>
<td>YES</td>
</tr>
<tr>
<td>8 Prof. Dr. Kyung Byung Yoon</td>
<td>Director of Scientific Affairs</td>
<td>NO</td>
</tr>
<tr>
<td>9 Prof. Dr. Long Lu</td>
<td>Editor of Publications</td>
<td>YES</td>
</tr>
<tr>
<td>10 Prof. Dr. Tamotsu Takahashi</td>
<td>Representative from East &amp; Pacific Asia</td>
<td>YES</td>
</tr>
<tr>
<td>11 Prof. Dr. Muhamad Abdulkadir Martoprawiro</td>
<td>Representative from Southeast Asia &amp; Papua</td>
<td>YES</td>
</tr>
<tr>
<td>12 Prof. Dr. Sultan T. Abu-Orabi</td>
<td>Representative from South &amp; West Asia</td>
<td>NO</td>
</tr>
</tbody>
</table>

Observers: Prof. Dr. Barry N. Noller, Director of the project “History and Archives” and Dr. Roger Stapleford, CEO of the RACI

1. **Apology**
   Prof. Chunli Bai, Prof. Andy Hor Tzi Sum, Prof. Kyung Byung Yoon and Prof. Sultan T. Abu-Orabi sent e-mails informed that they couldn’t attend the meeting.

2. **Approval of the Agenda**
   All items are approved without any question.

3. **Opening Address by FACS, President**
   The President, Prof. Supawan Tantayanon, gave her thankfulness to the Royal Australian Chemical Institute (RACI) for invitation and to Melbourne Convention Bureau (MCB) for great effort in hosting the 63rd EXCO meeting. The President expressed appreciations to the RACI members for their warm hospitality. Prof. Supawan Tantayanon also thanked honorary observers from the RACI for attending the 63rd EXCO meeting.

4. **Approval of the Minutes of the 62nd EXCO Meeting**
   The minutes of the 62nd EXCO meeting was approved with the following corrections:
   Item 3, the section of Opening Address by FACS President. “Professor Sieng Huy” to be changed to “Professor Neth Barom”
   Item 9, the section of the Report from Editor of Publication, “Massage” to be changed to “Message”
5. Matters after the 62\textsuperscript{nd} EXCO Meeting

\textbf{a. Chemical Conferences in Asia 2012-2014}

According to 62\textsuperscript{nd} EXCO meeting, the information for chemical conferences in Asia and organized by FACS member societies shall be announced in FACS website. The list of chemical conferences (about 82 conferences) in Asia during 2012-2015, collected by Prof. Nobuyuki Kawashima was sent to Secretary General. This information has been sent to Prof. Xiaoxia Li to update on the FACS website. FACS website has been updated by the service from Prof. Xiaoxia Li.

\textbf{b. Agreement with Kazan National Research Technical University (KNRTU)}

According to the visit of Datuk Dr.Soon and Professor Datin Zuriati Zakaria in KNRTU on 31/10/2012, this brought the matter to the FACS President about the possible agreement between FACS and KNRTU. Prof.Supawan Tantayanont sent the draft Agreement to all EXCO and went to Kuala Lumpur in order to sign the General Agreement between KNRTU and FACS in December 2012.

\textbf{c. 4\textsuperscript{th} A2CS in 15ACC}

As FACS EXCO agreed at the 62\textsuperscript{nd} EXCO meeting in Seam Reap, Cambodia, to nominate FACS speakers from Japan, Korea, Thailand, Malaysia and Singapore to participate at a one day symposium which is a major part of FACS/ACS collaboration. This symposium also features the 15ACC on “Advanced Materials.” Special topics such as this or other cross-cutting topics of interest to FACS regions, i.e. health, energy, could be the focal point to convene scientists from ACS and FACS to forge new grounds in scientific collaboration for innovation. Communication with ACS International Affairs, Dr. Francisco Gómez, Dr.Dien Pandimen and Secretary General, the update list of speakers are following:

\textbf{FACS speaker:}
Prof. Jae Sung Lee, Pohang Univ. of Science and Technology, South Korea,
Prof. Chin Han Chan, Universiti Teknologi MARA, Malaysia,
Prof. Thawatchai Tantulani, Chulalongkorn University, Thailand,
Prof. Kazunari Domen, University of Tokyo, Japan,
Prof. Loh Kian Peng, National University of Singapore, Singapore.

\textbf{ACS Speaker:}
Prof. Satish Kumar, Georgia Institute of Technology, US,
Prof. Yi Lu, University of Illinois,
Prof. Shih-Yuan Liu, University of Oregon, US,
Prof. Kirk S. Schanze, University of Florida, US.

\textbf{d. Invitation to FACS member societies to attend the 17GA and 15ACC}

Secretary General sent an invitation to all 30 FACS member societies to inform about the 17\textsuperscript{th} General Assembly (17GA) which will be held on 19 August 2013 during the 15\textsuperscript{th} Asian Chemical Congress (15ACC). The Singapore National Institute of Chemistry by Prof. Andy Hor Tzi Sum, has kindly supported the FACS member representative for 4 nights accommodation and 15ACC registration fee waived. For EXCO members, the SNIC kindly support 6 nights accommodation and 15ACC registration fee waived.

At present, there are 23 chemical societies confirmed to attend the meeting. While, no responses from member societies, including Chemical Society of Vietnam, Iraqi Chemists
Minutes of The 63rd FACS EXCO Meeting

Union, Israel Chemical Society, Mendeleev Russian Chemical Society, Mongolian Chemical Society, Nepal Chemical Society, New Zealand Institute of Chemistry.

e. **List of FACS Member Societies**

The list of FACS member societies are updated on 19/04/2013.

6. **Application of the new member from Turkish Chemical Society**

The President, Prof. Supawan Tantayanon obtained an e-mail on 17/01/2013 from Prof. MEHMET MAHRAMANLIOGLU stated that the Turkish Chemical Society is interested in joining FACS as member society. The approval will be done at the next General Assembly.

7. **FACS Awards 2013 Nomination**

The FACS President, Immediate Past President and President-Elect were the committees for final evaluation. The committees concluded that the FACS Awards 2013 are awarded to four recipients as following:

1. Foundation Lectureship Award 2013 in Organic Chemistry is awarded to Professor Tamio HAYASHI, Institute of Materials Research and Engineering (IMRE), A*STAR, Singapore

2. Distinguished Young Chemist Award 2013 in Physical Chemistry is awarded to Professor Dr. Yu-Guo Guo, Institute of Chemistry, the Chinese Academy of Science, Zhongguancun, North First Street No. 2, Beijing 100190, P. R. China

3. Distinguished Contribution to Chemical Education Award is awarded to Professor Dr. Bhinyo Panijpan, Faculty of Science, Mahidol University Rama 6 Road, Phayathai, Rajthevee, Bangkok 10400, Thailand

   For Distinguished Contribution to Economic Advancement Award 2013, there was no nomination.

4. FACS Citations for contributions to Chemistry in the Asia-Pacific Region is awarded to Professor Dr. San H. Thang, FRACI, Senior Principal Research Scientist, CSIRO Molecular and Health Technologies, Australia

8. **Progress Report of the Preparation for the 15ACC and 17GA**

Dr. Dien Pandiman, Secretary General-Elect report a preparation for the 15th Asian Chemical Congress 2013 (15ACC) under the theme “Chemistry at the Centre of Molecular Science & Nanotechnology” and will held during 19–23 August 2013 at Resort World Sentosa, Singapore (www.15acc.org). The preparation of the 15ACC has been successful with steady progress. As of 16 April 2013, Nobel Laureates and eminent scientists worldwide who have confirmed their participation as plenary and keynote speakers. Initiatives are including “Pioneers from Asia” which will be contributed by 25 eminent scientists who pioneered their research field and made significant contribution in the area. These scientists will be giving “Pioneers from Asia” lectures. Also, 52 young but eminent scientists who made significant contribution in their field and are still in their **upward trajectory** have also confirmed their participation at the 15ACC. These scientists will be giving “Asian Rising Star” lectures. In order to commemorate the birth and evolution of Asian Chemical Congress, 15ACC also invited 7 senior professors who have witnessed the evolution of ACC in the early days to share some anecdotal facts. Currently, there are 45 technical sessions with over 450 invited speakers who have confirmed their attendance. The sessions are including of Assembly of Nano and Microparticles into Functional Materials, Advances in the Chemistry of N-heterocyclic

Among the special sessions organised in conjunction with the 15ACC are 1st Asian Chemistry Research Fair (ACRF-1) Poster Competition, FACS-SNIC Award Lectures, Singapore-French Workshop on Molecular Materials, Editors’ Forum, Asia America Chemical Symposium (A²CS), ACRF-1 Oral Presentations.

The 1st Asian Chemistry Research Fair (ACRF-1) is established to provide opportunities for selected students in the JCs, IPs and Secondary school students to present their research work in a dedicated forum at the 15ACC. All projects will be presented as posters on the first day of the Congress (20th August 2013) and judged by a panel of international researchers comprising Nobel Laureates and eminent scientists.

A maximum of 10 shortlisted projects will be presented as oral lectures at the final day of the Congress (23rd August 2013). All shortlisted projects will be acknowledged at the Congress Banquet. The students who conduct and present the three winning projects will be rewarded with a sponsored trip to an ACS Regional Meeting of their choice in the USA. The prize will cover economy travel, student registration and basic accommodation.

In addition, the “Editors’ Forum” is meant to introduce selected experienced editors of prestigious journals to speak at the Forum, share their experiences as editors, and give advice to many young and new authors especially in Asia. It will also allow conference delegates to meet the editors face-to-face to discuss issues relating to publishing papers in the top journals in the world. After the lecture, these editors will also take part in a special interactive forum created for the conference participants. They may of course take this opportunity to introduce the unique features of their Journal (& Society) to our participants who often face difficult


The Asia America Chemical Symposium (A2CS) on Advanced Materials will feature 10 speakers from ACS and FACS. The confirmed speakers are Chin Han Chan of Universiti Teknologi MARA, Malaysia, Kazunari Domen of The University of Tokyo, Japan, Satish Kumar of Georgia Institute of Technology, USA, Jae Sun Lee of Pohang University of Science and Technology, South Korea, Shih-Yuan Liu of University of Oregon, USA, Yi Lu of University of Illinois, USA, Kian Ping Loh of National University of Singapore, Singapore, Ramille N. Shah of Northwestern University, USA, Thawatchai Tantulani of Chulalongkorn University, Thailand

The organising committee is committed to offer a selected number of travel bursaries ranging from S$200 to S$1,000 to oral and poster presenters from developing countries to participate at the 15ACC. Priority will be given to students and early-career researchers from under-developed communities. Evaluation is based on quality of science presented and finance needs. The bursary is awarded on a strictly competitive basis. To be eligible, all applicants must submit their abstracts by 30 March 2013 and register online by 15 April 2013, and complete the attached application form. All applications forms must reach the organiser by 15 April 2013. All awards will be announced by 15 June 2013, and cash disbursement will take place on site.

As tradition in ACC, the 17th FACS General Assembly (17GA) will take place on 19 August 2013, and the 64th FACS EXCO Meeting will take place on 20 August 2013 at Capricorn, Resorts World Sentosa. The FACS Awards Lectures for the “FACS Foundation Lectureship Award” “Distinguished Young Chemist Award”, “Distinguished Contribution to Economic Advancement Award”, “Distinguished Contribution to Chemical Education Award, and FACS Citations Award for contributions to Chemistry in the Asia-Pacific Region ” will take place at the 15ACC.

In conclusion, preparation for the 15ACC is well underway and according to schedule. The Organising Committee is expecting to exceed the target of 1,200 delegates. More poster submissions are encouraged, and the Committee would like to remind all delegates to book their hotel accommodation early through the Secretariat or via the online hotel booking form on the 15 ACC website: www.15acc.org as there are limited rooms available.

9. Report from the Treasurer
Datin Dr. Zuriati Zakaria, FACS Treasurer sent a report as following:

A. The treasurer reported the FACS Australian accounts as follows:-

The balance of the FACS account kept in Australia under RACI General Ledger (#No. 2-4170) as reported at the FACS 16th General Assembly in Bangkok on September 5, 2011 is AUD 48, 748.61. The treasurer have written to RACI for an update of this account.

B. The treasurer reported the FACS Malaysian accounts as follows:-
Minutes of The 63rd FACS EXCO Meeting

a. The Statement as from 30 September 2012 to 31 March 2013 of the Malaysian Account MAYBANK 562535-177723 is as follows:-

<table>
<thead>
<tr>
<th>RECEIPTS</th>
<th>PAYMENTS</th>
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<tbody>
<tr>
<td>Balance b/f as of 30/09/2012</td>
<td>Balance c/f</td>
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<tr>
<td>12,963.67</td>
<td>20,077.70</td>
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<td>Subscription received from</td>
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<td>7,114.03</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>RECEIPTS</th>
<th>PAYMENTS</th>
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<tbody>
<tr>
<td>20,077.70</td>
<td>20,077.70</td>
</tr>
</tbody>
</table>

a. The fixed deposits at MBB NO. 212530064600 is RM 259,565.42

A. Total Amount in FACS accounts in USD for September 2012
   a. Balance at Australian account AUD 48, 748.61 = USD 50,432.69
   b. Balance at Malaysian account RM 20,077.70 = USD 6602.39
   c. Fixed Deposit in Malaysia RM 259,565.42 = USD 85,355.43
   d. TOTAL = USD 142,390.51

B. Payment have been received from the following:-

<table>
<thead>
<tr>
<th>Member Societies</th>
<th>Year</th>
<th>USD</th>
<th>RM</th>
<th>Cleared on</th>
</tr>
</thead>
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<td>Chemical Society Located in Taipei</td>
<td>2011 &amp; 2012</td>
<td>1,200.00</td>
<td>3,544.26</td>
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<td>1,838.80</td>
<td>14/03/2013</td>
</tr>
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</table>

Total 7,114.03

C. The following have not paid the FACS Annual Subscriptions for the years indicated:
   a. Bangladesh Chemical Society 2011, 2012 USD 240
   b. Institute of Chemistry, Ceylon 2012 USD 120
   d. Himpunan Kimia Indonesia 2012 USD 120
   e. The Israel Chemical Society 2012 USD300
   f. Kuwait Chemical Society 2012 USD 600
   g. Philippines Federation of Chemistry Societies 2012 USD 120
   h. The Saudi Chemical Society 2011, 2012 USD 1200
   i. Chemical Society of Vietnam 2012 USD 120

Total Debts for 2012 = USD 3080

D. Invoices for the FACS subscription for 2013 have been sent to 23 member societies. Expected Subscription for 2013 = USD 7200.

E. The IUPAC subscription for the year 2013 to the amount of USD 50 will be paid in the month of May.

F. The treasurer would like to request the approval of the EXCO members to reimburse the President for the following costs:-
   a. Postage cost to send the memorandum of Understanding to the Kazan National Research Technological University, Kazan,Tatarstan, Russian to the amount of THB 2086.
   b. A roundtrip ticket from Bangkok to Kuala Lumpur to attend a meeting with the Rector of Kazan National Research Technological University, Kazan,Tatarstan, Russian
Minutes of The 63rd FACS EXCO Meeting

to discuss about the collaboration of KNRTU with FACS. The trip cost is THB 17,193.36 (the flight cost is THB 11,445 and the hotel cost THB 5748.36).

I. The status of member societies Annual Subscription is shown in Appendix 1.

**Appendix 1. FACS YEARLY SUBSCRIPTION LIST** (updated as at 18/03/2013)

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# This subscription is retained in the member country for FACS meeting costs
S This subscription is retained in the member country for secretarial costs
R This cheque was returned due to date expired
W Subscription waived by EXCO
? Status uncleared
inv Invoice was sent
10. Report from the Coordinator of Projects

Datuk Dr. Ting-Kueh Soon, Coordinator of Projects contacts the Director of FACS Projects and requested for report of activities during 2011-2012. There are two Projects sent their reports as following:

10.1 ASIAN NETWORK OF RESEARCH ON ANTIDIABETIC PLANTS (ANRAP)

10.1.1 FULL ACTIVITY REPORT of ANRAP in 2011

Director: Prof M Mosihuzzaman

Two major events highlighted the ANRAP activities in 2011. On invitation from the organizers of the 14ACC, ANRAP got its first international exposure by organizing a Full-day Mini Symposium during the 14ACC held in Bangkok during 5-8 September 2011. Holding of the Mini Symposium in Bangkok was made possible by a special grant from the ISP. The second major event was the organization of the ANRAP Workshop with the support of AFASSA during 31 Dec 2011-03 January 2012. The 2nd week-long ANRAP training workshop was held on 23-28 July, 2011, in the Research Division, BIRDEM, Dhaka. Fourteen scientists from different public and private laboratories participated. During 8-9 April, 2011 the 2nd Indian National Seminar was held at Guwahati, India. ANRAP Fellowship programme. Exchange visit of scientists and support to attend different conferences/seminars by scientists continued.

1. Fellowship Program

Under the ANRAP Fellowship program 2 Fellows were supported in 2011 to carry out research work in BIRDEM and BIHS.

a) Mr Ranzu Ahmed Choudhury, a Research Fellow at BIHS and an M Phil student is being provided with partial support since July 2011. He is working at BIRDEM, BIHS and DU on antidiabetic herbal product ‘Salajeet’. Some solvents and chemicals have also been bought from ANRAP fund to facilitate his research work.

b) Mr Laxman Bharati, Teaching Assistant, Dept of Pharmacy, Institute of Medicine, Tribhuvan University, Nepal has come to Dhaka in December 2011 with a 3-month ANRAP Fellowship. He is working in BIRDEM on investigation of hypo-/antihyperglycemic activities of Berberis-aristala a Nepalese plant.

2. Exchange visits

Prof Leiv K Sydnes from dept of Chemistry, University of Bergen, Norway visited Bangladesh from 01-03 November 2011 to discuss various activities of ANRAP and ICNPR and research cooperation between Bangladesh and Norway. Dr Bishnu Prasad Sarma from Govt Ayurvedic College, Assam, India visited Bangladesh from 11-16 December 2011 to discuss collaboration between Dhaka and Assam, India.

3. Attendance in Seminars/Conferences/Workshops

a) The following participants were supported to attend the 2nd Indian national Seminar on ‘Plants in Diabetes – Prospects and Challenges’ that was held in Guwahati, India on 8-9 April 2011.

2nd Indian National Seminar

(i) Prof M Mosihuzzaman(Chairman, ANRAP, Bangladesh)
(ii) Prof AK Azad Khan (Secretary General, ANRAP, Bangladesh)
(iii) Prof Abdur Rashid from Bangladesh
b) ANRAP Mini Symposium was held in Bangkok, Thailand on 5-9 September 2011. The following persons were supported by ANRAP.

**ANRAP Mini Symposium**

(vii) Prof M Mosihuzzaman (Chairman, ANRAP, Bangladesh)
(viii) Prof AK Azad Khan (Secretary General, ANRAP, Bangladesh)
(ix) Prof Biswapati Mukherjee (ANRAP Board member, India)
(x) Prof M Iqbal Choudhary (ANRAP Board member, Pakistan)
(xi) Prof Nilufar Nahar from Bangladesh
(xii) Prof Liaquat Ali from Bangladesh
(xiii) Prof Amin Ismail from Malaysia
(xiv) Dr GAS Premakumara from Sri Lanka
(xv) Dr Fawzi Mahomoodally from Mauritius
(xvi) Prof Begum Rokeya from Bangladesh
(xvii) Prof Basavaraj K Nanjwade from India
(xviii) Dr Atia Tul Wahab from Pakistan
(xix) Mr Ivan L Lawag from Philippines

c) Prof Begum Rokeya attended the 71st American Diabetes Association Meeting held in San Diego, California, USA on 24-28 July, 2011.

d) Prof M Mosihuzzaman attended the IUPAC General Assembly in Puerto Rico in August 2011. Decision was taken at the ChemRAWN meeting that a ChemRAWN conference on Herbal Medicine will be held in the end of 2013 in Dhaka.

e) Prof Liaquat Ali from Bangladesh attended the 47th EASD meeting in Lisbon, Portugal held on 12-16 September 2011. There were thirteen researchers who presented their papers from BMRG, BIRDEM in the 47th EASD meeting.

f) Prof M Mosihuzzaman attended the 21st International Diabetic Federation (IDF) Meeting in Dubai on 4-9 December, 2011.

4) **Organization of Scientific Meetings:**

4.1 **The 2nd Indian National Seminar**

The 2nd Indian National Seminar on Plants in Diabetes – Prospects and Challenges was supported by ANRAP. The Seminar was jointly organized by the CSIR-North East Institute of Science & Technology, Jorhat and Education, Research and Development Foundation, Gauhati, was held successfully on the 8th and 9th April 2011 at Gauhati University, India. Around 300 participants registered from Nepal, India and Bangladesh attended the meeting. A total of 4 plenary lectures were delivered by eminent scientists from India and Bangladesh. Thirteen lectures were presented by invited guests/guest lecturers from India and Bangladesh. Nearly 30 scientific papers were presented in the oral paper sessions of the seminar, while 20 papers were presented as Posters. (Annex I)

4.2 **2nd ANRAP Training Workshop**

As the 1st ANRAP training workshop in 2010 created lot of enthusiasm and interest among the local scientists, ANRAP decided to organize a yearly workshop on development of diabetic
model rats and their use for evaluating plant materials for antidiabetic properties. A brochure on the 2nd ANRAP workshop on ‘Chemical studies and bioassay of antidiabetic plant materials’ was circulated in May 2011. There was again a great response from different Public and Private Universities, Institutions, Pharmaceutical companies and the traditional practitioners. The second workshop was held on 23-28 July 2011, in the Research Division, BIRDEM, Dhaka, Bangladesh.

The main objectives of this workshop was to give hands-on training on development of diabetic model rats and their use for evaluating antidiabetic properties of plant materials as well as in performing chemical studies of antidiabetic plant materials. The workshop was attended by 14 participants and a few more applications had to be refused due space constraint. The participants were from Public and Private Universities, Pharmaceutical companies and from the traditional system of medicine.

The workshop was formally inaugurated by Prof M Mosihuzzaman, Chairman, ANRAP. Prof Begum Rokeya (Dept of Pharmacology, BIRDEM) with her trained associates conducted the practical Sessions of the Workshop including development of diabetic rat models and how to use the whole rats and their organs for bioassay. The practical Sessions of the chemical part of the workshop, including extraction of plant materials, their fractionation and chromatographic techniques, was conducted by Dr Sabrina Murshed (Dept of Biochemistry & Cell Biology, BIRDEM) with her associates.

In the Theoretical Sessions, Lectures were delivered by experienced persons from BIRDEM and BIHS. (Annex II)

ANRAP Mini Symposium

The Chemical Society of Thailand (CST) and the Federation of Asian Chemical Societies (FACS) organized the 14ACC (14th Asian Chemical Congress) in Bangkok, Thailand on 5-8 September 2011 at the Queen Sirkit National Convention Center. ANRAP was invited to hold a Mini Symposium during 14ACC. Receiving positive response from ANRAP Board members and generous financial support from ISP, a Full-day Mini Symposium was organized by ANRAP on 7 September 2011 during the 14ACC. A total of 13 speakers from Bangladesh, India, Sri Lanka, Malaysia, Mauritius, Philippines and Pakistan presented their research work during the Mini Symposium. The Symposium was well attended and lively discussions followed important presentations.

A Board meeting of ANRAP was also held in the same evening followed by a dinner with the invited speakers. (Annex III)

ANRAP Training Workshop

A workshop on ‘Chemical and Biological Studies on Bioactive Plant Materials’ was held in Bangladesh Institute of Health Sciences (BIHS), Mirpur, Dhaka, Bangladesh during 31 December 2011-03 January 2012. ANRAP organized the Workshop with substantial support from AFASSA (Africa, Asia and South America) Coordinating Group in Natural Product Chemistry. AFASSA supported the Workshop by bearing the cost of participation of six Resource Persons from Sri Lanka. Mauritius, Pakistan and Nepal. Inauguration and Theoretical Lectures were held at the BIHS Auditorium while the Practical Sessions were held in BIRDEM (Bioassay) and BCSIR (chemistry and spectroscopy). Twenty nine registered scientists took
part in the Workshop. The Inauguration and the first Plenary Lecture by the eminent scientist and ANRAP Board member Prof M Iqbal Choudhary, was attended by about 60 scientists.

5). Eighteen Meeting of the ANRAP Board

The eighteen meeting of ANRAP Board was held in Bangkok, Thailand on 08 September 2011 at 17.00 hrs with Prof M Mosihuzzaman, Chairman of ANRAP Board in the chair. The meeting was attended by the General Secretary of ANRAP Board, Prof AK Azad Khan, and the Members of the ANRAP Board Prof Biswapati Mukherjee, and Prof Nilufar Nahar, Prof Liaquat Ali, Prof Begum Rokeya.

The members discussed the activities of ANRAP. The members also endorsed the idea of conducting hands-on training programme for developing diabetic model rats and using them for various bioassay of plant extracts.

The Board endorsed the budget for 2012 and thanked Prof AK Azad Khan for preparing a forward looking budget.

The Chairman then concluded the Board meeting with thanks to the members.

6) A book chapter has been published in the book: “Recent Advances in the Pathogenesis, Prevention and Management of Type 2 Diabetes and its Complications” Edited by Mark Zimering, Chapter 20 pgs 375-390. The title of the Chapter was “Emerging Challenge of Type 2 Diabetes: Prospects of Medicinal Plants” written by Rokeya Begum, Mosihuzzaman M, Azad Khan AK, Nilufar Nahar and Ali Liaquat.

10.1.2 ACTIVITY REPORT of ANRAP during Jan-July 2012

Director : Prof M Mosihuzzaman

Two major events highlighted the ANRAP activities in 2012. Major event was the organization of the ANRAP Workshop with the support of AFASSA during 31 Dec 2011-03 January 2012. The 2nd week-long ANRAP training workshop was held on 07-12 July, 2012, in the Research Division, BIRDEM, Dhaka & BCSIR, Dhaka. Fourteen scientists from different public and private laboratories participated. ANRAP Fellowship programme. Exchange visit of scientists and support to attend different conferences/seminars by scientists continued throughout.

I. Regional Collaboration

a) Fellowship Program.

Under the ANRAP Fellowship program, fellows were selected in 2012 to conduct collaborave studies in various Institutes of the region.

b). Exchange visits

1. Prof Dr Geoffrey Alan Cordell, Professor Emeritus University of Illinois, Chicago, Illinois, USA visited Bangladesh from 21-24 February 2012 to discuss various activities of ANRAP and ICNPR and research cooperation between Bangladesh and USA. ANRAP organized a Seminar for him. Geoffrey A. Cordell delivered a lecture on "Future Developments of Traditional Medicine" was held in Bangladesh Institute of health Sciences (BIHS), Mirpur, Dhaka on 23 February 2012.

2. Dr. Syed Ibrahim Rizvi, Associate Professor, Department of Biochemistry, University of Allahabad, India visited Bangladesh from 28 April -03 May 2012 to discuss various activities of ANRAP and ICNPR and research cooperation between Bangladesh and India. ANRAP organized a Seminar for him. Dr Ahmed Rizvi delivered a lecture on "Oxidative stress during
Minutes of The 63rd FACS EXCO Meeting

Aging: can Polyphenol Supplementation Help?” was held in Bangladesh Institute of health Sciences (BIHS), Mirpur, Dhaka on 02 May 2012.

c) Attendance in Seminars/Conferences/Workshops

1. A workshop on ‘Chemical and Biological Studies on Bioactive Plant Materials’ was held in Bangladesh Institute of Health Sciences (BIHS), Mirpur, Dhaka, Bangladesh during 31 December 2011-03 January 2012. The 5 participants were supported by AFASSA.
   i) Dr Chandima Wijesiriwardena, Industrial Technology Institute, Sri Lanka
   ii) Dr Sadhana Amatya, Tribhuvan University, Kathmandu, Nepal
   iii) Prof Muhammad Iqbal Choudhary, University of Karachi, Pakistan
   iv) Dr Syed Ghulm Musharraf, University of Karachi, Karachi, Pakistan
   v) Dr Shabana U Simjee, University of Karachi, Karachi, Pakistan
   vi) Ms Regina Bwire, University of Science & Technology, Nairobi, Kenya

II. Organization of Scientific Meetings:

ANRAP Training Workshop

A workshop on ‘Chemical and Biological Studies on Bioactive Plant Materials’ was held in Bangladesh Institute of Health Sciences (BIHS), Mirpur, Dhaka, Bangladesh during 31 December 2011-03 January 2012. ANRAP organized the Workshop with substantial support from AFASSA (Africa, Asia and South America) Coordinating Group in Natural Product Chemistry. AFASSA supported the Workshop by bearing the cost of participation of six Resource Persons from Sri Lanka, Mauritius, Pakistan and Nepal. Inauguration and Theoretical Lectures were held at the BIHS Auditorium while the Practical Sessions were held in BIRDEM (Bioassay) and BCSIR (chemistry and spectroscopy). Twenty nine registered scientists took part in the Workshop. The Inauguration and the first Plenary Lecture by the eminent scientist and ANRAP Board member Prof M Iqbal Choudhary, was attended by about 60 scientists.

2nd ANRAP Training Workshop

3rd ANRAP workshop on ‘Chemical studies and bioassay of antidiabetic plant materials’ was held on 07-12 July 2012, in the Research Division, BIRDEM, Dhaka, Bangladesh & BCSIR, Dhaka

The main objectives of this workshop was to give hands-on training on development of diabetic model rats and their use for evaluating antidiabetic properties of plant materials as well as in performing chemical studies of antidiabetic plant materials. The workshop was attended by 14 participants and a few more applications had to be refused due space constraint. The participants were from Public and Private Universities, Pharmaceutical companies and from the traditional system of medicine.

Evaluation of 6 antidiabetic herbal Medicine:

Six herbal preparations which are now being used by the practitioners i.e i) Dolabi, ii) Salajeet, iii) Diagym, iv) Jambudderist, v) Diabetic China Gold and vi) Herbal Tea have been screened for hypo-/antihyperglycemic properties on blood glucose levels of Type 2 rats. Male Long-Evans rats bred at BIRDEM animal house were used for the study. Type 2 diabetes was induced by a single ip injection of STZ to 48 hours old pups & 3 months later after confirming with an OGTT type 2 rats were selected for experiment. The screening result showed that Diagym significantly decreased serum glucose level when fed simultaneously with glucose load as well as when fed thirty minutes prior to glucose load. Based on the screening results, Diagym and
Salajeet were taken for chronic study. For this purpose two doses of Diagym and Salajeet (200 mg/kg bw and 400mg/bw) were fed orally to Type 2 rats for 4 weeks with a single feeding. Results of chronic feeding showed that Diazym (400mg/kg) reduced serum glucose levels of Type 2 rats. Favorable effect on serum lipids was also found with Diazym. Chemical investigation regarding the presence of toxic metals like Arsenic, Cadmium, Copper, Lead, Mercury and manganese in these six herbal drugs were analyzed by Atomic Absorption Spectrophotometry. TLC and HPLC profiles of some of these herbal drugs were also done. Identification of active plant(s), active agents and marker compounds are in progress.

**Drug testing for Hamdard:**

During the record period effects of two new antidiabetic herbal preparations (AD1 and AD2) provided by Hamdard Laboratories on glycemic, insulinemic and lipidemic status in type 2 diabetic model rats were studied. The study was conducted on adult Long-Evans rats of both sexes (weighing 180-220g) from BIRDEM animal house to whom Type 2 diabetes was induced by injecting Streptozotocin at the age of 2 days. In addition to biochemical parameters histopathological investigations were also carried out. Data from the experiments were analyzed using SPSS and the results were submitted to Hamdard Laboratories. ANRAP received Tk 4 lacs (Tk four lacs only) from Hamdard as the investigational cost.

Publications were published as following:


A book chapter has been published in the book: “Recent Advances in the Pathogenesis, Prevention and Management of Type 2 Diabetes and its Complications” Edited by Mark Zimering, Chapter 20 pgs 375-390. The title of the Chapter was “Emerging Challenge of Type 2 Diabetes: Prospects of Medicinal Plants” written by Rokeya Begum, Mosihuzzaman M, Azad Khan AK, Nilufar Nahar and Ali Liaquat.

**10.2 Update on FACS Project on “History and Archives” Activities and Plan for 2012 - 2014**

Director: Barry N Noller

**Proposed Activities for 2012 – 2014**

Professor Barry N Noller proposed to continue completion of the digitising of the minutes of the General Assembly and EXCO meetings from 1978-2010 by locating the very early minutes, e.g. at IKM in Malaysia, which are not readily accessible. There is still an access delay in getting the minutes copied from the archives at Melbourne University.

The completion of digitising the FACS Newsletters is feasible will need to continue beyond 2012 as will the locating of conference brochures. Location of early photos of FACS
EXCO members and meetings to create a permanent record also needs to continue and may best involve other people in the process.

The proposed supporting are based on the cost of archiving Professor Jack Cannon’s early records of FACS formation, the Inaugural meeting in Bangkok in 1978 and 1979 and attendance at the 2nd EXCO meeting in Baghdad 1980. An FACS contribution could become the lever to securing other contributions to cover the complete costs. Professor Cannon is now 85 and not very well. It would be a fitting tribute to his role in the formation of FACS to assist with preserving his records. As indicated at the 16th FACS Biennial General Assembly in Bangkok in September 2011 that the Director would seek support from various individuals who has contact with Professor Cannon in the early days.

Financial use of Seed Money
It is proposed that seed money of $500 for 2013-2014 to digitise FACS Newsletters up to the year 2000. The availability of newsletters is as follows:


10.2.1 Update on FACS Project on “History and Archives” Activities and Plan for 2012 - 2014

Director: Barry N Noller

1. Outline
FACS is now more than 30 years old and retention of records and historical details remains an issue as some details have started to disappear.
FACS EXCO at Seoul in 2005 has requested to create a project on History and Archives.

Key records and details to document and preserved are as follows:

(i) Records of General Assemblies, EXCO meetings and Council meetings
(ii) Lists of Activities (ACCs and meetings), Office Bearers and Awardees
(iii) FACS Newsletters
(iv) Conference brochures
(v) Photographs
(vi) FACS Publications
(vii) Other items of historical significance

2. Name of Project
“History and Archives”
The project will gather and preserve, including digitise, historical material of the FACS

3. Staff and Structure
The Director will be Barry N Noller (Australia)
It was suggested to appoint a Co-Director and to have a representative/contact from each member society (still needed). Some key people from first member countries to assist with locating historical materials would be beneficial.
Minutes of The 63rd FACS EXCO Meeting


(i) Compile complete lists of Activities (ACCs and meetings), Office Bearers and Awardees.

(ii) Digitise Records of General Assemblies, EXCO meetings and Council meetings (partly completed). The FACS minutes from the period 1985-1991 are held in the archives of the University of Melbourne History project. Arrangements have been made for high quality digital copying at the University of Melbourne. The FACS minutes from 1979-1985 held at IKM or with Datuk Dr M Mohinder Singh. Arranging to visit to Kuala Lumpur was planned for 2009 but not been possible yet. The 1991 -1999 records variously at IKM, RACI or with Dr Noller. Early correspondence on the formation of the FACS. Records of Professor Jack Cannon and Datuk Dr M Mohinder Singh. Arrangements are being made to copy these letters and minutes but not yet undertaken.

(iii)  Digitise FACS Newsletters and FACS Publications (in progress)

(iv) Collect and digitise Conference brochures (in progress).

(v) Digitise Photographs (in progress; discussions are in progress with the son of Professor Hitoshi Ohtaki to gain access to his large photo collection. Professor John Webb has been approached to get access to his photos from the 7th FACS EXCO Meeting held 29 March 1983 in Baghdad, Iraq; there are many other sets of photographs).(in progress)

(vi) Collection other items of historical significance. The preservation of the earliest records of the FACS (Jack Cannon and Mohinder Singh) is also being investigated. Professor Wal Taylor has passed away (1 Jan 2009) in Sydney, Australia and discussions are now in progress to try to bring together the records of Jack Cannon and Wal Taylor as the two worked on parallel on natural products chemistry for many years and particularly 1970-1990. It was intended to visit Malaysia but the visit is postponed till late 2009 or early 2010.(in progress)

(vii) FACS Publications. There are a number of books, reports and proceedings produced before 1999. Early items (pre 1989) need to be identified with Datuk Dr M Mohinder Singh.(in progress)

5. Activities 2009 - 2010

It was proposed to complete digitising the minutes of the General Assembly and EXCO meetings from 1978-2009 will be investigated. Arrangements have been made to implement the copying of early minutes in early July 2010 during a visit to Melbourne where the records are kept. This contact was made and details of costs sought. An estimate of the quantity of material was requested and was completed in January 2011. There was an interruption to activities due to the Brisbane flood. The final supply of digitized FACS minutes held at the University of Melbourne is awaited.

The digitising the FACS Newsletters is feasible and is now being investigated during the second half of 2011.

A number of conference brochures are located. A list is being created with those held so that the remainder can be sought for the collection.

Prof. Supawan Tantayanon requested photos of former presidents of FACS in January 2011 brought to our attention the need to locate original photos of the early meetings.

Prof.Noller was able to meet Prof Jack Cannon in Perth during January 2011 and discuss with
him the possibility of putting all his early material into archives over the next year subject to generating funds to do this. He advised that he has no photos.

6. Activities for 2010 - 2012

Completion of the digitising of the minutes of the General Assembly and EXCO meetings from 1978-2010 is in progress at the time of writing. Arrangements had been made to implement the copying of early minutes in early July 2010 during a visit to Melbourne where the records are kept. A firm quote to do the copying has been obtained from the Archives at University of Melbourne.

The digitising the FACS Newsletters is feasible but will need to continue beyond 2011.

A number of conference brochures are located. A list is being created with those held so that the remainder can be sought for the collection.

Location of early photos of FACS EXCO members and meetings to create a permanent record are being compiled.


It is proposed to continue completion of the digitising of the minutes of the General Assembly and EXCO meetings from 1978-2010 by locating the very early minutes, e.g. at IKM in Malaysia, which are not readily accessible.

The completion of digitising the FACS Newsletters is feasible will need to continue beyond 2012 as will the locating of conference brochures.

Location of early photos of FACS EXCO members and meetings to create a permanent record also needs to continue and may best involve other people in the process.

10.3 FACS Project

Financial Proposal from Asian Network of Metallic Chemistry (ANMC) (as of March 27, 2013)

1. Name of Project: ANMC (Asian Network of Metallic Chemistry)

2. Staffs and Structure:

   Director: Yasushi Nishihara, Okayama University, Japan
   Co-Director: Fu-Yu Tsai, National Taipei Institute of Technology, ROC
   Co-Director: Yanzhong Li, East China Normal University, China
   Co-Director: Han Vinh Huynh, National University of Singapore, Singapore
   Co-Director: Jaesook Yun, Sungkyunkwan University, Republic of South Korea
   Co-Director: Warinthorn Chivasiri, Chulalongkorn University, Thailand

3. Proposal of Activities and Expected Outcome:

   The field of metal compounds is undergoing a revolution based on major recent advances, in particular, in synthetic chemistry. Highly efficient and selective synthesis involving metal compounds has become important areas which serve as the key to development of organic chemistry, pharmaceutical chemistry, and material science. Intense interest in this topic has led to many important advances including the discovery of several new reactions by which metal compounds play an important role.

   The first objective of this project is to elucidate reactions driven by metal compounds that will generate novel strategies for creation of new molecules. In addition, we are studying the reaction pathway of the bond formation reaction and the synthesis of functionalized organic molecules and polymers. The second objective of this project is to study the basic
reaction types of metal compounds. We are particularly interested in reactions that underlie the selective, catalytic functionalization of organic molecules. Our synthetic designs of metal compounds are guided by principles of coordination chemistry that catalyze or mediate chemical reactions in molecular conversion. We can be able to capture the functional essence of these metal compounds and to provide pure synthetic organometallic complexes that control reactivity and selectivity in the organic reactions and polymerization. To meet the massive scales required for sustainable energy cycles and minimal environmental impact, we are also developing new catalytic systems that rely on cheap and plentiful first-row transition metals.

We are pursuing several parallel strategies for catalysis systems using metal compounds: 1) transition metals, lanthanides, main group elements, 2) organometallic catalysis: new synthetic methods, enantioselective catalysis, C-H bond activation and functionalization, alkene metathesis, cascade reactions, 3) polymerization and polymers, 4) metal- and heteroatom-based molecular materials, 5) catalysis and organometallics for green chemistry and energy, 6) bioinorganics, bioorganometallics in biology, and 7) theoretical and physical methods, mechanisms in organometallic chemistry.

We have positively acted to answer strong requests by several countries and held the satellite symposium in Taiwan, Malaysia, Cambodia, and Thailand. In recent two years (2011-2012), we supported the symposia held in various Asian countries on occasions of regional and international conferences and meetings. The activity area is scheduled to be expanded further by our policy in the future. Since the ANMC members have extended to a wide variety of Asian countries and Japanese researchers as well as Singaporean and Saudi Arabian chemists have already participated in the satellite symposia in ACC held in Thailand September, 2011. We believe that the range of our activity has broadened at ACC of Thailand. In addition, last February we have called Indian Chemical Society that did not attend the FACS this year and we got the answer that Indian Chemical Society would participate in the future. Since we held the two symposia in Malaysia and Cambodia last October, the width of ANMC activity is wider than any activity of FACS in regard to that Cambodia is non-member of FACS.

I. Symposia:
1) 8th Asian Network of Metal Chemistry: The symposium will be held in November, 2013 in Beijing, China. More than 50 chemists would participate.

II. Exchange Visits
1) Prof. Yasushi Nishihara, Okayama University, Japan and Prof. Tamotsu Takahashi, Hokkaido University, Japan will visit Prof. Han Vinh Huynh, National University of Singapore, Singapore on August 20, 2013.

4. Financial Briefs including the use of Seed Money:
1) Support from FACS (500 US dollar)
Seed money is used for support of traveling fee for invited speakers.
2) Cost for the project symposium
The cost for the symposium will be supported by the participants and companies.

5. Recommendation:
This project will be supported Chinese Chemical Society (According to Prof. Lu Long).
11. Report from the Directors of Scientific Affairs
   Prof.Dr. Kyung Byung Yoon couldn’t attend the 63rd EXCO meeting, however, he has coordinated for many of Symposium as shown in section 8.

12. Report from the Editor of Publications
   Prof. Dr. Long Lu sent a report and the proposed Newsletter as following:

1. Financial balance of FACS Newsletter 2012
   1000 copies of FACS Newsletter 2012 were printed in full color. The Newsletter was distributed to all member societies, life-time members and the some cooperation organizations as listed in the following table. Financial balance is reported as below. Total Expense is 20,470.50 RMB (USD3300) including 13,500.00RMB for printing 1000 hard copies in full color, which was covered by Shanghai Institute of Organic Chemistry and 7470.50 RMB for shipping which was financially supported by Shanghai TL Chemical Co., Ltd.
   Please send the FACS seed money (USD 1000) to SIOC account:

<table>
<thead>
<tr>
<th>Beneficiary’s Bank</th>
<th>Beneficiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Bank Of China, Shanghai Branch</td>
<td>Shanghai Institute Of Organic Chemistry, Chinese Academy Of Sciences</td>
</tr>
<tr>
<td>A/C No: 033924-00873089036</td>
<td>Address: 354 Lingling Road, Shanghai 200032, P. R. China</td>
</tr>
<tr>
<td>SWIFT: ABOCCNB0J90</td>
<td>Fax: 86-21-64166128</td>
</tr>
<tr>
<td>Tel: 86-21-54925114</td>
<td></td>
</tr>
</tbody>
</table>

Intermediary Bank
Wachovia Bank, National Association New York International Branch
SWIFT: PNBPUS3NNYC

2. Distribution of FACS Newsletter 2012

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<thead>
<tr>
<th>No</th>
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<tr>
<td>1</td>
<td>The Royal Australian Chemical Institute, Inc.</td>
<td>25</td>
<td>19</td>
<td>Nepal Chemical Society</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Bangladesh Chemical Society</td>
<td>15</td>
<td>20</td>
<td>New Zealand Institute of Chemistry Inc.</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Brunei Darussalam Institute of Chemistry</td>
<td>15</td>
<td>21</td>
<td>The Chemical Society of Pakistan</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Cambodian Chemical Society</td>
<td>15</td>
<td>22</td>
<td>Philippine Federation of Chemistry Societies</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>The Chinese Chemical Society</td>
<td>25</td>
<td>23</td>
<td>The Institute of Chemists PNG</td>
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<tr>
<td>6</td>
<td>Chemical Society of the South Pacific (Fiji)</td>
<td>15</td>
<td>24</td>
<td>The Mendeleev Russian Chemical Society</td>
<td>10</td>
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<tr>
<td>7</td>
<td>Hong Kong Chemical Society.</td>
<td>25</td>
<td>25</td>
<td>Singapore National Institute of Chemistry</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>Indian Chemical Society</td>
<td>10</td>
<td>26</td>
<td>Institute of Chemistry, Ceylon</td>
<td>15</td>
</tr>
<tr>
<td>9</td>
<td>Chemical Research Society of India</td>
<td>25</td>
<td>27</td>
<td>The Saudi Chemical Society</td>
<td>15</td>
</tr>
</tbody>
</table>
3. Proposal for the coming issue of FACS Newsletter 2013

The coming issue of FACS Newsletter 2013 is proposed and planned to be published at the end of June. The contents are given below.

**Proposal of FACS Newsletter 2013**

<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages</td>
<td>1</td>
</tr>
<tr>
<td>Massage from the President (2011-2013) (By Prof. Supawan Tantayanon)</td>
<td></td>
</tr>
<tr>
<td><strong>FACS Executive Council (2011-2013)</strong></td>
<td>2</td>
</tr>
<tr>
<td>FACS EXCO Members (2011-2013)</td>
<td>2</td>
</tr>
<tr>
<td><strong>FACS Projects and the Project Directors (2011-2013)</strong></td>
<td>3-4</td>
</tr>
<tr>
<td>FACS Projects and the Project Directors (2011-2013) (By Prof. Ting-Kueh Soon)</td>
<td>3-4</td>
</tr>
<tr>
<td><strong>FACS Activities</strong></td>
<td>5-22</td>
</tr>
<tr>
<td>Minutes of the 60th EXCO Meeting (By Prof. Supa Hannongbua)</td>
<td>5-10</td>
</tr>
<tr>
<td>Minutes of the 61st EXCO Meeting (By Prof. Supa Hannongbua)</td>
<td>11-16</td>
</tr>
<tr>
<td>Minutes of the 62nd EXCO Meeting (By Prof. Supa Hannongbua)</td>
<td>17-22</td>
</tr>
<tr>
<td><strong>FACS Awards 2013</strong> (Profiles) (By each Awardee)</td>
<td>23-42</td>
</tr>
<tr>
<td>FACS Foundation Lectureship Award 2013 in Organic Chemistry</td>
<td>23-26</td>
</tr>
<tr>
<td>Distinguished Young Chemist Award 2013 in Physical Chemistry</td>
<td>27-30</td>
</tr>
<tr>
<td>Distinguished Contribution to Economic Advancement Award 2013 (no nomination for 2013)</td>
<td>31-34</td>
</tr>
<tr>
<td>Distinguished Contribution to Chemical Education Award 2013</td>
<td>31-34</td>
</tr>
<tr>
<td>Citations for Contributions to Chemistry in the Asia-Pacific Region</td>
<td>35-38</td>
</tr>
<tr>
<td><strong>Profiles of Member Societies</strong> (By Each Society)</td>
<td>43-63</td>
</tr>
<tr>
<td>Except for SNIC BCS, CRSI and CCS (published in the issue of 2012)</td>
<td></td>
</tr>
<tr>
<td><strong>Directories of Member Societies</strong> (Contact)</td>
<td>64</td>
</tr>
<tr>
<td>Other Member Societies (If no profile)</td>
<td>65</td>
</tr>
<tr>
<td><strong>Announcements</strong></td>
<td>66-67</td>
</tr>
<tr>
<td>The 15th Asian Chemical Congress (15ACC) (By Prof. Andy Hor)</td>
<td>68</td>
</tr>
<tr>
<td>Any other?</td>
<td>69</td>
</tr>
</tbody>
</table>
2. Collection of old FACS Newsletters

a) Scanned 11 hard copies of FACS Newsletters from Prof. Datuk Dr. Soon (Before the 62th EXCO Meeting)
   No. 1 and No. 2/1989 (June & December), No. 1/1990 (September), No. 1/1992 (April), No. 1/1993 (October), No. 1/1994 (Jan-June), No. 1 and No. 2.1995 (June & December), No. 1/1996 (January - June), No. 1/1997 (January - June), No. 2/1997 (7ACC)

b) Obtained 9 Scanned hard copies (in pdf format) from The Chemical Society of Japan (After the 62th EXCO Meeting)

c) Received 2 issues (in pdf format) from Prof. K. B. Yoon
   No. 1/2008, No. 1/2009

d) Obtained 4 E-copies (in pdf format) from FACS Website (Before the 62th EXCO Meeting)

Summary: Plus a newly published issue in 2012, now we have totally collected 27 issues of FACS Newsletters in pdf format and posted all of them at the FACS Website. Now, we do not know whether or not any FACS Newsletters published before 1989. If yes, I wish we could collect all of them.

In addition, we have updated the information of most member societies.

By Prof. Long Lu, Editor of Publications
Shanghai, April 18, 2013

13. Report from Regional Representatives

Representative from East & Pacific Asia (Prof. Dr. Tomatsu Takahashi) and Representative from Southeast Asia & Papua (Prof. Dr. Muhamad Abdulkadir Martoprawiro) reported about the activities of the members in the regions.

No other matters.
AGENDA & Time

10.45am - 12.30noon: Session 1
1. Apology
2. Approval of the Agenda
3. Opening Address by Immediate Past FACS’ President (Prof. Supawan Tantayanon)
4. Opening Address by new FACS’ President (Prof. Andy Hor)
5. Approval of the Minutes of the 63rd EXCO Meeting
6. Matters Arising after the 63rd EXCO Meeting
   a. Venues for 65th and 66th EXCO Meetings
   b. Any other matters

12.30pm - 13.30noon: Lunch & Networking

13.30am - 16.00noon: Session 2
7. Progress Report of the Preparation for the 16th Asian Chemical Congress and 18th GA @ Dhaka, Bangladesh (Prof. Jasim Uddin Ahmad – FACS President-Elect)
8. Report from the Treasurer (Datin Dr. Zuriati Zakaria)
9. Report from the Coordinator of Projects (Datuk Dr. Ting-Kueh Soon)
10. Report from the Editor of Publications (Prof. Dr. Long Lu)
11. Report from the Directors of Scientific Affairs (Prof. Dr. Kyung Byung Yoon – tbc)
12. Introduction & Report from Regional Representatives
   a. Representative from East & Pacific Asia (by Newly Elected Member)
   b. Representative from Southeast Asia & Papua (by Newly Elected Member)
   c. Representative from South & West Asia (by Newly Elected Member)
13. Any Other Matters

16.00pm - 16.15pm: Group Photo Session – All FACS EXCO Members

AGENDA & Time (Revised on 19th August 2013)

11.00am - 13.25pm
1. Apology
2. Approval of the Agenda
3. Opening Address by Immediate Past FACS President (Prof. Supawan Tantayanon)
4. Opening Address by new FACS President (Prof. Andy Hor)
5. Approval of the Minutes of the 63rd EXCO Meeting
6. Matters Arising after the 63rd EXCO Meeting  
   a. Venues for 65th, 66th and 67th EXCO Meetings  
   b. Any other matters  
7. Progress Report of the Preparation for the 16th Asian Chemical Congress and 17th GA @ Dhaka, Bangladesh (Prof. Jasim Uddin Ahmad – FACS President-Elect)  
8. Report from the Treasurer (Datin Dr. Zuriati Zakaria)  
9. Report from the Coordinator of Projects (Datuk Dr. Ting-Kueh Soon)  
10. Report from the Editor of Publications (Prof. Long Lu)  
11. Report from the Directors of Scientific Affairs (Prof. Tamotsu Takahashi)  
12. Introduction & Report from Regional Representatives  
   a. Representative from East & Pacific Asia (Prof. Liu Ling-Kang)  
   b. Representative from Southeast Asia & Papua (Prof. Basil Shelton Marasinghe)  
   c. Representative from South & West Asia (Prof. J.N.O. Fernando)  
14. Any Other Matters  

❖ 13.25pm - 13.30pm : **Group Photo Session – All FACS EXCO Members**  

❖ 13.30pm : **Lunch & Networking**  

**Participants: FACS EXCO Members (2013-2015)**  

<table>
<thead>
<tr>
<th>S/N</th>
<th>Name</th>
<th>Position at EXCO</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prof. Tzi Sum Andy HOR</td>
<td>President</td>
<td><a href="mailto:andyhor@imre.a-star.edu.sg">andyhor@imre.a-star.edu.sg</a></td>
</tr>
<tr>
<td>2</td>
<td>Prof. Jasim Uddin Ahmad</td>
<td>President-Elect</td>
<td><a href="mailto:jasimahmad47@gmail.com">jasimahmad47@gmail.com</a></td>
</tr>
<tr>
<td>3</td>
<td>Prof. Supawan Tantayanon</td>
<td>Immediate Past President</td>
<td><a href="mailto:Supawan.T@chula.ac.th">Supawan.T@chula.ac.th</a></td>
</tr>
<tr>
<td>4</td>
<td>Dr. Dien Pandiman</td>
<td>Secretary General</td>
<td><a href="mailto:dien@pidilite.com.sg">dien@pidilite.com.sg</a></td>
</tr>
<tr>
<td>5</td>
<td>Prof. Al-Nakib Chowdhury</td>
<td>Secretary General-Elect</td>
<td><a href="mailto:nakib@chem.buet.ac.bd">nakib@chem.buet.ac.bd</a></td>
</tr>
<tr>
<td>6</td>
<td>Prof. Datin Zuriati Zakaria</td>
<td>Treasurer</td>
<td><a href="mailto:zuriati@gmail.com">zuriati@gmail.com</a></td>
</tr>
<tr>
<td>7</td>
<td>Prof. Long Lu</td>
<td>Editor of Publications</td>
<td><a href="mailto:julong@sioc.ac.cn">julong@sioc.ac.cn</a></td>
</tr>
<tr>
<td>8</td>
<td>Datuk Dr. Soon Ting-Kueh</td>
<td>Coordinator of Projects</td>
<td><a href="mailto:soontk@ikm.org.my">soontk@ikm.org.my</a></td>
</tr>
<tr>
<td>9</td>
<td>Prof. Tamotsu Takahashi</td>
<td>Director of Scientific Affairs</td>
<td><a href="mailto:tamotsutakahashi@hotmail.com">tamotsutakahashi@hotmail.com</a></td>
</tr>
<tr>
<td>10</td>
<td>Prof. Liu Ling-Kang</td>
<td>Representative from East &amp; Pacific Asia</td>
<td><a href="mailto:liuu@chem.sinica.edu.tw">liuu@chem.sinica.edu.tw</a></td>
</tr>
<tr>
<td>11</td>
<td>Prof. Basil Shelton Marasinghe</td>
<td>Representative from Southeast Asia &amp; Papua</td>
<td><a href="mailto:basilmar8@gmail.com">basilmar8@gmail.com</a></td>
</tr>
<tr>
<td>12</td>
<td>Prof. J.N.O. Fernando</td>
<td>Representative from South West Asia</td>
<td><a href="mailto:oleap@iname.com">oleap@iname.com</a></td>
</tr>
</tbody>
</table>
Observers:

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>1</td>
<td>Prof Alexandre Pokrovsky</td>
<td>Russian Chemical Society</td>
</tr>
<tr>
<td>2</td>
<td>Prof. Bahattin Yalcin</td>
<td>Turkish Chemical Society</td>
</tr>
<tr>
<td>3</td>
<td>Mr. Cem Tuncel</td>
<td>Turkish Chemical Society / BROS</td>
</tr>
<tr>
<td>4</td>
<td>Prof Muhamad A. Martoprawiro</td>
<td>Himpunan Kimia Indonesia</td>
</tr>
<tr>
<td>5</td>
<td>Dr. Chan Chin Han</td>
<td>Institute Kimia Malaysia</td>
</tr>
</tbody>
</table>

1. Apology

All newly elected Executive Committee (EXCO) Members (2013-2015) were present in the meeting.

2. Approval of the Agenda

The Secretary General, Dr. Dien Pandiman (DP) informed the EXCO Members about some changes of the previous Agenda, and the revised agenda was approved. Please refer to the revised Agenda above.

3. Opening Address by Immediate-Past President of FACS

The Immediate-Past President, Prof. Supawan Tantayanon (ST) gave her opening speech by expressing that FACS had made significant progresses over the years and suggesting that more projects could be done to improve the value and activities of FACS. ST urged the new EXCO Members to suggest and think of one particular issue to be discussed in details in each EXCO Meeting, and believed that more progress and improvements could be achieved under the new leadership of Prof. Andy Hor (AH) and his EXCO Members team. ST ended her speech by thanking all EXCO Members and wished to see more progresses, higher standard and quality of FACS.

4. Opening Address by President of FACS,

The new President, Prof. Andy Hor (AH) started his opening speech with the ice-breaking session by requesting all EXCO Members and observers from FACS Member Societies to introduce themselves in a round-table.

AH highlighted the importance of financial prudence. For example, it is difficult for FACS to sponsor EXCO members to attend the EXCO Meetings that take place in the different countries of societies twice a year. Although the host society would provide hotel accommodation and local hospitalities, EXCO Members are still expected to look for their own Societies or sponsors to support their international travel. We should bear this in mind while we are choosing the venue for hosts of EXCO Meetings, as well as General Assembly (GA) and Asian Chemical Congress (ACC).

AH added that FACS is very heterogeneous society with different culture, political and scientific background. Some societies are from the first world economies and countries but some are still struggling in many ways. These differences posed the biggest challenge...
in trying to bring together all members societies on one platform with one voice and seeking consensus agreement on different issues and activities. In order to achieve this common objective and goal, AH urged all members to be receptive to different views, and accepting the value of heterogeneity. It is through this understanding that we will find a common ground from time to time. Looking for such common ground requires compromises, patience, wisdom, understanding and supports from each other. This is how we could move forward and achieve more for FACS. AH hoped that everyone in the EXCO would subscribe to this collegial spirit.

In his closing remark, AH took his Chair position more in a coordinating and mediating role to help the members find a common ground. Instead of the President making decisions for the EXCO, he would prefer the EXCO members making collective decision for FACS in a cohesive manner. He hoped that all members are more participative in giving suggestions, feedback and contributions.

5. Approval of the Minutes of the 63rd EXCO Meeting
The Secretary General (DP) presented the draft of the Minutes of the 63rd EXCO Meeting held on Wednesday, April 2013, Melbourne Convention & Exhibition Centre, Melbourne, Australia, and allowed some times for the members to go through it. There were only minor corrections on the wording and type-errors at the opening address suggested by Prof. Zuriati Zakaria.

After the deliberation, the Minutes of 63rd meeting were approved by the EXCO Members with Dr. Soon Ting Kueh, as the Proposer, and Prof. Zuriati Zakaria, as the Seconder.

6. Matters after the 63rd EXCO Meeting
a. Brochure of FACS
The Coordinator of Projectors, Dr. Soon Ting Kueh, STK reported that he supposed to come out with FACS’s Brochure (4-Pages) for about 1,000-1,200 copies. STK would like to continue to the task and asked the EXCO members on whether the brochure should be printed as the hardcopy or softcopy only. After much discussions and deliberations, it had been agreed that STK would continue preparing the content and layout design of this 4-pages brochure and would pass the draft softcopy to all EXCO members for feedback and suggestions prior to the printing. A final draft softcopy will then be sent to The Editor of Publications. Prof. Long Lu (LL) for final editing, as necessary, and printing of about 1,000 copies in Shanghai, China.

LL had agreed to sponsor the printing cost of FACS Brochure.

There were 3 proposals for hosting the EXCO meetings from Sri Lanka, Karzan (Russia) and Turkey.

After much discussions and careful considerations, the EXCO Members had agreed the followings:
1. Sri Lanka will host the 65th EXCO Meeting scheduled on 2 April 2014
2. Istanbul, Turkey will host the 66th EXCO Meeting scheduled on 31st August 2014 morning (half-day) during EuChemMS Congress (31st August to 4th September 2014)

3. Kazan (Russia) will host the 67th EXCO Meeting scheduled in May 2015 tentatively (tbc)

4. Dhaka, Bangladesh will host the 68th EXCO Meeting scheduled in November / December 2015 during the 16th ACC

The Representative of Institute of Chemistry Ceylon, Sri Lanka, Prof. J.N.O. Fernando had confirmed and agreed to provide 3 night hotel accommodation and local hospitalities for all EXCO Members who would be attending the 65th EXCO meeting.

Further actions are to be taken by DP, as follows:

1. To liaise with the representative of Turkish Chemical Society, Prof. Bahattin Yalcin and Mr. Cem Tuncel for confirmation the date and other details for the 66th EXCO Meeting.

2. To write a proposal letter addressed to Prof. German Dyakonov, the Rector of Kazan National Research Technological University for hosting the 67th EXCO Meeting in Kazan, Russia, and would consult STK and ST about the proposal and keep Prof. Alexandre Pokrovsky in the loop.

7. Progress Report of the Preparation for the 16th Asian Chemical Congress and 17th GA @ Dhaka, Bangladesh, by Prof. Jasim Uddin Ahmad – FACS President-Elect

Prof. Jasim Uddin Ahmad (JUA) presented the preparation of The 16th ACC scheduled from 20-23 November 2015 (tentative), in Dhaka, Bangladesh, subject to changes. Few considerations had to be taken care of when choosing and deciding the date for the 16th ACC in order to avoid the crashes with major events organized by FACS member societies, such as IKM, as well as the supports and participations from delegates and speakers from Chemical Society of Japan (CSJ).

More updates on the 16th ACC would be reported in the next 65th EXCO Meeting scheduled on 2nd April 2014 in Colombo, Sri Lanka.

8. Report by the Treasurer

- The Treasurer, Prof. Zuriati Zakaria (ZZ) has reported the accounts at the 17th General Assembly on 19 Aug 2013.
- There was an error in the amount of subscription for the Chemical Society of Japan in Note B (from 1 January 2012 to 31 December 2012) It should read US$ 600 instead of US$ 300.

<table>
<thead>
<tr>
<th>Society</th>
<th>Year</th>
<th>USD</th>
<th>RM</th>
<th>Cleared on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Society of Japan</td>
<td>2012</td>
<td>600.00</td>
<td>1,730.97</td>
<td>29/10/2012</td>
</tr>
</tbody>
</table>
A. During the 17 General Assembly, payment of 2013 FACS Annual Subscriptions in cash from 6 member societies to the amount of US$1,200 was received from the following:

2. Brunei Chemical Society for 2013, 2014 US$ 240
3. Jordanian Chemical Society for 2013 US$ 120
4. Mendeleev Russian Chemical Society for 2013 US$ 120
5. Chemical Society of Pakistan for 2013 US$ 120
6. The Institute of Chemistry, PNG, for 2012, 2013 US$ 240

Total US$ 1,200

B. The following countries mentioned that they have made payment by bank transfer the week before and will only show in the statement for the next month.

1. Indian Chemical Society 2013 US$ 120
2. New Zealand Chemical Society 2013 US$ 300

C. The following societies still show subscription dues for the respective years:

2. Chemical Society of Vietnam 2013 US$ 120

F. ZZ had made the payments for the followings:

a. To ST for the amount of US$ 1,000 for the FACS pins.
b. To DP for the amount of S$ 200 for FACS Award Plaques
c. To LL for the amount of US$ 1,000 (from Malaysian Account) for the Newsletter

G. ZZ would make the payments for the followings:

a. To Prof. Bhinyo Panijan who received the FACS Award 2013 (Chemical Education) for the amount of THB 12660 for the reimbursement of the return air ticket Bangkok-Singapore (by end of August 2013).

H. ZZ reported that she had make the mistake to reimburse the return air ticket from Melbourne-Singapore of the amount of AU$ 1080.00 to Dr San Thang who received the FACS Citation Award. During the 63rd EXCO meeting in Melbourne, The EXCO has proposed to support flight costs for FACS citation award winners which meant that the statute need to be amended and be passed by the General Assembly. However, during the 17th General Assembly, the amendment was not approved and it was suggested that the EXCO discuss further about the phrasing of the amendment.. Due to the request made by the past treasurer Dr San Thang (Refer to Note below) and the assumption that the statute will be amended, Prof Zuriati had requested the Australian account (under RACI) pay for the said amount to Dr San Thang.

I. ZZ requested the EXCO Members to consider and approve the said amount paid to Dr. San Thang. After much discussions and deliberations, the EXCO Members had suggested to ZZ to inform Dr. San Thang about the mistake made for the reimbursement payment and requested him to return the money to FACS’s account. If this is not possible, the EXCO would be prepared to absorb this expenditure.

J. ZZ asked the Coordinator of Project (STK) if there were any claims for the projects done in the past. STK replied that he would explain in the following report and updates for the projects.
Note:
Below is the letter from Dr San Thang to the Secretary.
My Air Ticket and Tax Invoice - 15ACC Singapore (August 18-24 2013)

Dear Supa,

Please find attached my air ticket/travel itinerary and tax invoice (A$ 1,080.00) for an economy return from Melbourne to Singapore (Singapore Airline).

As you can see, I have booked the date on August 18 for my arrival and August 24 for my departure. Taking this opportunity, I would like to let you and the FACS EXCO know that I would like to attend the 17th General Assembly as an observer from RACI on August 19.

Regarding the accommodation, I will need SIX nights and as I know the 15ACC Organiser generously provides me 4 nights, I will pay for the additional two nights myself. So, please make sure this information pass on the appropriate person (within the 15ACC Organiser).

Many thanks for your kind attention.

With best regards,
San

Dr. San H. Thang, FRACI, FTSE
Chief Research Scientist| Research Team Leader| CSIRO Materials Science and Engineering

2 attachments — Download all attachments

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Supa Hannongbua <fscisph@ku.ac.th> Jun 3

Dear San,

Thank you for your flight details which I will inform Dien and 15ACC about your plan of staying.

For the flight reimbursement, we will proceed accordingly.

With best regards,

Supa

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9. **Report from the Coordinator of Projects**

The Coordinator of Projects, Datuk Dr. Ting-Kueh Soon (STK) reported the following matters:

- The Project on Metallic Chemistry 2013 required the EXCO Members’ approval on the budgeted amount of US$500, and it was approved by the members and ZZ would make the payment accordingly.
- The Project History & Archive had been delayed for such a long time and always reported as work-in progress. STK had requested the EXCO members’ decision and approval to inform the Project Director about this long overdue project and to give the final chance to finish the project by the next General Assembly in 2015. If there is no update and progress on this progress, the project will be called-off by then.
- ST mentioned about the seed-fund for Micro-scale Chemistry followed by STK to request the EXCO members’ approval on the budget of US$500 subject to the response from the project director, Dr. Abdul Aziz. STK to follow up with the project director.

10. **Report from the Editor of Publications**

The Editor of Publications, Prof. Long Lu (LL) reported that he had started preparing FACS Newsletter 2014 and requested for the following reports and articles to be published:

2. Profile of some societies, particularly newly joined Turkish Chemical Society.
3. Announcement of the 16th ACC in Dhaka, Bangladesh.
4. Update list of FACS Life Members

11. **Report from the Chairman of the Scientific Affairs**

The newly elected Chairman of the Scientific Affairs, Prof. Tamotsu Takahashi (TT) had just resumed his role and responsibility during the 17th FACS General Assembly and gave no further input. ST commented that TT should bring more scientific lectures to the next 16th ACC and planned and designed good quality scientific programs to the congress.

12. **Report from Regional Representatives**

There was no update from these 3 newly elected regional representatives. AH suggested to the representatives to come up with the updates on what they have had done for the scientific communities as well as the region that they represent in the next EXCO Meeting.
Report on the 4th Asia-America Chemical Symposium (A2CS)

The American Chemical Society (ACS) and the Federation of Asian Chemical Societies (FACS) entered into a collaboration alliance in 2011. A key component of the alliance is the Asia-America Chemical Symposium (A2CS), which is held at the partners’ flagship annual meetings. The first A2CS took place at the ACS spring national meeting in 2011 in Anaheim, with the theme “Energy.” The next A2CS took place in Bangkok as part of the 14th Asian Chemical Congress (ACC) in September 2011, with the theme of “Food.” The third A2CS took place at the Fall ACS national meeting in Philadelphia in Aug 2012 with the theme of "Health & Medicine.”

This year, the fourth A2CS took place at the 15th ACC in Singapore, with the theme "Advanced Materials." Nine prominent scientists recommended by ACS and FACS participated in this symposium. They are professors Chin Han Chan (Universiti Teknologi MARA, Malaysia); Kazunari Domen (University of Tokyo); Satish Kumar (Georgia Institute of Technology, US); Jae Sung Lee (Pohang University of Science and Technology, South Korea); Shih-Yuan Liu (University of Oregon); Loh Kian Ping (National University of Singapore); Kirk S. Schanze (University of Florida, US); Yi Lu (University of Illinois, US); and Thawatchai Tantulani (Chulalongkorn University, Thailand).

On the event (22nd Aug 2013, the 4th day of the 15ACC), ACS President Dr. Marinda Li Wu gave an opening speech. She addressed the importance and the success of the past A2CS events for ACS and FACS to achieve their common goals of promoting chemical research, collaboration, and education. She also covered the importance of this year’s theme, “Advanced Materials”, in various fields. The symposium then commenced with the technical programme (see Table 1). The speakers delivered high quality talks on the current advancement in materials research focusing on energy and biomedical applications. The talks stimulated active discussion among the audience. At the end of each talk, Prof. Supawan Tantayanon (Past FACS President) presented the collar pin of FACS to the speakers. Prof Supawan concluded the symposium with a closing statement. The symposium chair of the 4th A2CS was Dr Su Xiaodi, Senior Scientist and Head of Materials Analysis and Characterization Capability Group at the Institute of Materials Research and Engineering (IMRE), Singapore. She coordinated the scientific programme together with the ACS and FACS. She and Professor Jae Sung Lee co-chaired the talks.

The symposium ended with a great success. Dr. H.N. Cheng (Chair of International Activities Committee of ACS) made a suggestion to Professor Kirk S. Schanze (Editor-in-Chief, ACS Applied Materials & Interfaces) about the possibility to publish A2CS talks in a special issue with the ACS Applied Materials & Interfaces.
presented collar pin of FACS to Prof. Yi Lu

Prof. Supawan (left)
presented collar pin of FACS to Prof. Kirk Schanze
<table>
<thead>
<tr>
<th>No</th>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
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| 1  | 8.30am-8.50am   | JAE SUNG LEE  
*Pohang Univ. of Science and Technology, South Korea* | Photoelectrochemical Water Splitting on Nanostructured Photoelectrodes |
| 2  | 8.50am-9.10am   | KAZUNARI DOMEN  
*The University of Tokyo, Japan* | Development of Water Splitting Photocatalysts for Solar Fuel Production |
| 3  | 9.10am-9.30am   | SHIH YUAN LIU  
*University of Oregon, USA* | Development of a Single-Component Liquid-Phase Hydrogen Storage Material |
| 4  | 9.30am-9.50am   | LOH KIAN PING  
*National University of Singapore, Singapore* | Interesting Properties of Strained or Defective Graphene |
| 5  | 9.50am-10.10am  | SATISH KUMAR  
*Georgia Institute of Technology, USA* | Collaboration Opportunities in the Nano Composite Materials Research. |
| 6  | 10.10am-0.30am  | CHIN HAN CHAN  
*Universiti Teknologi MARA, Malaysia* | Enhancement of Ionic Conductivity by Self-Assemble Inorganic Salt in Multiphases Polymer Systems |
|    | tea break and plenary talk |                              |                                                                      |
| 7  | 11.45am-2.05am  | YI LU  
*University of Illinois at Urbana-Champaign, USA* | Functional DNA Nanotechnology: Precise Spatial and Dynamic Controls of Nanomaterials Assembly and its Applications in Sensing and Medicine |
| 8  | 12.05am-2.25am  | THAWATCHAI TANTULANI  
*Chulalongkorn University, Thailand* | Allosteric Polymeric Membrane Ion Selective Electrodes |
| 9  | 12.25am-2.50am  | KIRK SCHANZE  
*Department of Chemistry, University of Florida, USA* | Photonic Applications of Conjugated Polyelectrolytes |
13. Other Matters

- Equal Opportunity for Hosting ACC
The motion of equal opportunity or preference for hosting of ACC given to those societies that had never hosted the ACC before was brought up and suggested by J.N.O Fernando (JNOF) during the 17th General Assembly. The EXCO Members gave their views and comments on the issue raise, and here is the summary of points discussed:

1. STK gave the examples of the international events such as IUPAC and Olympic Games that did not restrict any country to bid and host the events in which some countries had hosted several times, and on the other hand, there are many countries that had never hosted. STK had raised his concerns on restrictions of certain societies that had hosted the congress before, and urged the EXCO members to be more careful and cautious about it.

2. AH summarized the two basic principles on this issue. Firstly, it was based on the value of “equal opportunity” by giving a chance to every member to host. Secondly, it was based on a meritocratic principle that gives the award to those who are best equipped to host. Both have their merits and problems but the current practice is more on the latter because ultimately, the success of the ACC is best ensured when it is in the best hands. However even within the meritocratic system, there is a room to help those societies who may have less resource but who are very interested to host. He already observed this in the last 2 rounds of General Assemblies, in which many member societies were trying to help the less privileged societies. This is within the spirit of FACS that is put side our Constitution.

3. After much debate and deliberation, the majority of EXCO Members had strong objections in amending FACS Statutes to give preferential rights on societies in hosting ACC. The point made by JNOF is however noted and should be further discussed in the next EXCO Meeting in April 2014.

4. In his concluding statement, AH urged all EXCO members to be very clear on the objective and expectations of the ACC, and from there develop a rationale guiding principle to evaluate future hosts.

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Recorded and prepared by Vetted and approved by
Dr. Dien Pandiman Prof. Andy Hor
Secretary General President

Updated on 6 November 2013
Introduction for Rhodium-Catalyzed Asymmetric C–C Bond Forming Reactions

The development and exploration of highly selective asymmetric carbon-carbon bond forming processes are of high fundamental importance, and transition metal catalysis plays a key role on realizing unprecedented type of asymmetric reactions. Although various kinds of carbon-carbon bond forming reactions and their asymmetric variants have been reported so far, we have focused on development of a new type of asymmetric transformations where carbon-metal intermediates create stereogenic carbon centers at asymmetric addition to carbon-carbon or carbon-heteroatom multiple bonds. In 1998, we reported the first example of rhodium-catalyzed asymmetric 1,4-addition [1], which is later called “Hayashi-Miyaura Reaction” (Scheme 1). In the first report, it was concerned with the addition of organoboronic acids to α,β-unsaturated ketones in the presence of Rh(acac)(binap) as a catalyst. Immediately after the first publication, the rhodium/binap-catalyzed reaction was extended by ourselves and others to many other electron deficient olefins, α,β-unsaturated esters, amides, alkenyl-phosphonates, nitroalkenes, and so on [2]. In 2002, the catalytic cycle of the rhodium-catalyzed 1,4-addition of phenylboronic acid was fully understood by
characterization of all the three intermediates, phenylrhodium, oxa-π-allylrhodium, and hydroxorhodium, involved in the catalytic cycle [3] (Scheme 2). During the mechanistic studies, we found $[\text{Rh(OH)}\text{(binap)}]_2$ which is more catalytically active than $\text{Rh(acac)}\text{(binap)}$, and more importantly, we found that the conjugate addition is accelerated by diene ligands on the rhodium catalysts. Typically, the addition of phenylboronic acid to methyl vinyl ketone is more than 20 times faster with cod (1,5-cyclooctadiene) ligand than with binap ligand. On the basis of this experimental result which demonstrates the high catalytic activity of diene/rhodium complexes, we have designed and prepared chiral diene ligands and used them successfully for the asymmetric version of the rhodium-catalyzed addition reactions.

**Chiral Diene Ligands for the Rhodium-Catalyzed Asymmetric C–C Bond Forming Reactions**

In 2003, as conceptually new chiral ligands, we reported the synthesis of enantiomerically pure chiral dienes, whose basic diene skeleton is bicyclo[2.2.1]-hepta-2,5-diene (nbd*), bicyclo [2.2.2]octa-2,5-diene (bod*), or bicyclo[3.3.1] nona-2,6-diene (bnd*) [4,5] (Figure 1). They have two alkyl or aryl substituents on the double bonds, one on each of the two double bonds. The chiral diene ligands were found to be better than the conventional chiral ligands represented by chiral bisphosphines in terms of both catalytic activity and enantioselectivity in some of the catalytic asymmetric reactions. Their high performance was observed in rhodium-catalyzed asymmetric addition of organoboron reagents to α,β-unsaturated ketones, N-sulfonylimines, and many other related reactions (Scheme 3).

**Scheme 3: Diene/rhodium-catalyzed asymmetric 1,4-addition and arylation of imines.**

**Recent Advances in the Asymmetric Reactions with Chiral Diene Ligands**

The rhodium catalysts coordinated with chiral diene ligands have been recognized to be much better than those of other types of chiral ligands represented by chiral phosphine ligands in terms of both catalytic activity and enantioselectivity in more than 50 publications[6]. Some of the recent results obtained with chiral diene ligands are shown hereafter.

Rhodium-catalyzed addition of sodium tetraaryl–borates to $N$-tosyl ketimines was achieved by use of chiral diene ligand, constructing chiral amine derivatives possessing α-tetrasubstituted carbon stereocenters with high enantioselectivity[7] (Scheme 4). This reaction does not take place with other types of ligands.
Catalytic asymmetric synthesis of (triaryl)methylamines with high enantioselectivity was realized by rhodium-catalyzed asymmetric arylation of cyclic ketimines substituted with two aryl groups at the imine carbon. Thus, the addition of arylboroxines to cyclic $N$-sulfonyl ketimines and $N$-acyl ketimine precursors in the presence of a rhodium catalyst coordinated with a chiral diene ligand ((R)-diene* or (S,S)-Fc-tfb) gave high yields of the corresponding arylation products with up to 99% ee. The chiral benzosultams obtained were transformed into the chiral (triaryl)methylamines by breaking the cyclic structure[8,9](Scheme5).

Scheme 5: Catalytic Asymmetric Synthesis of (Triaryl)methylamines.

A rhodium/diene complex was found to be active as catalysts for 1,4-addition of arylboron reagents, tetraarylborates and arylboroxines to $\beta,\beta$-disubstituted $\alpha,\beta$-unsaturated ketones to give ketones bearing quaternary carbon stereocenters at $\beta$-position[10,11]. One example for the addition of phenylboron reagent to 3-methylcyclohexenone is shown in Scheme 6. This carbon–carbon bond formation takes place only with diene ligand on the rhodium catalyst.

Scheme 6: Rhodium-Catalyzed Asymmetric 1,4-Addition to $\beta,\beta$-Disubstituted Enone.

A 2-phenyl-alkenylrhodium intermediate, generated by addition of a phenylrhodium intermediate to alkyne, was found to undergo 1,4-shift of rhodium from alkenyl carbon to ortho-position of phenyl group to form 2-alkenyl-phenylrhodium species. Taking advantage of this rearrangement at a key step in the catalytic cycle, new type of asymmetric transformation reactions were realized[12,13]. As a typical example, the reaction of 3-(3-butynyl)-2-cyclohexenone with tetraphenylborate in the presence of a chiral diene/rhodium catalyst gave a spirocarbocycle with high enantioselectivity (Scheme7).

Scheme 7: Asymmetric Synthesis of Spirocarbocycles by Way of 1,4-Rhodium Shift.

The rhodium-catalyzed asymmetric addition was applied successfully for the 1,6-addition of arylboronic acids to
β-alkynyl acrylamides substituted with a silyl group on the alkyne terminus. The reaction took place with a ferrocene-substituted chiral diene ligand, Fc-tfb, to give a high yield of axially chiral allenylsilanes with high enantioselectivity. With other chiral diene ligands, the selectivity in giving the allenylsilane is very low [14] (Scheme 8).

Scheme 8: Rhodium-Catalyzed Asymmetric Synthesis of Axially chiral Allenylsilane.

We have previously reported that perfect 1,6-addition manner is observed in the iridium-catalyzed reaction of arylboronic acids with α,β,γ,δ-unsaturated carbonyl compounds, while the use of rhodium complexes gives both 1,4- and 1,6-addition products non-selectively. The asymmetric version of the 1,6-addition was realized by use of an iridium catalyst coordinated with chiral diene ligand. Although the substrate scope is not very broad, the chiral Me-tfb/iridium catalyst gave the corresponding 1,6-addition product with high (98–99% ee) enantioselectivity [15] (Scheme 9).

Scheme 9: Iridium-Catalyzed Asymmetric 1,6-Addition to α,β,γ,δ-Unsaturated Ketones.

In addition to the catalytic asymmetric carbon–carbon bond forming reactions described above, the chiral diene ligands have shown their high performance in several other types of reactions. The chiral diene ligands are promising because they have powerful chiral surroundings and high modularity in tuning steric and electronic characters. Although the chiral diene ligands have been used mainly for rhodium- and iridium-catalyzed reactions to date, they will be successfully applied, for example, to palladium-catalyzed reactions by appropriate electronic tuning of the diene moiety.

References


Nano/Micro Hierarchical Electrode Materials for Advanced Electrochemical Energy Storage Devices

Yu-Guo Guo
Institute of Chemistry, Chinese Academy of Sciences (CAS), China

Considerable attention has focused on environmentally friendly energy resources in an attempt to relieve the pressures of increasing oil demand, the depletion of non-renewable resources, and environmental pollution. Rechargeable energy storage devices are key components in the energy-conversion-storage-usage chains to implement their stable and efficient utilization. Amongst all of the commercially available electrochemical energy storage devices, lithium-ion batteries (LIBs) represent the state-of-the-art technology and have occupied the prime position in the marketplace for powering an increasingly diverse range of applications, from portable electronic devices to electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs).

However, the fast development of these fields puts forward higher requirements for advanced LIBs in terms of higher energy/power densities and longer cycle life. Because the performances of LIBs intimately depend on the properties of the constituent materials, in particular on the electrochemical properties of the cathode and anode materials, the development of superior electrode materials could be one of the most-effective ways to improve the performance of LIBs and, hence, to meet the rapidly growing demands of the broadening practical applications.

1. Nano/Micro Hierarchical Electrode Materials for Lithium Storage

Nanostructured materials can play a large role in improving the performance of LIBs, because in nanostructure systems the distances over which Li⁺ must diffuse are dramatically decreased; the nanoparticles can quickly absorb and store vast numbers of lithium ions without causing any deterioration in the electrode; and nanoparticles have large surface areas, short diffusion lengths, and fast diffusion rates along their many grain boundaries. In this context, we have developed many novel Li storage systems with much enhanced specific capacities, high rate performance and cycling performance benefitting from nanometer size effects. (e.g., Nature Mater., 2006, 5, 713; Adv. Mater., 2010, 22, 4591; Chem. Commun., 2006, 2783; Electrochem. Commun., 2009, 11, 1468; ChemSusChem, 2010, 3, 703; J. Phys. Chem. C, 2008, 112, 16824; J. Phys. Chem. C, 2009, 113, 3345; Energy Environ. Sci., 2012, 5, 8007).

The practical applications of nanosized electrode materials suffer from their low thermodynamic stability and high activity towards surface reactions besides handle problems, all of which link to the small size and the high surface area (i.e., excess surface free energy). Therefore, ‘kinetically stabilized’ nanomaterials should be considered, which, in fact, have been developed by using nano/micro hierarchical structures and proper surface coatings. We have reported that electrode materials with nano/micro hierarchical structures are the best systems of choice because they can take both the advantages of nanometer-sized building blocks and micro- or submicrometer-sized assemblies. While the former provides negligible diffusion times and possible new Li storage mechanisms and hence is the key to the favorable kinetics and high capacities, the latter guarantees good stability and easy of fabrication. (e.g., Adv. Mater., 2008, 20, 1160; Chem. Mater., 2009, 21, 1162; J. Phys. Chem. C 2009, 113, 14213; J. Phys. Chem. C, 2012, 116, 5019)

Our research contribution in this area focused on their rational designs with mixed-conducting 3D networks and efficient surface nanocoatings.
(i) Kinetics: Mixed-Conducting 3D Networks

We have proposed the concept of using mixed conducting 3D networks on both nanoscale and microscale levels for high-rate electrode materials used in Li-ion batteries in 2007 (Adv. Mater., 2007, 19, 2087), which has found its big success in designing many advanced cathode and anode materials (Adv. Mater., 2007, 19, 1963).

Through systematic studies, we found that the nanoporous three-dimensional conducting networks, which are formed by various nanocarbon building blocks (carbon nanoparticle, carbon nanotube, graphene and nanoporous carbon) (see Figure 1), can effectively disperse the nanoparticles of the active electrode materials to prevent them from agglomerating, provide rapid pathways for Li ions and electrons to reach the surface of each active nanoparticle, and hence make full use of the potential kinetic advantages of the nanostructured electrode materials (see Figure 2). In this way, we have developed many electrode materials with high specific capacities and favorable high-rate performances for Li-ion batteries. (e.g., Chem. Mater., 2008, 20, 3617; J. Mater. Chem., 2010, 20, 7565; J. Phys. Chem. C, 2010, 114, 2448; J. Phys. Chem. C, 2010, 114, 10308)

![Figure 1. Schematic illustration showing nanocarbon networks building from different nanostructured carbons.](image1)

Figure 2. Design scheme of the hierarchically mixed conducting network in a lithium-ion batteries (left), in which the middle drawing gives the general view of the microscale conducting network (small black spheres represent the carbon black), and the right drawing gives the fine structure of an enlarged “building block” consisting of a nanocarbon network and active nanoparticles. (Acc. Chem. Res., 2012, 45, 1759)


Very recently, we have proposed a double-protection design concept for high-capacity alloy anode materials. To be specific, we used a core-shell structured nanocarbon shell in combination with the three-dimensional graphene network to solve the problems concerning the high-capacity alloy anode materials (i.e., dramatic volume expansion, and surface/interface and kinetic problems). In this way, we developed a Ge@C/graphene nanocomposite anode material with high specific capacity, long cycle life and

With this concept of mixed-conducting 3D network, we have demonstrated that very effective synergism could be introduced by using two-phase structures such as the coaxial nanocables. They can be used for designing superior electrode materials with improved performance in terms of power (rate), energy, and cycling behavior. The cable morphology also allows for a dense packing of electroactive materials. In addition to the bifunctionality on the nanoscale, it can easily form a micrometer-scale mixed-conducting network with carbon black as well (see Figure 2). In the specific case of CNT@TiO₂ core/porous-sheath coaxial nanocable, on one hand, the benefit of CNT for TiO₂ storage consists in the electronic wiring principle (i.e., the CNT core providing sufficient e⁻ for the TiO₂ sheath). On the other hand, the benefit of nanoporous TiO₂ for CNT is the almost unperturbed Li⁺ supply for the CNT core, most probably because of the porosity and the small thickness of the passivation layer. It is the synergism of the two parts that leads to a high, fast and stable lithium storage material. This work has been published in *Chem. Mater.* (2010, 22, 1908) and has been highlighted by the *RSC Chemistry Word* (March 2010, P26).

On the invitation of the editor of *Accounts of Chemical Research*, we have published a review article titled “Nanocarbon Networks for Advanced Rechargeable Lithium Batteries”. In the Account paper, we summarized recent progress in the structural design, chemical synthesis, and characterization of the electrochemical properties of nanocarbon networks for Li-ion batteries and the next generation rechargeable lithium batteries, such as Li-S and Li-O₂ batteries. In addition, we also addressed the ways in which nanocarbon networks can expand the applications of rechargeable lithium batteries into the emerging fields of stationary energy storage and transportation (*Acc. Chem. Res.*, 2012, 45, 1759).


(ii) Surface/Interface Properties: Carbon and Carbon-Free Nanocoatings

The surface structures of electrode materials are of great importance to their electrochemical performance. In the case of nanostructured anode materials for LIBs, the effect becomes more remarkable due to their high surface areas, which raise the risk of secondary reactions involving electrolyte decomposition on their surfaces. In nanometer-sized anodes, thick and usually unstable solid electrolyte interphase (SEI) films commonly form. It has been demonstrated in many cases that by using proper surface coatings, remarkable improvements in the electrochemical performance including reversible capacity, Coulombic efficiency in the first cycle, cycling behavior and high rate capability can be achieved.

Carbon coating is one of the most widely used coating techniques for anodes (e.g., transition metal oxides, Si) and cathodes. We have demonstrated that the carbon coating layers can not only significantly enhance the electronic conductivity of electrode materials, but also lead to stabilized SEI films especially on anodes (e.g., Fe₃O₄), which result in improved rate and cycling performance (*Adv. Funct. Mater.*, 2008, 18, 3941). However, lithium-ion batteries using carbonaceous or carbon coated anode materials have the risk of safety problem when operating under high current densities as power sources. The carbon-free anode material of Li₄Ti₅O₁₂ is a star material to solve the safety issue, however, low kinetics associated with its electrical conductivity limit its high-rate capability in practical applications, and the reported carbon nanocoating strategy again incurs the safety problem. We have
shown the utility of rutile-TiO$_2$ as carbon-free nanocoating to improve the kinetics of Li$_4$Ti$_5$O$_12$ toward fast lithium insertion/extraction (see Figure 3). The new nanocoating is not only proved to be highly effective, but also promises advanced batteries with high volumetric energy density, high surface stability and long cycle life compared with the commonly used carbon nanocoating technique (J. Am. Chem. Soc., 2012, 134, 7874).

Figure 3. STEM images of rutile-TiO$_2$ coated Li$_4$Ti$_5$O$_12$ nanosheets.

We also demonstrated the use of Al$_2$O$_3$ nanocoating for Si anode material. A concept of using nanocables directly grown from the current collector for the electrodes of LIBs was developed and realized by fabricating Cu@Si and Cu@Si@Al$_2$O$_3$ nanocable arrays. The conductive Cu cores that are anchored to the copper foil act as both current collectors and structural reinforcements for the Si shell of the nanocables. The outer surface of the nanocables is readily modified by an additional sheath of Al$_2$O$_3$ which provides a stable Si/electrolyte interface and triggers stable SEI formation. Consequently, both nanocables show excellent electrochemical performance including high specific capacity and cycling stability. After coating with an Al$_2$O$_3$ sheath, the Cu@Si@Al$_2$O$_3$ nanocables show a remarkable high rate capability (Adv. Mater., 2011, 23, 4415)

2. Sulfur-Carbon Nanocomposite Cathode Materials for Lithium-Sulfur Batteries

We have made great progress on solving the polysulfide dissolution problem and improving the cycling performance of lithium-sulfur battery. The results have been published in J. Am. Chem. Soc., (2012, 134, 18510), and highlighted by Chemical & Engineering News of American Chemical Society (ACS) entitled with “High-Energy Battery Built to Last”.

Lithium-sulfur battery is a lithium secondary battery consisting of a sulfur (or sulfur-containing compounds) cathode and a lithium anode, which utilizes the chemical reaction between sulfur and lithium to achieve the transformation between chemical energy and electrical energy. Both electrodes hold high theoretical specific capacities, leading to a high theoretical specific energy of higher than 2600 W h/kg, more than 5 times that of today’s lithium-ion batteries.

Starting from the structural design of sulfur molecules, we show that the polysulfide dissolution problem can be effectively diminished by controlling the sulfur as smaller allotropes (S$_2$-4). We have successfully realized the screening and stabilization of metastable sulfur allotropes S$_{2-4}$ via confining them in conductive carbon micropores (Figure 4). Since the particle size of sulfur falls into the molecular level, the confined small S$_{2-4}$ molecules exhibit a significantly improved Li electroactivity. A sulfur–carbon composite based on the confinement effect of nanopores exhibits unprecedented electrochemical behaviors with high specific capacity, excellent cycling stability, and superior rate capability. The composite shows a high initial discharge capacity of 1670 mA h g$^{-1}$ based on the mass of sulfur, close to the theoretical capacity of sulfur (1675 mA h g$^{-1}$), and an impressive cycling stability of 1150 mA h g$^{-1}$ after 200 cycles. We also show that the electrochemical performance of the sulfur-carbon cathode can be easily adjusted by tuning the pore structure of the carbon substrate. A sulfur-carbon composite based on a hollow carbon substrate even shows an ultralong lifespan (255 days, 600 cycles) in a Li-S battery. (Part. Part. Syst. Charact., 2013, 30, 321; J. Mater. Chem. A, 2013, 1, 6602)
The discovery of the confined smaller sulfur molecules and their electrochemical properties promises the development of advanced Li-S batteries and Li-Se batteries with superior performances for applications in portable electronics, electric vehicles, and large-scale energy storage systems. With these results, we have filed 4 PCT applications. (Angew. Chem. Int. Ed., 2013, in press)

Figure 4. Schematic illustration of the smaller sulfur molecules for better Li–S batteries.

3. Large-Scale Production and Applications of Superior Electrode Materials

Olivine-structured LiFePO₄ has been intensively studied as a cathode material of LIBs for on-board energy storage in EVs and PHEVs, as well as the future stationary energy storage for wind and solar energy. These originate from its numerous appealing advantages, such as intrinsic thermal stability, environmental benignity, low cost, and high theoretical capacity (170 mA h g⁻¹). However, its insulator nature with sluggish kinetics of both electron and lithium ion transports seriously limits its high-rate and low-temperature properties, which are precisely the requirement for its applications.

We have developed a nanocomposite with highly dispersed LiFePO₄ nanoparticles in a nanoporous carbon matrix for both high-power and high-energy electrode materials in electrochemical energy storage devices, such as LIBs and supercapacitors. A key to its realization is, besides the preparation of nanometer-sized active particles, the use of a nanoporous carbon matrix, which serves as a mixed conducting 3D nano-network, enabling both Li⁺ and e⁻ to migrate and reach each active particle, hence realizing the full potential of nanoactive materials. The nanoporous carbon matrix can also serve as an electrolyte container for high-rate operation as well as an elastic buffer to relieve the strain during Li uptake/release. The as-prepared LiFePO₄ cathode materials show remarkable high-rate capability, which can be fully charged or discharged within a period of less than 30s, similar to a supercapacitor, but with more energy density. (Adv. Mater, 2009, 21, 2710)

Recently, we also developed a new design by decorating LiFePO₄ nanoparticles with two types of carbonaceous materials (amorphous carbon coating and graphitized conductive carbon) to improve the electrochemical properties of LiFePO₄ cathode materials. Compared to pristine LiFePO₄ and single-carbon decorated LiFePO₄@C and LiFePO₄/CNT, the as-designed LiFePO₄@C/CNT exhibits the best high-rate capability (about 59% capacity retention at an ultrahigh rate of up to 120 C), the best capacity retention during cycling (98.5% capacity retention over 500 cycles), and excellent low-temperature performance (about 71.4% capacity retention when discharge at −25 °C). (Adv. Energy Mater, 2013, in press)

We have set up a large-scale production line for the fabrication of the cathode materials (ca. 300 ton/year). Now the products have been used in producing commercial high-power lithium-ion batteries for powering EVs and PHEVs.

Figure 5. Some journal cover or frontspiece highlights for our results.
Dr. Bhinyo Panijpan has always combined his role as a molecular science researcher with that of a chemical educator. He believes in active learning on the part of the learners, thus he likes to conduct his lectures and laboratory practicals in a learner-centered way. Partly as a result of interaction with students, he has come up with explanations, analogies, hand-held and electronic molecular models and guided-inquiry laboratories to help them learn and retain their knowledge better. For him student learning has to be assessed qualitatively and quantitatively, where formative and summative assessments are both essential.

During his instructional career he covered most undergraduate structural topics. He has published most of his classroom and laboratory instructions in international journals and spoken about them and conducted workshops in both national and international forums, e.g., running FACS workshops on education. Details of his instructional philosophy and promoting student learning are partially evidenced by his publications in chemical, biochemical, education journals (see for example, J. Chem. Educ., 86(1), 85-86, 2009; J. Chem. Educ., 87(8), 829-831, 2010; Simulation & Gaming, 41(4), 2010; J. Chem. Educ. 89, 791–795, 2012).

Here I wish to elaborate more on what I present in the preamble above with a special emphasis on my many roles as an educator/researcher in the field molecular science. However, I wish to present only some selected works with references.

**Laboratory Exercises**

I began my career as a lecturer in 1967 when CPK space-filling molecular pieces were new to the world; but fortunately, the Biochemistry Department at Mahidol University had enough of them for teaching our biochemistry graduate students. I wrote a new laboratory exercise asking students to assemble, by themselves with minimal guidance, some typical small biomolecules which had stereochemical features for understanding their 3-D structure, chirality and assembly. The experience from this laboratory led to a publication (J. Chem. Educ., 54, 172-173, 1977). Later when 3-D molecular structural programs became available electronically, I changed the instruction by asking students to build biomolecules on the computer using both skeletal and space-filling presentations and compared them. The built models were made available free online until 2007. This work partially contributed to my winning the tertiary educator award from the Science Society of Thailand in 1999. By 1996, my biochemistry graduate students, as part of their model building exercise, also had to make their own double helical DNA (A and B forms) and double helical RNA from figures drawn on transparency sheets. In the process of doing they all learned for certain about the helical sense and base pairing, 5’ and 3’ ends, and helical grooves, especially, the nano-dimensions. This experience led me subsequently to my coaching of high school students, teachers and undergraduates on how to build DNA, and polypeptide ordered structures hands-on using computer printouts of structural components on transparent films (Biochem. Mol. Biol. Educ., 37(4), 220-226, 2009; Biochem. Mol. Biol. Educ., 38(6), 359-364, 2010). In the area of macromolecular assembly, my Ph.D. student and I built a
hand-held model of the sarcomere showing the sliding element mechanism. The article in Advances in Physiology Education has been well received and has had continual requests and purchase orders, domestic and overseas (Adv. Physiol. Educ., 33, 297-301, 2009).

**Molecular Models of Biomolecules**

Realizing that all our student laboratories in 1970's were borrowed from elsewhere, I myself and colleagues wanted to design laboratories suitable for our students that reflect relevancy and our expertise on the topics for better guidance of their works, so we came up with some new laboratories of our own. Later laboratories involved more and more students' active participation and even lively class discussion. It has been surprising as well as gratifying for us that instructors and teaching assistants were ignored often while students were planning their work and carrying out manipulative activities as well as discussing and disputing their results which were different due to different conditions used. (see, e.g., J. Chem. Educ., 56, 423-424, 1979; Biochem. Mol. Biol. Educ., 37(2), 99-105, 2009; International Journal of Learning, 16(6), 459-473, 2009; International Journal of Environmental and Science Education, 5(2), 169-187, 2010).

**Lecturing and Assessment**

As an instructor in the lecture hall, I have always believed in eye-to-eye contact with students and interaction with them. The instructor should be able to interpret texts accurately and present the lecture in a very interesting way. I have learned a great deal from interactions with students and improved upon my subsequent performances as a result. For me, in the 1970's through early 1990's, behavioral objectives had to be followed closely in any lecture and laboratory. Only from the late 1990's that I began to seriously implement formative assessments by tests, observations, questionnaires both for lecture as well as laboratory. In summative assessments, for multiple choice questions, ticked answers had to be accompanied by short passages compatible with the answers (two-tiered test). Later in my career, as director of the Institute for Innovative Learning, alignment between curriculum or syllabus with instruction and assessment was practiced but not always followed strictly, because, to engender creativity and innovation in students who have to be asked to respond sometimes to questions requiring out-of-the-box thinking and also applying their knowledge beyond the material learned. For example, after their exposure to symmetries in biomolecules, they had to propose their own household objects having the same symmetry elements. At the end of instruction, there was usually a wrapping up session where students and the instructor interact to ensure whole-class understanding (Biosci. Educ. E-journal. Vol. 12: December 2008 (www.bioscience.heacademy.ac.uk/journal/vol12/beej-12-6.pdf).

**Textbook Errors**

In early 1970's I began instructing undergraduates on several topics per semester. In preparing my lectures, I would read from several popular international textbooks on Biochemistry and Chemistry to gain depth and width. While doing my reading, I would come across several errors on biomolecular structure in these famous textbooks and address some of these errors by publishing corrections in education journals( J. Chem. Educ., 54, 670-672, 1977; Biochem. Educ., 7, 38, 1979; Trends
Papers of FACS Awards 2013
Distinguished Contribution to Chemical Education Award 2013

Biochem. Sci., September N 210-211, 1979; Biochem. Educ., 8(1), 27-28, 1980. In subsequent editions, changes were made accordingly. Also while interacting with students, my colleague, J. Svasti, and I noticed the lack of understanding among our students of the physical principles behind the new separation technique, SDS-polyacrylamide gel-electrophoresis, and found out from international friends that their students also had problems. Thus we proposed our explanation in J. Chem. Educ., 54, 560-562, 1977.

Public service
I acted as chairman of the academic subcommittee that lead to the promulgation of the National Dangerous Goods Act (1992) and participated in drafting of its bylaws and manuals for training industrial personnel. I also co-edited two books on various aspects of dangerous goods, one on storage, transport, disaster prevention and emergency response and the other on chemical fires.

I obtained with Dr. Pintip Ruenwongsa a patent for the one-bottle iodine test kit which is semi-quantitative. To promote its use, over a period of two years, we had to travel to the provinces to educate villagers as well as pupils/teachers about the importance of iodate supplemented salt in preventing iodine deficiency which may lead to severe mental disorders (J. Chem. Educ., 87(7), 662-664, 2010). Our efforts were successful and the kit is still being used up to now after more than 10 years of implementation by the Ministry of Public Health.

High schools
From our survey of students' learning difficulties in many topics at the high school level between 2002-2004, the Institute for Innovative Learning under my directorship produced 42 compact discs (10 of which on chemistry and other molecular topics) on these topics with animation. The layout of each CD usually has the "before-class" learning task to sensitize the students to the topic about to be learned, then contents are presented following the 5-E (engagement, exploration, explanation, elaboration, evaluation) principles. Formative and summative assessments of various kinds were employed exploiting the newest technologies, e.g., drag and drop, bingo, two-tier multiple choices. These CD's have been distributed to all high schools in Thailand, sponsored by the Ministry of Science and Technology, in 2009, especially, for the benefits of socio-economically less privileged students and teachers in remote areas.

Our Institute for Innovative Learning has also reached out to rural underprivileged schools where teachers and students (Samut Songkhram) since 2005 were introduced to guide-inquiry and learner-centered instructions. Most important, locally available materials and resources have been used for learning about, e.g., behavior, ecosystem and biocontrol concepts which involve chemical and biochemical knowledge. Apart from overcoming budget constraints, local relevancy of the endeavor is also important. After four years of engagement with us some of the teachers have won national awards as educator and gained accelerated promotion. Most students were favorable to this way of learning and their enhanced learning has been well assessed (J. Biol. Educ., 43(1), 40-43, 2008; International Journal of Learning, 16(6), 459-473, 2009; International Journal of Science and...
Papers of FACS Awards 2013
Distinguished Contribution to Chemical Education Award 2013

Mathematics Education, 9, 1-38, 2011; The International Journal of Learning, 18(2), 219-234, 2011; International Journal of Learning, 18(10), 167-190, 2012.) Currently we are starting a longitudinal collaborative research with schools in Samut Songkhram and Samut Sakhon provinces with a focus on coaching of the rural science teachers.

Workshops

I have actively participated in most annual meetings run by the Science Society of Thailand. Also I have travelled countrywide to talk about education in chemistry and molecular bioscience on both theoretical and practical aspects to both high school and university teachers and students alike. Hands-on biomolecular model building has been one of the main themes in such endeavor.

Editorial Duties

As a science & technology researcher/education researcher with over 110 publications divided almost equally between science & technology and education, I have been on the editorial board of Science Asia, BAMBED, and still on that of the BioScience-E Journal, based in the U.K. Also a believer of applying what one knows, I strive to apply my "pure" research into educational research on many occasions (see, e.g. J. Biol. Educ., 43(1), 40-43, 2008; Biochem. Mol. Biol. Educ., 37(2), 99-105, 2009; J. Chem. Educ., 87(8), 829-831, 2010; The Chemical Educator, 15(1), 5-9, 2010; The International Journal of Learning, 18(2), 203-218, 2011; ibid, 18(10), 167-190, 2012; J. Appl. Phycol., 20, 271-278, 2008; Biol. Control, 47, 207-215,2008; Zootaxa, 3522, 49 - 60,2012). Also from two aspects of my research one in biochemical education on amylase and the other on bromoperoxidases in 1997, invented the single-bottle test kit for iodate in salt earning a Thai Patent and making about USD 1 million since for my university. The latest innovative product (I-Kit) came after about 6 years of failure in making the bromoperoxidase from seaweeds useful in any enzyme-linked reagent: the enzyme denatured too easily. However, the effort did not go to waste because three publications (ScienceAsia 32 Supplement, 1, 19-23, 2006; ibid, 1, 37-42,2006; J. Appl. Phycol., 20, 271-278, 2008) ensued.

Instructor as Facilitator

I have spent over 40 years trying to enhance learning at university and high school levels. Armed with proper educational knowledge and knowhow I have adapted many research works to help students' learning in both theoretical and practical aspects with an emphasis on their being innovative (being the first to do things). Many of my publications in education should demonstrate to science educators, especially, in emerging countries that modern educational research and practices are feasible in places with limited financial support and, sometimes, lack of proper understanding and appreciation by some stakeholders. All in all I enjoy the role of being teacher/researcher. Enabling students to learn can lead to better graduates and higher number of research students to push back frontiers of science.

Promoting 21st century skills, which also include being creative, innovative, and collaborative, can derive from a teacher with a firm belief in learner-centered pedagogy in acting as a competent guide with a watchful eye for the learner's assorted needs and abilities.

Game Simulation "Unit Cell"
TURKISH CHEMICAL SOCIETY (TCS)

Founded in 1919, and established by the Turkish Government about its non-for-profit nature, Turkish Chemical Society is the first society about basic science.

TCS has been representing Turkish Republic since 1958 in IUPAC. Formerly FECS, now recognized as EuCheMS, is being represented in Turkish Republic by our Society.

Our Society has finally another membership in FACS (Federation of Asian Chemical Societies).

“Young Chemists’ Platform”, founded in our body, works about providing internship, grants/fellowships, education opportunities and finding jobs for students and graduated colleagues.

Our Society works hard on publishing books, organizing congresses, conferences and panels to help spread the spirit and information throughout the chemical community.

The purposes of the foundation of our Society can be summarized as follows:

1. To commit researches in order to improve and activate its tasks,
2. Organizing educational studies like courses, seminars, conferences and panels,
3. In order to realize the aims, the Society may acquire all types of information, document and publications, form a documentation center, publish newspapers, journals, books, etc., in order to give more information about its activities, distribute these publications to its members, release bulletins about works and giving information, establishing a website,
4. To work about chemical science and its applications for giving valuable information to the colleagues and the public, to adhere to the organizations working about chemical education,
5. Work for introducing the owned rights and authorizations to the colleagues, protecting them, listening to their suggestions, and using their experiences,
6. In order to realize the aims and to compensate for the general expenses, the Society may accept donations from both international and national sources.
7. In order to realize the aims outlined in the Bylaw, the Society may establish economical, commercial and industrial plants and maintain them,
8. The Society may establish clubhouses, social and cultural facilities and run them in order for its members to use them, to have meetings about education and/or science, and for enjoying their spare time.
9. In order to improve the relationships between members, the Society may establish dinner parties, concerts, ballots, theaters, exhibitions, sports activities, tours and entertaining activities, etc., or inform members about these activities organized by other bodies.
10. For several activities, the Society may buy movable and real properties, sell or rent them, and claim for real right on the real properties.
11. If needed, the Society may establish a Foundation, Federation, or join an existing Federation. With the proper permission, our Society may establish any kind of plants outlined in the Bylaw.
12. In order to protect its members and the youth from bad habits and to ensure a healthy life, the Society may organize sports activities.
13. The Society may organize international activities, become members to some bodies to represent the Turkish chemical life and profession, have our members be a part of those organizations, establish projects with these organizations or organize congresses and conferences.
14. To realize the aims, the Society may accept financial support from similar societies, syndicates, chambers and other occupational bodies, and donate to them.
15. If needed, under the Law for Relationships of Societies and Foundations with Public Bodies and Enterprises, issue no 5072, the Society may run common projects about public bodies and enterprises, and if the Ministries call for our services, the Society may become a partner in those activities.

16. If needed, the Society is entitled to establish sub branches and representative bodies in those places.

17. In areas parallel to the aims of the Society and those not prohibited with laws, the Society may establish platforms with similar societies or foundations, chambers, syndicates and similar non-governmental organizations to realize a common aim and to work on a common project.

18. The Society may provide all kinds of help to chemistry undergraduate students about professional respect, if funds are available, we may give prizes to successful students, give books or financial aid to those in financial need, organize free-of-charge education meetings for their good, helping them if they decide to establish platforms about legal issues, by conforming a relationship to the aims of the Society.

19. The Society may help disabled students in primary and secondary schools who want to work in chemical business, also help the disabled undergraduate students enrolled to a chemistry, chemical engineering, and chemical education department, request their institutions about providing appropriate logistic solutions to them, and help them as much as possible about finding a place for internship and/or a job.

1) Number of Members (Regularly paying their membership dues)

Total number of members is 5,750. 2,900 of them are candidates (still student), 300 of them are members of the Ankara sub branch, 1,200 of them are retired members, 650 are inactive members and 500 of them are full (regularly paying their membership dues) members.

2) Annual budget (in USD)

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<td>Other</td>
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<td>TOTAL INCOME</td>
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</tbody>
</table>

3) List of periodicals

“Kimya ve Sanayi Dergisi” (Chemistry and Industry; last published in 2008)

4) Full-time working personnel

One (Mr. Tahsin Kizilay, executive director of the TCS)

5) Web address

www.turchemsoc.org

6) Postal address

Address: Halaskargazi Caddesi No.:15 D.:8 Uzay Apt. Harbiye / İstanbul / TURKEY
7) Contacts (name, title, telephone, fax, e-mail)

a) Prof. Dr. Mehmet Mahramanlıoğlu
   General Secretary
   Tel.: +90 543 554 36 12
   Fax: +90 212 231 70 37
   E-Mail: mehmah@istanbul.edu.tr & mehmetmah@gmail.com
b) Tahsin Kızılay
   Manager
   Tel.: +90 212 240 73 31
   Fax: +90 212 231 70 37
   E-Mail: tahsin@turchemsoc.org & taum74@gmail.com

8) Planned national/international conferences

2014: 5th EuCheMS Congress - 31 August-05 September 2014 in Istanbul. (www.euchems2014.org)
2015: 27th National Chemistry Congress- 23-28 August 2015 in Canakkale
2016: IUPAC World Polymer Congress Macro2016 - .... - in Istanbul

9) Brief information about current president and contact details

Mr. Erkan BAYKUT (President of TCS)

Mr. Erkan BAYKUT was born in 1950 in Istanbul. In 1972, he graduated as chemical engineer from Yıldız Technical University, Istanbul. Same year, he started working in a Citric Acid plant named “FÜRSAN”, which was newly established in Kocaeli, Turkey. He continued to work in the different departments of the same workplace, and finally became the Factory Manager for 5 years, and General Manager for 10 years. In August, 1999, the devastating earthquake led to the collapse of the factory building, which led to his retirement. He went into commercial business about 3 years. In 2004, he started working in the Turkish Chemical Manufacturers Association (TCMA). He still serves as the Vice General Secretary in the same society. In 2006, the president of Turkish Chemical Society of that time, Prof. Dr. Ali Rıza BERKEM (deceased, May 2007) called for Mr. Erkan BAYKUT to work in the executive committee and since that time, he has been working as a member of the executive committee, and President for 4 years. In addition to these two organizations, he has several duties in the Ministry and some other organizations. Mr. Erkan BAYKUT has been married to Mrs. Nilgün BAYKUT for forty-two years with a daughter.
First Circular

16th ASIAN CHEMICAL CONGRESS (16ACC)

18-21 November, 2015
Dhaka, Bangladesh
(www.16acc.org)

Organized by
Bangladesh Chemical Society (BCS)

Under the auspices of
Federation of Asian Chemical Societies (FACS)

Invitation

You are cordially invited to join the 16th Asian Chemical Congress (16ACC), 2015 which will be held in Dhaka, Bangladesh during 18-21 November, 2015.

Goal of the Congress

The Asian Chemical Congress (ACC) is the biennial flagship scientific meeting of FACS. As a tradition, ACC is organized to bring chemists from Asia, Pacific region, and other parts of the world together for strengthening the cooperation and development in the field of chemical research and technology.

Call for Papers

You are invited to contribute presentation in either oral or poster on any of the sessions and symposia listed in the Scientific Program. Detailed information will be available soon on the conference web-site (www.16acc.org).

Language

The official language of the congress will be English.

Venue

Bangabandhu International Conference Centre &
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh.

The congress will provide an exciting opportunity for participants not only to benefit from the high standard scientific presentations but also to explore the cultural features of Bangladesh.

International Exhibition

16ACC will arrange an exciting exhibition for displaying Chemical Instruments, Equipment, Products and Publications. To book your space, please contact conference secretary.
International Advisory Board

1. All members of FACS EXCO
2. President, IUPAC
3. Secretary General, IUPAC
4. President, American Chemical Society
5. Professor Akira Suzuki (Nobel Laureate)
6. Professor Ei-Ichi Negishi (Nobel Laureate)
7. More to be announced in the 2nd circular.

16ACC Organizer

Chair:
Prof. Dr. Jasim Uddin Ahmad
jahmad1947@yahoo.com;
jsimahmad47@gmail.com

Secretary General:
Prof. Dr. Al-Nakib Chowdhury
nakib@chem.buet.ac.bd

Convener (Scientific): Prof. Md. Qamrul Ehsan
mqehsan@yahoo.com

Scientific Program

The conference will focus on a wide spectrum of Chemistry and relevant Technologies, viz.:

- Water, Soil and Environment
- Organic and Biotechnology
- Inorganic and Analytical
- Physical and Computational
- Food and Agriculture
- Medicine and Cosmetics
- Industrial and Materials
- Energy and Sensors
- Nanotechnology
- More----

Symposia
To be announced in the 2nd circular.

Publication

A book of Abstract will be published.

Registration

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The registration fee includes conference materials.
*To get the student discount, an evidence of studentship from the institute will be required.

Accommodation

Various categories of accommodation (hotel, motel, guest houses) are available in Dhaka city around the conference venue. Detailed information for reservation will be provided in the second circular.

Social Program

Local sightseeing trips, cultural events, excursions etc. may also be organized.

All correspondences should be addressed to:

Prof. Dr. Al-Nakib Chowdhury
Department of Chemistry
Bangladesh University of Engineering and Technology (BUET),
Dhaka-1000, Bangladesh
e-mail: nakib@chem.buet.ac.bd
Cell: +88 0171 6620026
FAX: +880 2 861 3046
Started in 1950, the ICCC is the leading and most established international conference in the field of coordination chemistry.

The 41st International Conference on Coordination Chemistry (ICCC 41), will convene in Singapore in 21 - 25 July 2014. This is a historical moment as the Conference has never been held in Singapore or ASEAN.

The organizing committee warmly welcomes you to Singapore, a cosmopolitan city brimming with a harmonious blend of culture, cuisine, arts and architecture, rich in contrast and colour, and one that is known to drive open innovation through creative science and innovative technology.

Local Organising Committee

Chair: T. S. A. HOR, IMRE/NUS/SNIC
Co-Chair: Y. ZONG, IMRE
Secretary-General: J. J. VITTAL, NUS
Treasurer: S. L. K. CHONG, IMRE

Members:
W. H. ANG, NUS
S. H. CHAN, NUS
A. Q. CHEN, ISES
C. Y. CHI, NUS
S. CHIBA, NTU
J. M. CHIN, IMRE
D. J. HUANG, NUS
K. W. HUANG, KAUST
H. V. HUYNH, NUS
W. K. LEONG, NTU
C. M. Li, Southwest Univ.
X. G. LU, NUS/IMRE
H. K. LUO, IMRE
Z. G. REN, Suzhou Univ.
C. Q. SUN, NTU
J. S. WU, NUS/IMRE
J. YIP, NUS
Y. G. ZHANG, ISES
Y. ZHAO, NUS
J. ZHAO, NUS
Y. ZHAO, NUS
Y. H. ZHU, ISES

Plenary Lectures

Jeffrey R. LONG
University of California Berkeley, USA
“Carbon Dioxide Capture and Hydrocarbon Separations in Metal-Organic Frameworks”

Wonwoo NAM
Ehwa Women University, South Korea
“Biomimetic Metal-Oxygen Coordination Complexes in Dioxygen Activation Chemistry”

Vivian YAM
The University of Hong Kong, Hong Kong, China
“Versatile Metal-Ligand Chromophoric Building Blocks - From Simple Discrete Metal Complexes to Supramolecular Assembly and Sensory Functions”

Keynote Speakers

Richard D. ADAMS
University of South Carolina, USA

Holger BRAUNSCHEIG
University of Würzburg, Germany

Xiao-Ming CHEN
Sun Yat-Sen University, China

Christopher CUMMINS
Massachusetts Institute of Technology, USA

Ekkehardt HAHN
University of Münster, Germany

Guo-Xin JIN
Fudan University, China

Susumu KITAGAWA
Kyoto University, Japan

Jianping LANG
Soochow University, China

Yi LU
University of Illinois at Urbana-Champaign, USA

Hiroshi NISHIHARA
University of Tokyo, Japan

Ken SAKAI
Kyushu University, Japan

Myunghyun Paik SUH
Seoul National University, South Korea

Li Min ZHENG
Nanjing University, China

Hongcai ZHOU
Texas A&M University, USA

Paul O’BRIEN
The University of Manchester, UK
Registration Fees

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<td>Student (Non Member)</td>
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Call for Abstracts -
Deadline: 31 January 2014

Authors are invited to submit oral and poster abstracts on the following:

A) Molecular & Sustainable Materials  
B) Crystal Engineering and Supramolecules  
C) Synthesis & Catalysis  
D) Interface with Biology & Biomedical Science  
E) Functional Complexes for Energy & Environmental Applications  
F) Featured Sessions  
G) General Sessions

For details on sub-topics and sessions, please visit:
www.iccc41.org
As a famous comprehensive research center with long history, numerous talents, first-class experimental conditions, tremendous contributions, and high reputations, Shanghai Institute of Organic Chemistry (SIOC), Chinese Academy of Sciences (CAS) is involving itself in basic research, application research and high-tech innovation research. Now, SIOC has a staff 569, including 350 scientific personnel, eight academicians of CAS and 51 professors. In addition, there are 447 graduate students.

SIOC, founded in June, 1950, is one of the first fifteen institutes established by Chinese Academy of Sciences, following the merger of the Institute of Chemistry of the former Central Academy of Sciences with the Institute of Chemistry and Institute of Materia Medica of the former Peking Academy of Sciences.

Started from the research of antibiotics and macromolecular chemistry, SIOC scientists have made tremendous contributions to the development of nation’s science, economy and defense in the past 60 years. “The total synthesis of crystalline bovine insulin (collaboratively)”, “Isolation and structure elucidation of bio-macromolecules like the ribosome-inactivating protein trichosanthin”, “Initiation of the steroid pharmaceutical industry and antibiotic research in China and the development of medicines for family planning”, “Total synthesis of yeast ala-tRNA (collaboratively)”, “Isolation, structure elucidation and total synthesis of bio-small molecules like the anti-malarial drug-Qinghaosu (Arteannuin)”, “Two important frontiers of physical organic chemistry: aggregation of organic molecules and radical chemistry”, “Development of fluorine-containing plastics and functional materials of national urgency” clearly illustrated the contributions.

In 1998, SIOC was selected as one of institutes that firstly enter the CAS “Knowledge Innovation Program”. Since then, it focuses its research on three major scientific themes, i.e., population & health, resource & environment, space and materials, and making great efforts to strengthen basic researches, particularly in the cutting-edge areas like chemical biology, modern organic synthetic chemistry, organometallic chemistry, physical organic chemistry and computer chemistry & cheminformatics. At present, it has 12 labs, including two state key laboratories (State Key Lab of Bio-organic and Natural Products Chemistry, State Key Lab of Organometallic Chemistry), and one CAS Key Lab of Organofluorine Chemistry. SIOC also publishes 3 professional Journals included by SCI: Acta Chimica Sinica (Hua Xue Xue Bao), Chinese Journal of Chemistry and Chinese Journal of Organic Chemistry.

A total of more than 330 research results won prizes by Ministry, Province or Municipality including 93 national prizes. Moreover, SIOC scientists has published 7609 academic papers and 355 granted patents.

SIOC has established worldwide academic contacts with universities and research institutions and placed a high value on creating collaborative projects with national and foreign enterprises as well as universities. SIOC is striving forward in full swing to create a more prosperous future in academic and talent development.
Shanghai Institute of Organic Chemistry (SIOC)
Chinese Academy of Science (CAS)

An Important Research Center of Organic Chemistry;
The Cradle of Organic Chemists in China;
One of the Key Bases of Organic Chemistry in the World.

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Postal code: 200032
Tel: +86-21-5492 5000
Fax: +86-21-6416 6128
Email: sioc@mail.sioc.ac.cn
Website: http://www.sioc.ac.cn