FACS
News Letter

No.2/ 1997  Federation of Asian Chemical Societies

Special Issue for 7ACC 97

FACS EXECUTIVE COUNCIL
(1997 / 1999)
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Member Societies
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Editorial

It is my great pleasure and honor to be appointed as a chairperson of the publications committee who is responsible for editing of the FACS Newsletter. Let me introduce myself briefly in order to enhance better future communication with all the members of FACS during my serving period of 1997-1999. My scientific background is "physical chemistry (photochemistry)" but my present expertise is "atmospheric chemistry" which is a newly evolving scientific discipline, "inter disciplinary" or rather "trans-disciplinary" field of science extending over chemistry, physics and ecology. It is a scientific basis for material circulation related to global, regional, and urban atmospheric environmental issues such as global warming, oxidant and acid deposition, biomass burning plume pollution, etc.

I believe the discipline in chemistry in the 21st century must be very different from those in the 20th century. Atmospheric chemistry is just one of examples of such a new initiative and other field such as "life chemistry," "material chemistry," etc. must be evolving as an extension of "classical" disciplines of organic, inorganic, physical and analytical chemistry. Keeping this direction in mind, discussion on balance between the classical and new discipline must be very important in every community of research chemists and chemical education both in developed and developing countries.

Hajime Akimoto
Chairperson of
the Publications Committee
Professor of
the University of Tokyo
Message from the 10th President of FACS

Hitoshi Ohtaki  
President of  
the Federation of Asian Chemical Societies  
Professor of Ritsumeikan University

Dear Colleagues :

It is my great honor to inform you that I was elected as the 10th President of the Federation of Asian Chemical Societies in the period of 1997 to 1999.

In these decades the growth of economy and industry in Asian countries based on the development of scientific technology is remarkable, and thus, Asia becomes one of the three major parts of the world from the viewpoint of economy, industry and scientific technology. Under such a circumstance, chemistry as a field of creating new materials is recognized to be very important, and it is often said that Chemistry is the Center of Science. Therefore, rapid and sound development of chemistry, as well as other scientific fields, in Asian countries is very much expected as an urgent task. However, we should also see that there is some difference in the scientific levels in different countries in the Asian area. The Federation of Asian Chemical Societies was established in order to overcome the problem caused by the difference in the level of chemistry in different countries by the smooth exchange of scientific information and by mutual understanding of people in these countries. Thus, the role of the Federation of Asian Chemical Societies is very important to solve problems arising from Chemical Sciences in Asia and achieve a good accomplishment of the scientific and technological development to obtain a better quality of life of people in this area. Thus, the responsibility of the president of FACS is heavy and important.
After the establishment of the Federation in 1978, this is the first time that Japan is elected as the presidential country. I personally regret the late election of the Japan's President of the Federation of Asian Chemical Societies from the viewpoint of Japan's economical and scientific standards. Now, it is a good opportunity for the Chemical Society of Japan as the representative society of Japan in chemistry to serve for the Federation for the development of chemistry in Asia. The term of two and a half years as the President until the next General Assembly of FACS will be held in November, 1999 in Taiwan, I sincerely wish to devote myself to Asian people for their good achievement in chemical sciences.

The 7th Asian Chemical Congress held in Hiroshima from May 16th to 20th, 1997 was very much successful by inviting three Nobel Laureates and other distinguished scientists. Exchanges in scientific information and establishment of world-wide friendship among scientists from not only Asian counties but also European counties and the American continent were warm and valuable. The success of the conference was certainly owing to the cooperation of the participants, efforts of the members of the Organizing Committee and helps of sponsoring organizations. The success should be connected to the development of the Federation of Asian Chemical Societies and enhancement of activities of scientists belonging to the Federation.

It is clear that Asia is the place of the Hope and Future in the world. We may not be able to develop without cooperation among countries in Asia and in other continents. The Science Council of Japan is considering about the establishment of the Organization for the Development of Chemistry and Chemical Technology in Asia by creating a new organization, the Science Council of Asia, for cooperation of the fields of social and natural sciences. Another international conference called Eurasia Conference on Chemical Sciences is continued to keep scientific cooperation among scientists in Asia and Europe, and both Federations of Asian and European Chemical Societies decided to support this sister conference.

The 21st century will be the century of Asia. We wish to keep a close connection each other to approach the goal of human happiness.
Message from the Secretary-General

Yoshito Takeuchi
Secretary-general of
the Federation of Asian Chemical Societies
Professor of Kanagawa University

It is indeed an honor and a pleasure for me to act as the Secretary General of FACS for the coming two years. I had, however, never thought that I would so deeply be involved in FACS when I wrote a letter to Prof. Ohtaki about four years ago.

At that time the Chemical Society of Japan (CSJ) had just determined its mind to become the host of 7ACC to be held in 1997, and a very brief outline of 7ACC was announced. Since I was the chairperson for the Subcommittee of International Relations, the Committee for the Promotion of Chemical Education, CSJ, I was rather keen if the Symposium for Chemical Education was included in the plan or not. I had, by chance, an opportunity to the circular for 6ACC which in 1995. I found that in the brief outline for 7ACC, Chemical Education was not included. I wrote to Prof. Ohtaki to the effect that chemical education should be included in 7ACC.

Prof. Ohtaki immediately responded and asked me to be the organizer of the Symposium for Chemical Education in 7ACC. There was no reason why I should decline, and I agreed to take this responsibility.

To my surprise, however, I found that I was tentatively nominated as the General Secretary for 7ACC when I firstly attended the meetings of the intended organizers of symposia for 7ACC.
I was rather hesitating particularly because it was just before my retirement from the University of Tokyo to move Kanagawa University, a private university where usually freedom will be less as compared with the situation in national universities like University of Tokyo. I do not remember in detail; however, Prof. Ohtaki was eloquent enough to persuade me to admit this tentative appointment.

If one looses a point, it is easier for him to loose the second point. Within a few months I found again I was tentatively expected to be the Secretary General of FACS with Prof. Ohtaki as the President after 7ACC. There is a Japanese proverb “Doku Kuwaba Sara Made” meaning that if you have to take some poison, you might eat up the dish as well to make the tragedy completed! This was the reason why I was appointed to the present position. Nevertheless, I will try my best so that FACS will appropriately function. My belief is that in the 21st Century the cooperation among Asian countries will become more and more important and that this should be the line which Japan should pursue. I hope my small efforts will work to materialize this anticipation.

32nd FACS Executive Council Meeting at Hiroshima
7ACC’97
-The Role of Chemistry for the Development of Natural Resources and Conservation of Environment in Asia-

The Seventh Asian Chemical Congress (7ACC) was held under the auspices of Science Council of Japan and the Chemical Society of Japan during May 16-20, 1997 in Hiroshima. The venue was International Conference Center Hiroshima at the side of Peace Memorial Park. The chairperson of the National Organizing Committee was Prof. Hiroo Tominaga at Saitama Institute of Technology, and Prof. Makoto Misono at University of Tokyo served as a chairperson of Program Committee.

The congress was attended by 876 registrants with 210 foreign participants from 28 countries and regions, and 666 local participants. There were five plenary lectures including three Nobel Prize winners, Drs. Yuan T. Lee, Jean-Marie Lehn and F.S. Rowland. The numbers of oral and poster presentations were 289 and 322, respectively. Altogether 619 papers were presented including the plenary and three award lectures.

Opening Remarks from Chairman of Organizing Committee
Hiroshima Forum for Citizens with a theme of Asia and Hiroshima for tomorrow -economy and environment- was held as a part of 7ACC on May 17 at nearby Nissay Peace Hall. The report of the Forum appears separately in this issue.

At the Congress the turnover of FACS officers was marked. The President Dr. Sevilla III of the Philippines stepped down and the President elect, Prof. Ohtaki of Japan leads FACS as new President. The new set of officers includes Prof. Takeuchi as Secretary General, Prof. Akimoto as Chairperson of the Publication Committee, and Prof. Johnsee Lee of Taiwan as President-elect.

Opening Ceremony

Congress Site, International Conference Center Hiroshima
The Congress ended with a farewell banquet at ANA Hotel. The participants enjoyed the finale of the party with country songs and dances promising to have a union at the next Congress in Taipei in 1999.
Dream and Hope for Asian Science in the 21st Century

Yuan Tseh Lee
Academia Sinica, Taipei, Taiwan

In spite of the fact that the globalization of the world economy is moving in such a fast pace and the entire world seems to be moving into a borderless society, so far as high tech based economical competitions are engaged among places and localities, it is still important to pay attention to how science is done in various regions of the world.

Most Asian countries have fallen behind western countries in science and technology during the last millenium. Especially, after the industrial revolution, while industrialized countries expand the scope of influence, most of Asian countries become colonies of western power and suffered from the consequences. During the 20th century the world has changed substantially in many parts of Asia. However, if Asia as a whole does not catch up with western countries in science and technology during the early part of the next century and does not move with the next wave of information revolution, people in this region will again suffer from the deteriorating economical conditions.

There are several things which are advantageous in promoting science in densely populated Asia, i.e. the abundance of yet to be cultivated brain power, the biodiversity and the cultural heritage which places importance in a family value. None of the Asian country is likely to have every ingredient to meet the challenge of the 21st century alone, but Asia as a whole can do it.

Advances of asian science is very important not only for the welfare of Asian people, but also for the sustainable development of the entire world. "How can we realize the dream and hope of Asian Science in the 21st Century" is the subject which will be intensely discussed in this lecture.
Perspectives in Supramolecular Chemistry: Towards Programmed Chemical Systems

Jean-Marie LEHN
Université Louis Pasteur, Strasbourg and
Collège de France, Paris

Molecular chemistry has developed a wide range of very powerful procedures for building ever more complicated molecules from atoms linked by covalent bonds. Beyond molecular chemistry lies supramolecular chemistry which aims at constructing highly complex chemical systems from components held together by intermolecular forces.

Supramolecular chemistry has relied on more or less preorganised molecular receptors for effecting molecular recognition, catalysis and transport processes. A step beyond consists in the design of systems undergoing self-organisation, i.e. systems capable of spontaneously generating a well-defined supramolecular architecture by self-assembling from their components in a given set of conditions.

Self-organization processes may be directed via the molecular information stored in the covalent framework of the components and read out at the supramolecular level through specific interactions. They thus represent the operation of programmed chemical systems.

Various approaches to self-assembling systems of either organic or inorganic nature have been pursued. Several of them will be described.

The design of molecular information controlled, "programmed" and functional self-organising systems represents new horizons in supramolecular chemistry towards "intelligent", functional supramolecular entities, network engineering and polymolecular patterning.

From molecular recognition, to self-organisation, to programmed chemical systems supramolecular chemistry progressively leads up the ladder of complexity.

General reference
Hiroshima Forum for Citizens:
Asia and Hiroshima for tomorrow
-Economy and Environment-

Eiichi Kimura,
Organizer of Hiroshima Forum for Citizens
Professor of Hiroshima University

The above forum was opened at 4-6pm May 17 (Sat). Hiroshima, which locates at the center of Seto Inland Sea and is gifted with rich resources, has been steadily developing new industries for the prosperity and welfare of the residents in this area. Simultaneously, Hiroshima has been paying keen attention in protecting environments of the Inland Sea. From ancient time Hiroshima has been promoting friendship and exchange with Asian countries by fully taking its historical and geographical advantages.

With these backgrounds, the forum has focused on the above theme. The panelists and their subjects were as follows:

Hisamatsu, Hiroshi
(Affiliate: Chugoku Bureau of International Trade and Industry),
“Rising Asian Economy and Its Relation to the Chugoku District”

Abstract: Developing countries mainly in Asia are rapidly growing their economy. At the same time, however, not only local environmental pollution problems are becoming more and more serious, but also from the global environmental point of view these countries are becoming more and more important. Given such a circumstance, we have to cooperate with these developing countries as well as OECD countries in order to cope with these problems.

Yamashita, Shoich
(Hiroshima Univ., International Coop. Dept.),
“Structural Changes in Asia and Its Impacts on Hiroshima”

Abstract: Recent economic development in East and South-east Asia is remarkable. Firstly, we observe how the Japanese affiliated companies have contributed to the Asian growth and secondly, we consider the impacts and consequences of East Asian miracle on the Japanese economy, especially on Hiroshima.
Yanagi, Ken-ichi
(Mitsubishi Heavy Industry),
"Development of Environmental Protection Technologies and Activity for Asia Countries"

Abstract: Environmental problems are now of global concerns. We have given attention to these problems since the early stage and engaged in the development of environmental protection technologies, such as flue gas desulfurization process and NOx removal catalyst. This presentation includes the history and background of our research and development for environmental protection technologies. In addition, our activity in the field with Asian countries is presented.

Nakayama, Katsuya
(Ex-Governmental Industrial Research Institute, Chugoku),
"Environmental Reservation of the Seto Inland Sea and Hiroshima"

Abstract: The Seto Inland Sea belongs to the western Japan and exists surrounded by Honshu, Kyusyu and Shikoku Islands. At present, about 30 million people live and a large number of industrial factories are in operation around this inland sea. Many efforts for preserving the environment of this district have been carried out. A proposal to cleanup the enclosed coastal sea is presented.

The participants (more than 200) were very sincere and active in discussing the theme problems and trying to find ways to solve the complex problems, while mixing together and exchanging friendship. Overall, the forum was very successful.
THE CHEMICAL SOCIETY OF VIETNAM

The Chemical Society of Vietnam (CSV) is a professional organization associating all Vietnamese Chemists, working in home country as well as abroad in the fields of chemical education, research, production and business. The main aims of the Society are to assist works of the members in particular and to speed up the development of Vietnam's chemistry in general.

The CSV is recognized by the law and by the public as an authoritative organization in consulting and examining the plants of scientific, technical and social economic development of chemistry in Vietnam on the national scale.

The CSV's members carry out various activities such as improving their chemical knowledge, studying and transferring technology chemical business.

More ever, the CSV defends the legitimate interests of its members. The CSV is a member of the Federation of the Asian Chemical Societies (FACS) and a member of the International Union of Pure and Applied Chemistry (IUPAC), taking part in the international cooperation on Chemicals and Chemistry.

ORGANIZATION OF THE CSV

By decision No.207 CT of the Prime Minister of the Republic Socialist of Vietnam, the CSV was founded on July 11th, 1988. The organization operates under the rule approved by notice No.341 TCCP on August 10th, 1990 of the Government.

The organization consists of the following organizations in Vietnam's territory.

I. Member organizations under the CSV

I-1. Basic chemicals production

- Viettri Chemical Factory
- Duogiang Chemical Factory
- South Vietnam Basic Chemicals Company
- Danang Chemical Industry Company
  with products of sodium hydroxide, acids and pure chemicals.
I-2. Agro-chemical production
- Habac Nitrogenous Fertilizer and Chemicals Company
- Lanmthao Fertilizer and Chemical Company
- The Southern Fertilizer Company
- Vandien Fused Magnesium Phosphate Company
- Vietnam Pesticide Company (VIPESCO)
  with products of superphosphate fertilizer, complex fertilizer and insecticides.

I-3. Paint and plastic industry
- Hanoi Synthetic Paint Company
- Hanoi Paint Company
- Haiphong Paint Company
- The Southern Plastic Company
- VINAPAC
  with various products of paints, print-ink, plastic pipe and cover.

I-4. Rubber Processing
- Saovang Rubber Company
- Danang Rubber Company
- The Southern Rubber Industry Company
  Process all kinds of products from natural rubber such as rubber wheels for vehicle, transfer-bands and rubber pipes.

I-5. Detergents and cosmetics production
- Hanoi Soap and Washing Powder Company
- VISO Company (VISO Washing Powder Company)
- Orient Company
- NET Company (NET Washing Powder Company)
- LIX Company (LIX Washing Powder Company)
- Songcam Chemicals Factory
- Ngocthang Silicate Company
  Produce materials and products of detergent, perfume, cosmetic products.
I-6. Industrial gases and welding materials

- SOVIGAZ Company
- Thuongtin Welding Stick Factory
- Trangkenh Calcium Factory
- Yenvien Oxygen Factory (YOF)
  Produce gases of oxygen ($O_2$), nitrogen ($N_2$), acetylene ($C_2H_2$),
calcium carbide ($CaC_2$), soot, various kind of welding stick.

I-7. Branch of electro-chemistry

- The Hanoi Union of Dry Battery Enterprises
- The South Dry Cell and Storage Battery Company
- The Light Storage Battery Company
- Vinphu Storage Battery Company
  Produce all kinds of dry Cell Storage battery for house hold industry
  and military purposes.

I-8. Silicate chemistry

- Vietnam Cement Corporation operates in the areas of Haiphong,
  Hoangthach, Bimson, Hatien
- VIGLACERA Corporation with products of glass and ceramic
  materials for daily supplies and construction.

I-9. Minerals and chemicals

- Vietnam Apatite Company
- Vishnu Pyrite Company
- Thanhhoa Serpentine Company
  Materials for the demands of both domestic fertilizer manufacture
  and export.

I-10. Petro-chemical industry

- PETROVIETNAM and its members: exploit, process and
  import-export crude oil and its products.

I-11. Chemical education organization

- Chemistry faculties in the national universities and technical universities
- The high school of chemistry
- The technical school of chemistry
I-12. Chemical research and design bodies

- The Institute of Industrial Chemistry
- The Institute of Chemistry
- The Institute of Tropical Technology
- The Institute of Natural Products Chemistry
- Union of Science & Production of Ho Chi Minh City
- The Institute of Petroleum and Gas
- The Institute of Dying
- The Institute of Radioactive and Rare Earth
- The Chemical Industry Design Company

I-13. Business-Information-Service bodies

- The Chemical Import-Export Company
- The Centre of Experimental Service Analysis of Ho Chi Minh City
- The Centre of Chemicals Information
- The Chemistry & Chemical Industry Journal

II. The specialized divisions

2.1. Division of Chemistry Education
2.2. Division of Inorganic and Fertilizer Chemistry
2.3. Division of Electro-Chemistry
2.4. Division of Theoretical Chemistry
2.5. Division of Organic Chemistry
2.6. Division of Surface and Catalytic Chemistry
2.7. Division of Pharmaceutical Chemistry
2.8. Division of Natural Products Chemistry
2.9. Division of Bio-Chemistry
2.10. Division of Silicate Chemistry
2.11. Division of Environmental Chemistry
2.12. Division of Polymer Chemistry
2.13. Division of Technical and Technological Chemistry

III. Local chemical organizations

3.1. Hanoi Chemical Society
3.2. Quangnam Chemical Society
3.3. Ho Chi Minh Chemical Society
VIETNAM CHEMISTRY
AT PRESENT AND IN THE FUTURE

I. Chemical Industry

Enterprises of chemical industry were founded in 1950s mainly for the development of agriculture (fertilizer) and partly for consumer goods. The structure is not comprehensive, not synchronous in small scale with backward technology, fast corrosive equipment, causing environmental pollution.

Chemical Industry, however, is now developing, 10% increasingly every year, meeting part of demand at home.

Some main products achieved:
- various kinds of fertilizer : 1,000,000 tons
  satisfying 70% of demand of phosphate fertilizer
  9% of demand of nitrogenous fertilizer
- Basic chemicals:
  - various kinds of fertilizer : 24,000 tons
  - sodium hydroxide : 10,000 tons
  - insecticide : 14,000 tons
  - purgative substances : 65,000 tons
  - paint : 10,000 tons
  - cement : 5,000,000 tons
  - paper : 220,000 tons
  - natural rubber : 120,000 tons

II. Labor force for chemical industry

By training at home and abroad, and working at the factories, there have been a team specializing in chemical industry:

- over 600 doctors
- 6,000 chemical engineers
- 170,000 chemical workers including 24,300 technical workers
- 4,000 workers in deployed research

In the recent years, together with the exploration and exploitation of the labor force for this field has been shaped from the process of exploitation and in the future to the oil processing.
III. The potentiality of natural resources for chemical industry of Vietnam

With potential resources of minerals, gas and tropical plants Vietnam has a source of materials of various kinds. Sufficient for the chemical industry to keep up with the development in the world.

For the demand, with the population of 100 million people situated in active economic zone, in the progress of industrialization and modernization, Vietnam has a big market for the chemical products. Therefore development of chemical industry is necessary with a great prospect.

Some main resources for chemical industry are estimated as following:

- Crude oil: 200 mil. tons
- Natural gas and associated gas: 100 bil. m³
- Apatite ore: 2.1 bil. tons
- Salt: 2 bil. tons
- Chromite ore: 20 mil. tons
- Titanium ore: 15 mil. tons
- Bauxite ore: 5 bil. tons
- Rare earth ore: 9 mil. tons (total of oxide)

The kinds of metal and unmetal (metalloid) at small and medium scale are various and plentiful.

- Sources of essential oil: 300 tons
- Natural rubber: 250,000 tons (up to 2010)

IV. Some demands and aims

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<tr>
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<th>In 2000</th>
<th>In 2010</th>
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<tbody>
<tr>
<td>Phosphate fertilizer</td>
<td>1.5 mil. tons</td>
<td>2 mil. tons</td>
</tr>
<tr>
<td>Urea fertilizer</td>
<td>0.9 mil. tons</td>
<td>1.5 mil. tons</td>
</tr>
<tr>
<td>Insecticide</td>
<td>18,000 tons</td>
<td></td>
</tr>
<tr>
<td>Refined oil</td>
<td>6 mil. tons</td>
<td>12 mil. tons</td>
</tr>
<tr>
<td>Crude oil</td>
<td></td>
<td>20-25 mil. tons</td>
</tr>
<tr>
<td>Cement</td>
<td>20 mil. tons</td>
<td>1.2 mil. tons</td>
</tr>
<tr>
<td>Pulp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber</td>
<td>180,000 tons</td>
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</tbody>
</table>

The recent consumption of plastic is just 1.5 kgs/person in comparison with 16 kgs/person in Thailand and 80 kgs/person in Japan. All raw materials have to be imported. In the future, the oil based industry as well as plastic synthesis industry will develop rapidly.

With the demand of development, with the potentiality of rich materials supplying industry, with the increasingly cooperation tendency in the region and in the world, it can be sure that Vietnam chemical branch will make the stable steps in the near future.

The CSV must play an important role in the development of the Vietnam Chemistry and it can contribute to building up the civilized and fair society of Vietnam.
FOURTH APFAN WORKSHOP ON FOOD ANALYSIS (4AW)

The Asia Pacific Food Analysis Network (APFAN) held another successful hands-on Workshop at the Queensland Health Scientific Services Laboratory (QHSSL) in Brisbane on May 10 – 17, 1996. There were 22 participants from Papua New Guinea, Fiji, Philippines, Indonesia, Malaysia, Thailand, India, Sri Lanka and Nepal, who spent a week in the laboratory developing their skills in vitamins, trace minerals, dietary fibre and pesticide analysis in foods. Food and water microbiology, instrument maintenance and trouble shooting was also included. Participants had a choice of the stream that would follow.

On the first day, Friday May 10 there were lectures by overseas experts from Canada, England, Philippines and Sri Lanka on aspects of food analysis and nutrition in developing countries, followed by detailed lectures by members of the QHSSL on the laboratory work. A Proceedings of 4AW was given to the participants at the Workshop.

The Chairman of the Organizing committee of 4AW and Assistant Director of QHSSL, Mr. Graham Craven, said afterwards that 4AW had been the most successful hands-on Workshop held so far. It differed from previous workshops in two respects.
Firstly, partly due to feedback from participants at previous workshops who had suggested that it be longer, 4AW was made slightly longer than previous workshops by the inclusion of an extra day, so that there could be a full week in the laboratory rather than four days as before. This gave a free weekend and a bus tour of the Gold Coast and Brisbane was organized, which was much appreciated by participants. Secondly, 4AW was arranged to follow directly after the 29th Annual Convention of the Australian Institute of Food Science and Technology (AIFST), held on May 5-8 at the nearby Gold Coast. APFAN and AIFST organised a joint Symposium at the Convention and also shared the sponsorship of two overseas experts, Dr. M. Garcia from Canada and Dr. P. Finglas from Norwich, England. It is hoped that further interaction between APFAN and AIFST may be possible in the future. Mr. Graham Craven also ran a Method Validation Workshop on May 9, organised by the National Association of Testing Authorities (NATA) Australia, which was attended by many of the 4AW participants.

The organisation prior to the Workshop was in the hands of the Coordinator of APFAN, Dr. Howard Bradbury. We wish to thank our major sponsor, the Crawford Fund for International Agricultural Research, Melbourne, without whose help 4AW would not have been possible. We also thank the Australian Centre for International Agricultural Research (ACIAR) and the International Foundation for Science (IFS) for their support. APFAN is a “Project” of the Federation of Asian Chemical Societies (FACS) and we thank FACS for its continuing interest in our work and for supporting APFAN by means of a seed grant. Other bodies which supported APFAN with seed grants were the Royal Australian Chemical Institute (RACI) and COSTED.

Interest in APFAN Workshops has steadily increased since the first one in 1991, and there were more than 60 registrations for 4AW, but only space in the QHSS laboratory for about 22 persons. Because of the demand, there will be another Workshop (5AW) in September 1997 in Brisbane. APFAN also plans to run a South Asian Regional Workshop on Food Analysis in Sri Lanka in June 1997 and its Fourth Conference on Food Analysis (4AC) in Thailand in November 1998.
FACS Newsletter call for advertisement

The Federation of Asian Chemical Societies (FACS) publishes a bi-annual newsletter and is based in Japan from 1997 to 1999. The newsletter is distributed to member societies of FACS and boasts a total membership exceeding 50,000 all throughout the Asian region.

We are calling for advertisements for the next issue of the FACS Newsletter. The advertisement rates are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Format</th>
<th>Rate</th>
</tr>
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<tbody>
<tr>
<td>Back-cover</td>
<td>color (glossy)</td>
<td>US$ 500</td>
</tr>
<tr>
<td>Inside-cover</td>
<td>color (glossy)</td>
<td>US$ 400</td>
</tr>
<tr>
<td>Full-page</td>
<td>b/w</td>
<td>US$ 200</td>
</tr>
<tr>
<td>Half-page</td>
<td>b/w</td>
<td>US$ 100</td>
</tr>
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If interested, contact the 1997-1999 FACS Chairman of publications for more details:

Professor Hajime Akimoto  
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Fax: +81-3481-4562

We appreciate your support.

FACS NEWSLETTER
MAJOR MEETINGS

MEETING: 14th Philippine Chemistry Congress
PERIOD: MAY 21-23, 1998
VENUE: SUBIC CROWN PIER, SUBIC FREEPORT
CONTACT: Dr. Gerardo Janairo
Department of Chemistry
De Lasalle University
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PHONE: +632-526-42-47
FAX: +632-500-451
E-MAIL: cosgcj@dlsu.edu.ph

MEETING: 8th Asian Chemical Congress
PERIOD: November 21-25, 1999
VENUE: Taipei International Convention Center
Taipei, Taiwan

FACS INDIVIDUAL MEMBERSHIPS

Applications are invited from chemists in the Asia-Pacific region for individual Memberships of FACS. The annual subscription is USD 5.00 and USD 50.00 for life memberships.

The privileges for Individual Membership are as follows:

1. Individual members will be placed on direct mailing list for all FACS publications and circulars including the FACS Newsletter which will be free to individual members.

2. Special discount of registration will be given to individual members for FACS-sponsored conferences.

3. Individual member will receive invitation to attend the Biennial General Assembly as observers.

4. Individual members will have their names published in FACS directory of members which will be updated regularly.

5. Individual members will be entitled to a reduction of all proceedings of FACS and FACS-endorsed conferences.

6. Life individual member will receive a certificate of their membership.
FACS LIFE MEMBERS

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  - Toothbrushes
  - Mouthwashes
  - Denture-care products

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  - Laundry detergents
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  - Hair Rinses
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  - Hair styling agents
  - Hair grooming agents
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  - Bathroom cleaners
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