In Germany, 2003 was the official Year of Chemistry. The events of the Year of Chemistry comprised a colorful blend of major, central events and a large number of local events all over the country, which were organized and carried out by many committed men and women in chemistry. At the end of these 365 exciting days devoted to chemistry, everyone involved was very satisfied.

Many people became enthralled by this up-to-the minute, fascinating, and relevant science. Visitors, many of them children and young people, experienced the greatest “Eureka” moments when they saw things that related to their own lives and the world around them. According to information from the Federal Ministry for Education and Research, and from Holger Bengs, who acted as coordinator of the Year of Chemistry on behalf of the Gesellschaft Deutscher Chemiker (GDCh, German Chemical Society), well over one million visitors attended more than 2000 individual events, which were held all over Germany.

The Objectives and Involvement of Many Minds and Hands

As the German federal government sees it, the purpose of science years is to promote a dialogue between scientists and an interested lay public; and naturally in a country like Germany—whose greatest resource is its brainpower—another aim is to generate interest in science and technology. The Year of Chemistry was by now the fourth in the series of science years and so, in many ways, it was possible to draw on the experience of previous years. Nevertheless, it is important to note that chemistry is one of the most important factors in the German economy. In preparing for the Year of Chemistry, everyone involved held to the following principles:

- Chemistry is the fascinating science of molecules, their reactions, properties, and effects.
- Chemistry is a basic scientific discipline of great importance to research and development.
- Chemistry and its products are present in every aspect of daily life.
- The chemical industry is one of the most important in Germany and is a major employer of qualified staff.

From the Idea to the Launch in January 2003

It was in 1999 that the Stifterverband für die Deutsche Wissenschaft (Association of Donors for the Promotion of the Sciences and Humanities in Germany), and major science organizations, decided to launch the “PUSH” initiative (Public Understanding of Science and the Humanities), as a result of which the Federal Ministry for Education and Research and the German Physical Society declared the year 2000 to be the Year of Physics. The campaign lasted all year and was conducted in consultation with the initiative Wissenschaft im Dialog (Science in Dialog), a forum of the leading German science organizations.

The idea of “science years” earned much respect and was extended to the Year of Life Sciences (2001) and the Year of Earth Sciences (2002).

By a happy coincidence, the publicity campaign for the Year of Chemistry overlapped with the 200th anniversary of the birth of the most famous and influential chemist of the 19th century, Justus Liebig. Through his work on the development of analytical methods and new laboratory equipment, and his pioneering research in the field of artificial fertilizers and plant cultivation, but perhaps most of all through his famous meat-extract, the name of Justus Liebig became known all over the world. The Gesellschaft Deutscher Chemiker took this opportunity to propose to the Federal Ministry for Education and Research, that they should jointly celebrate the year 2003 as The Year of Chemistry. So it was that the 12-month project, combining the Liebig jubilee with the Year of Chemistry, was launched to great media acclaim, with a fireworks display at the Brandenburg Gate on 1 January 2003.

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Under the leadership of the Gesellschaft Deutscher Chemiker, all other important chemical organizations, both in science and industry, took part in the planning and implementation of this project. Those involved included other chemical learned societies such as the Deutsche Bunsengesellschaft für Physikalische Chemie (German Bunsen Society for Physical Chemistry); DECHEMA (Society for Chemical Engineering and Biotechnology), the chemical industry association with around 1600 member companies; the employers’ federation; and the union for the chemical industry.

Event Formats and Examples

The Year of Chemistry featured numerous “experiment afternoons” that attracted and amazed participants. It was particularly the events where children and young people took part, whether as spectators or experimenters, which conveyed an atmosphere of excitement, and stimulated an appetite for more, but most of all tempted people to join in the experiments. The events included experiment shows, lectures, exhibitions, and discussions. A totally new and, for chemistry, unusually inspiring form of access, was provided by painting and drawing competitions for toddlers and school children. There was also a puppet show for children, sponsored by the Justus Liebig bicentennial, as well as the “Kekulé’s Dream” dance theater.

The Campaign: Year of Chemistry 2003

The flagship of the Year of Chemistry campaign was a tripartite exhibition devoted to three important themes: “man,” “matter,” and “future and resources.” The Kiss: Magic and Chemistry was the name of the exhibition used to illustrate the first theme. By focusing on the chemistry of the human body, the exhibition provided a valuable symbol for the whole year. The Kiss: Magic and Chemistry not only attracted a lot of attention from teenagers, by explaining the biochemical processes that take place when they fall in love and kiss, but it was also a draw for adults. Minister for Education and Research Edelgard Bulmahn, opened a press conference with the remark: “Kissing makes you slim. So now I know why I’m so slim.” The exhibition also featured the chemistry of nutrition and health.

The two other exhibitions were devoted to chemistry in everyday life, today and in the future: The Material: Matter and Chemistry and The Source: Energy and Chemistry. The novelty of this concept was that for the first time in a science year, each of these exhibitions were shown in three major cities and thus travelled around virtually the whole Federal Republic. In each venue the exhibitions were chiefly manned by scientists and students from the local university, which also augmented the exhibition with experiments from its laboratories.

Great fun was also had in Justus, a 54-foot long “chemistry truck” fitted with small laboratories, which visited a total of 115 town centers and school playgrounds. In the truck, a total of 60 000 children, equipped with white coats and protective goggles, were able to have hands-on experience conducting simple experiments. Reactions producing changes in color were just as popular as the chromatographic resolution of the dyes in toy rubber bears.

The Summer of Science

In 2003, the Summer of Science, a festival held every year as part of the Science in Dialogue initiative, took place over one week in Mainz, the capital of the state of Rhineland-Palatinate. The idea is that everything—well, almost everything—in the chosen city should revolve around science. During the festival, laboratories and institutes open their doors to the public in a Long Night of the Sciences, exhibitions show the interfaces between art and science, and in symposia, talk-shows and cultural events, such as a chemistry-oriented film festival, current issues and research-findings are presented and discussed. Scientific researchers go out into the streets and into market squares to engage visitors in discussion. In this way they find out through dialogue what it is that concerns people about modern research and technology. Junior laboratories and interactive exhibitions for children and young people bring out the chemist and the inventor in each of them. The attractions even
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included a 490-foot long motor boat, the Chemie (Chemistry), which spent three months visiting a total of 26 towns and cities. Over 40 000 visitors experienced this interactive exhibition.

Activities of the Gesellschaft Deutscher Chemiker (GDCh)

The GDCh was not only responsible for overall coordination of the Year of Chemistry, but with its 27 000 members it also played an active part in many of the events. Through its more than 60 local sections and 24 divisions and its 39 Young Chemist forums—which attracted some 5000 students and other young members—the GDCh attracted attention to itself and to chemistry. Particular success can be ascribed to all those events in which the regular colloquia of the GDCh were devoted to subjects of broad public interest and were held in unusual locations. For example, lectures on chemistry were warmly received in town halls, museums and old castles, and even in the open air. The really good thing about this was that, by stepping out from the lecture hall into unusual and, for many of them, unfamiliar surroundings, the chemists reached the lay public who would otherwise be hard to lure into university institutes.

Another special event was the Week of Chemistry, which was held in October in parallel with the annual conference of the Gesellschaft Deutscher Chemiker in Munich. There was particular interest here in the lecture by the Paris-based author and expert in "molecular gastronomy," This-Benckhard, who revealed to an amazed audience of several hundred just how much chemistry and physics are to be found in a single hen's egg.

Other Highlights

Other highlights of the Year of Chemistry included the nationwide Open-Door Day in chemistry. More than 200 chemical companies and nearly 50 research establishments and other chemistry-related establishments attracted over 400 000 visitors. This was a larger number than attended, in the same period, all the soccer matches in the nine stadiums of the Federal League (Bundesliga). Nor should we omit to mention the education summit in which the Gesellschaft Deutscher Chemiker played a leading part. Here, new concepts and methodology for the teaching of sciences were presented to the public. The basis for the discussions about tomorrow's chemistry teaching had been previously developed by numerous experts in workshops held up and down the country. The birthday of Justus Liebig was celebrated in Giessen in May. Its climax was the formal inclusion of Liebig's original laboratory, now the Liebig Museum, in the GDCh's Historical Chemical Landmark program. Altogether, the Liebig bicentennial was an event that received international acclaim.

Summing Up

It would be premature to try at this stage to assess what long-term success has been achieved, though the extremely high level of commitment by all concerned, in raising the profile of the science and achieving a better understanding of how chemistry connects with other sciences and with the world in general. It would surely also be wrong to claim that we got everything right. But without false modesty we can state with certainty that all the effort has been great fun—especially when people asked us questions and children's eyes sparkled—and, above all, we have all learned a great deal as well. In science we are all experts in our own field. When it comes to making our own research comprehensible to others, we can still learn a lot, especially about how to overcome inner barriers and dismantle obstacles. In this way the dealings we have with the public, still often uncertain, can be steadily improved to the benefit of all.

The Year of Chemistry, in conjunction with Justus Liebig's bicentennial, was an extremely good opportunity to do this and has been a thoroughly encouraging start. All of us who took part want to build on what we have learned about the marketing of our own science and take it forward beyond the end of the Year of Chemistry. There are many opportunities to maintain our commitment at the same high level. In January of this year, Germany ushered in its fifth year of science—the Year of Technology. And technology, like chemistry, is a very inter-disciplinary area of activity. In 2004, too, members of the Gesellschaft Deutscher Chemiker will again be actively involved, whenever it is a matter of seeking a dialogue with ordinary people, away from the laboratories.

Dr Holger Bengs was coordinator for the Year of Chemistry. Prof. Dr Wolfram Koch <W.Koch@gdch.de> is executive director of the Gesellschaft Deutscher Chemiker.

www.year-of-chemistry.de