

19th IUPAC International Conference on Chemical Research Applied to World Needs (CHEMRAWN XIX) 2011

Institut Kimia Malaysia (IKM), together with University of Malaya (UM), Academy of Sciences Malaysia (ASM), British High Commission, and American Chemical Society (ACS), jointly organized the 19th IUPAC International Conference on Chemical Research Applied to World Needs (CHEMRAWN XIX) from September 26-29, 2011 at the Putra World Trade Centre, Kuala Lumpur, Malaysia under the auspices of International Union of Pure and Applied Chemistry (IUPAC). CHEMRAWN XIX is supported by the Ministry of Science, Technology and Innovation Malaysia (MOSTI).

IUPAC CHEMRAWN Committee

The Committee on Chemical Research Applied to World Needs, or CHEMRAWN, is an IUPAC Standing Committee that focuses on strategic activities in concert with the following six IUPAC goals:

- ❖ Address global issues
- ❖ Advance research through scientific discussion
- ❖ Assist industry towards sustainable development, wealth creation, and improvement of the quality of life
- ❖ Foster communication among chemists and organisations with special emphasis on needs in developing countries
- ❖ Enhance education and the application of chemistry globally
- ❖ Increase the diversity in IUPAC bodies

The CHEMRAWN Conferences, starting with CHEMRAWN I on “Future Sources of Organic Raw Materials”, emphasize on applications of chemical research and innovation to meet the needs of industry for sustainable development and elevating the quality of life. Subsequent conferences on advanced materials, ocean resources, health, atmosphere, sustainable development, greener manufacturing processes, innovation industry, and chemistry for water, all focusing on applications of chemical research meeting various needs. The recent CHEMRAWN XVII on “Greenhouse Gases: Mitigation and Utilisation” held in Queen’s University, Ontario, Canada from July 8-12, 2007 touches on the global issues of global warming while CHEMRAWN XVIII on “Ethics, Science and Development” was held in Glasgow, Scotland from August 3-4, 2009 in conjunction with the 43rd IUPAC Congress.

CHEMRAWN XIX

The current world economy is driven by fossil fuels. According to the International Energy Agency (IEA), fossil fuels comprising oil (36.0%), coal (26.8%) and natural gas (23.3%), account for 86% of the world energy use in 2007 with nuclear power making up 5.8% and renewable energy 8.1%. Within the renewable energy category, biomass accounts for 4.0%, hydroelectric 3.0%, solar heat 0.5%, wind 0.3%, geothermal 0.18%, biofuels 0.18% and solar photovoltaic 0.04%. However, such a pattern of energy consumption is not sustainable as fossil fuels are depleting resources. In addition, crude oil prices have a tendency to fluctuate violently due to economic and political reasons. Great efforts are being made to develop renewable and sustainable energy sources to compliment the use of fossil energy.

With the theme of “Renewable and Sustainable Energy from Biological Resources”, CHEMRAWN XIX focused on chemical research, technology and innovation in renewable and sustainable energy that can be harvested from biological resources including carbohydrates, starchy and cellulosic materials, oil crops/oils, biomass, municipal waste, biological effluent and sewerage, and others. The issues of food versus feed versus carbon footprint were also discussed.



VIP Guests for the Opening



VIPs at Opening Ceremony



Datuk Dr Soon giving the Welcome Address



Datuk Fadillah Yusof presenting the Opening Address



Datuk Fadillah Yusof officiating the Opening Ceremony



Participants at the Opening Ceremony

1. Opening Ceremony

The CHEMRAWN XIX Opening Ceremony was held on Tuesday, September 27, 2011 at the Putra World Trade Centre, Kuala Lumpur. The Honorable Minister of Science, Technology and Innovation, YB Datuk Seri Dr Maximus Johnity Ongkili officiated at the Opening Ceremony.

2. Scientific Programme

The **Scientific Programme** of CHEMRAWN XIX comprised four (4) plenary lectures, one (1) forum, and sixty one (61) oral and poster presentations.



At the poster session



ACS President Dr Nancy Jackson with Datuk Dr Soon



VIP Guests at CHEMRAWN XIX



CHEMRAWN XIX in session

2.1 Plenary and Forum Sessions

The Plenary Sessions comprised the following four (4) Plenary Lectures:

- ❖ **The Global Scenario in Renewable Energy and Green Technology**
Datuk Loo Took Gee
Ministry of Energy, Green Technology and Water, Malaysia
- ❖ **Development of Intensified Integrated Bio-Refineries: Biomass-to-Chemicals/Biofuels Conversion**
Prof Galip Akay
Newcastle University, United Kingdom
- ❖ **First, Second and Third Generation Biofuel from Palm and Other Sources**
Datuk Dr Choo Yuen May
Malaysian Palm Oil Board, Malaysia
- ❖ **The production of biofuels and bio-products in microalgae**
Dr Beth Rasala
University of California San Diego, United States of America

The forum session comprised the following:

- ❖ **Forum on World Agriculture: Towards the Third Green Revolution: World Agriculture as a Key Industry of the 21st Century**

Led by Dr David Evans
Consultant, United Kingdom

2.2 Scientific Sessions

The scientific programme of CHEMRAWN 2011 covers the following eight (8) topics:

- ❖ Bioethanol
- ❖ Biodiesel
- ❖ Biogas
- ❖ Biomass including Biomass To Liquid (BTL)
- ❖ Renewables including effluents and sewerage
- ❖ Green Energy from Algae
- ❖ Other Renewable and Sustainable Energy Sources
- ❖ Food vs Fuel vs Carbon Footprint



Dato' Chang presenting souvenir to Plenary Speaker
Dato' Loo Took Gee



Participants from UPM



Meeting of Future Action Committee



Members of Future Action Committee

3. CHEMRAWN XIX Delegates

A total of 175 delegates from the following 22 countries participated in CHEMRAWN XIX:

Australia	Brazil	Canada	Czech Republic	France
Germany	India	Indonesia	Iran	Ireland
Italy	Kenya	Malaysia	Mexico	Netherlands
Nigeria	Norway	Philippines	Spain	Thailand
UK	USA			

The delegates expressed their satisfaction with the excellent scientific programme and were impressed with the organization of such an important scientific meeting.

4. CHEMRAWN XIX 2011 Future Action Committee

The CHEMRAWN XIX 2011 future action committee has been formed to initiate projects based on the topics and issues deliberated at the conference to a broader audience.

5. Parallel Events

In conjunction with CHEMRAWN XIX, the following events were also held:

- ❖ 13th International Symposium on Advances in Extraction Technologies (ExTech) 2011
- ❖ LabAsia 2011 Exhibition
- ❖ International Symposium on Women in Science and Engineering (WISE) 2011



VIP Guests at Sky Bridge Petronas Twin Towers



At Briefing Session on the Sky Bridge

6. CHEMRAWN XIX/ExTech 2011/WISE 2011 Appreciation Dinner

A CHEMRAWN XIX/ExTech 2011/WISE 2011 appreciation dinner was held at the Malaysian Petroleum Club, 42nd level, Petronas Twin Tower on September 27, 2011.



Appreciation Dinner at Malaysian Petroleum Club



Datuk Dr Soon briefing the Guests

7. CHEMRAWN XIX/ExTech 2011/WISE 2011 Joint Banquet

A CHEMRAWN XIX/ExTech 2011/WISE 2011 Joint Banquet was held on Wednesday, September 28, 2011 at the Putra World Trade Center, Kuala Lumpur. Close to 450 guests attended the Banquet and the Guest-of-Honour was the Minister of Science, Technology and Innovation, YB Datuk Seri Dr Maximus Johnity Ongkili.

The guests were treated to a sumptuous 8 course Chinese dinner and entertained with cultural dances by dancers from the Malaysian Tourism Promotion Board and songs from the guests.



YB Minister with VIP Guests



Datuk Dr Soon giving Welcome Speech



Guests at Banquet



YB Minister singing Don't Forget To Remember Me

8. LabAsia 2011

The 3rd International Laboratory, Analytical and Instrumentation Technology Exhibition entitled **LabAsia 2011** was held in conjunction with CHEMRAWN XIX from September 27–29, 2011. LabAsia 2011 showcased the latest in analytical techniques and laboratory services including instrumentation, laboratory safety, management and information systems, environment and waste management, chemicals and scientific publications. A total of 130 companies from 45 countries took up 250 booths to exhibit their latest products, technologies and services.

9. Conclusion

CHEMRAWN XIX was considered a success as it was a well managed scientific meeting with high level presentations by young and eminent scientists from many countries. It has also achieved its objective of promoting the advancement of chemical research, technology and innovation in renewable and sustainable energy.

10. Appreciation

The smooth running of CHEMRAWN XIX is due to the dedication of the Organizing Committee and the IKM Secretariat staff, as well as the support and cooperation of the IKM Council. Our sincere appreciation must also go to the sponsors, the collaborating organizations and the exhibition manager as well as invited speakers, poster presenters and participants. Our appreciation also goes to the Honorable Minister, YB Datuk Seri Dr Maximus Johnity Ongkili for his strong support of

CHEMRAWN XIX and the support of the Ministry of Science, Technology and Innovation. Special thanks are due to Professor Leiv Sydnes and members of the International Programme Committee.



Guests having a good time



ACS President Dr Nancy Jackson presenting a souvenir to Honourable Minister



Datuk Dr Soon cutting Birthday cake



Datuk Dr Soon thanking the guests



YB Minister with overseas guests



YB Minister with ECMI Team headed by CP Saw