

International Year of Chemistry 2011

On the request of International Union of Pure and Applied Chemistry (IUPAC) UNESCO nominated the year 2011 as International Year of Chemistry (IYC). In its general assembly in Glasgow in 2009 IUPAC decided that the IYC 2011 should be celebrated in all membership countries and gave the responsibility to the chemical societies to organize activities in their own countries. In Finland we took this request seriously and formed the organizing committee already in autumn 2009. The committee is participated by all interest bodies like universities, industry, teachers union, chemists union, administration. The coordinator of the IYC 2011 program is the Association of Finnish Chemical Societies. Finland is small country and it is easy to get all interest organizations to be actively involved and this makes the organizing of events all over the country easier than in larger countries.

The slogan of the IYC 2011 is Chemistry – our life, our future explains the importance of chemistry for modern life. During the year the aim is to address the most important challenges of mankind and what chemistry can bring to solve these problems. The topics which are discussed during the year are: clean air, safe water, healthy food, dependable medicine, sustainable energy, advanced materials and eco-friendly products. Other topics to emphasize are: encourage interest in chemistry among young people, and to generate enthusiasm for the creative future of chemistry. The year 2011 will coincide with the 100th anniversary of the Nobel Prize awarded to Madame Marie Curie—an opportunity to celebrate the contributions of women to science. The year will also be the 100th anniversary of the founding of the International Association of Chemical Societies. The Finnish specialties for the IYC 2011 are celebration the 250 years anniversary of chemistry teaching at university level in Finland and to emphasize the chemistry innovations made in Finland. There are posters and postcards available from the innovations, and the web pages of IYC 2011 (<http://www.kemia2011.fi>) present more innovations and their backgrounds.

The events of the year have been divided in four categories depending to whom they are aimed for: (i) professionals and decision makers, (ii) public, (iii) teachers and students, and (iv) journalists. Events are organized all over the country and especially in university cities where the local chemical societies and universities jointly are organizing events of different types. In the following the most important events taken place during the Spring are briefly highlighted.

Events for professionals

ChemBio exhibition and Finnish Chemical Congress held in Helsinki Exhibition and Congress Centre, March 22-24 was the main event for professionals during the year. IYC 2011 was very visible in the exhibition since the large stand of the societies and organizations taking part in organizing the chemistry year was made according to the visual appearance of IYC. The congress program contained several topics which belonged to the themes of IYC. Also the program in the exhibition plaza touched the themes of the year, the most interesting being the panel Chemistry

saves the world. About 8000 people visited the exhibition and the eight symposia in the Chemistry Congress had about 1000 participants.

A theme forum for professionals was organized by the Federation for Finnish Chemical Industry in April. The topic of that event was Young entrepreneurs on the stage. Third Helsinki Chemical Forum was organized in May in Helsinki. The program had two sessions with topics from the IYC2011 namely Sustainable chemistry – a challenge for the industry and society and Bioeconomy. About 250 participants from more than 30 countries were gathered in the Helsinki Exhibition and Congress Centre.

Events for the public

The opening of the International year of Chemistry took place in January in connection to the Science Days (Tieteen Päivät). The opening ceremony contained three lectures which were dealing with carbon dioxide as a raw material, development of pharmaceuticals and bio fuels – all themes of the IYC. The Science days had also two other sessions on chemistry, workshops during science night and a separate lecture from the life of Marie Curie. All these events gathered more than 600 people.

The main event aimed for public was held in May 12 in Helsinki on Narikkatori. There was a big tent with a main stage, 8 stands for the main sponsors and organizers, places for barbecue and soap bubble competition. The program on the stage was extensive and interesting. The speaker Fredi Lilius interviewed more than ten experts and the topics vary from bio fuels for transportation to clean water, new pharmaceuticals for Parkinson disease, fuel cells, thin coatings for silver, composites made from natural fibers etc. In addition there were very interesting and popular science shows given by Heko Montonen from Science Centre Heureka. In addition, the public could taste and compare meat grilled with gas and coal grill and take part in the soap bubble competition. The day was very successful and some 5500 people visited the place. The event received also attention in radio and TV.

Finnish Chemical Society has nine local societies in various cities – mainly in university cities. The Society has asked the local societies organize IYC actions in their areas. The Chemical Society of Northern Finland organized in April in the Tietomaa science centre an event titled as miracles of every day where the chemists made spectacular experiments. The event got a lot of attention not only because one of the performing chemists was reactor Lauri Lajunen from University of Oulu. The number of people visited Tietomaa on that day exceeded 1000.

SciFest is an annual event organized in Joensuu. It is aimed for young people and presents science in a popular way. This year chemistry was emphasized in the program. It contained lectures, demonstrations and workshops organized by University of Eastern Finland and the Chemical Society of Eastern Finland. So far SciFest has been the largest event under the umbrella of IYC2011

Markku Leskelä, chair of the IYC committee in Finland

since close to 10 000 students, school children and their teachers visited the Joensuu science park and Arena.

The local chemical societies in Turku and Jyväskylä had their activities in April. In Turku the event was called children's university and it contained workshops and demonstrative experiments. In Jyväskylä the event was organized in Kallioplanetaario and the program contained chemistry of stars, wonders of the space, workshops on chemistry. Lahti organized in May 15 and public event on the lakeside close to Sibelius house called Marketplace for possibilities. IYC was very visible in the event and received attention in the local newspapers. All these local activities were very successful and collected hundreds of visitors. Discussions have been started to repeat the events later.

The chemical society in Pirkanmaa has been active in Tampere and organized during the Spring already three studia generalia lectures on the topics of IYC2011 all gathering 50-100 listeners.

Teachers and school children

Teachers, students and school children form an important target group for IYC2011 since one of the main aims of the year is to encourage interest in chemistry among young people. The schools got information from the IYC from many sources. They received a special journal made by Kemia-Kemi journal on the IYC and posters. The teaching in the schools has received special support from the national LUMA Centre (LU stands for 'luonnontieteet', natural science and MA for mathematics) and Gadolin chemistry class.

The science teachers' association MAOL organizes twice a year teachers days and this year chemistry is the main theme in the program. The Chemical Congress in March had a separate session for chemical education. The session continued next day at University of Helsinki where the national LUMA Centre organized workshops. In total about 200 teachers participated in the chemical education session.

IUPAC organized an IYC Global Experiment which is an activity that unites students around the globe to participate in activities that highlight the role that chemistry plays in issues of water quality and purification. Primary school to high school students are invited to explore one of the Earth's most critical resources, water. The students report their findings on water quality and water treatment on the website, allowing them to compare results and connect with other students around the world. The global experiment currently includes four planned activities designed to cover intriguing chemical concepts with the use of minimal required equipment and resources. Teachers work with their classrooms to complete the four activities, giving students an overview of a variety of concepts including acidity, salinity, filtration, and solar still water purification. During the Spring 15 Finnish schools have reported their results in the website.

The science centre Heureka gathers constantly thousands of school children. There they have activities where the children themselves can do experiments and experience the excitement of

science. This Spring Heureka has organized several workshops on chemistry where it has been possible to study for example water, acids and bases, gases and gas mixtures. About 6500 students have participated in these workshops.

Program for journalists

The visibility of the year in media is very important. The aim of the year is to inform public the importance of chemistry and the impact of chemistry for a better life. Without articles in newspapers and journals or programs in radio and TV the mission is impossible. Because of that a planning group was created for organizing special events for journalists. So far four events have taken place and journalists are informed from the topics of the year. Four events have so far been taken place. The first event was a science bus ride from Otaniemi to Viikki via Meilahti and Kumpula campus and during the trip experts told about topics important for the Year. In February the journalists were invited to Chemistry Department in Kumpula to listen to lectures on new achievements in chemistry and have a lab tour. In May there was a full day excursion to Kilpilahti and the theme of the day was Alternative fuels for transportation. The event held in June was directed to womens' magazines and it contained themes from food to health care products. The four events have caught about 70 journalists.

Events during the summer

Celebrations of the International year of Chemistry continue actively during the summer. The stand of the year is present in several big public events in different cities. The first occasion is Suomi Areena which organized by MTV3 in connection to Pori Jazz Festival in Pori July 11-15. The second one is Meripäivät in Kotka in July 28-31. In the Merikeskus Vellamo and the Baltic Sea village (Itämerikylä) next to it will be program which concentrates on Baltic Sea - its ecology, chemistry and how to protect the Sea. The Tampere Theatre Festival is arranged at the beginning of August and The Great Nocturnal Happening is on August 4. The Great Nocturnal Happening is a carnival-like cultural happening, which fills the city with a variety of performances, art experiences and people. Chemistry and different experiments will be presented in that Happening. Kokkola Housing Fair 2011 is taking place from mid July to mid August. On August 11 the local chemists are in the Fair and present chemistry and the themes of IYC2011 to the public.

Conclusions

The International Year of Chemistry has been celebrated in Finland very visibly and with great enthusiasm. Events have been organized for different audience and in different cities. All this has been possible because of the broad group of organizations in the organizing committee and because it has been economically possible. The Year has been economically supported by several companies, organizations, foundations and the Finnish Chemical Society. Rough calculations show

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that the message of IYC2011 has been so far distributed to about 25 000 people. One sign of the success is that at many places there are plans to repeat the events in some form maybe next year.

There are not yet statistics available how much activities the IYC2011 has had all over the world. The first news from some countries tell however that taken in account the small size of Finland we have been very active and the number of events is high. This tells something about Finns and the importance of chemistry in Finland. The year is not over and many exciting events are to be expected in the fall. Information can be found most conveniently from the web-page:

<http://www.kemia2011.fi>.