

# 36th IUPAC Congress

17–22 August 1997, Geneva, Switzerland

The 36th IUPAC Congress was a success by many measures. Attendance was 1251 from 59 countries; there were more than 900 presentations: 9 plenary, 40 keynote, 40 invited, 30 short contributions and 832 posters; one-third of the participants were under 30 years old. Fifty-six countries were represented among the poster presenters. The following table indicates the international character of both the participants and the presentations at this Congress.

The nineteen countries in this table represent all those countries that had ten or more participants, 88% of the total. These nineteen countries also had 83% of the posters. All of the major geographic areas of the world are well represented except sub-Saharan Africa.

This Congress is the first to be guided to a great extent by the report of Prof. G. Modena and Prof. J. Jortner, presented to the 65th Bureau, 17–18 September 1994. This report proposed that IUPAC should act to make the IUPAC Congress a central international event by fulfilling the following goals:

| Country     | Number of Participants | Number of Posters |
|-------------|------------------------|-------------------|
| Switzerland | 502                    | 201               |
| Turkey      | 58                     | 85                |
| Japan       | 79                     | 57                |
| Russia      | 25                     | 40                |
| Poland      | 32                     | 37                |
| Germany     | 96                     | 34                |
| Egypt       | 19                     | 30                |
| China       | 21                     | 29                |
| Taiwan      | 29                     | 26                |
| USA         | 58                     | 25                |
| Macedonia   | 15                     | 24                |
| Iran        | 21                     | 23                |
| France      | 41                     | 21                |
| Canada      | 17                     | 14                |
| UK          | 29                     | 13                |
| Ukraine     | 10                     | 13                |
| Italy       | 20                     | 8                 |
| Netherlands | 16                     | 8                 |
| Israel      | 13                     | 5                 |
| Totals      | 1101                   | 693               |

**Prof. Jacques Weber opens the Congress**

- 1 To present the most outstanding relevant developments in modern chemistry
- 2 To inspire high standards of excellence in pure and applied chemistry research
- 3 To attract outstanding scientists to present central lectures on modern chemical research
- 4 To inspire the young generation of chemists in developed and developing countries

While the time from the adoption of these principles to the organization of the 36th Congress was too short for full implementation, this Congress fulfilled in large part the aim of the report to improve the quality and impact of IUPAC Congresses. In particular the large participation by younger chemists, the broad international character of both the attendees and the presentations, and the emphasis on topics at the *Frontiers of Chemistry*, are all in the spirit of the proposals for the revitalization of the IUPAC Congresses made by Profs Modena and Jortner.

The opening Plenary lecture by Prof. Peter Schultz of the University of California, Berkeley, set the tone by demonstrating that chemistry is at the heart of advances in modern biology and materials science. This lecture also gave a vivid demonstration of ways in which understanding gained in one area can be applied to what may seem a quite unrelated subject. In this case, Prof. Schultz showed that the attempt to understand how the human antibody system solves the problem of recognizing an essentially infinite number of possible antigens led to new insights in the development of catalysts and materials.

**Prof. Peter Schultz**

The Plenary lecture by Prof. Paul J. Crutzen of the Max Planck Institute for Chemistry, Mainz, moved the discussion from the chemistry of the inside of the human body to the effects of human activity on global climate. His review showed the major consequences for global climate and the inhabitants of the earth, of the complex interactions of simple molecules and ions at relatively low concentrations. Prof. Crutzen also described new and unexpected interactions of human activities and the chemistry of the atmosphere.

**Prof. Paul J. Crutzen**

The 3rd Plenary lecture, by Prof. Richard N. Zare of Stanford University, moved back from the examination of chemistry at the global scale to the investigation of single molecules. This lecture demonstrated the combination of a technique from the frontiers of physical chemistry, femtosecond laser spectroscopy, with vesicles conceptually related to the 'containers' used by biological systems to isolate and transport molecules, to isolate and examine individual molecules.

**Prof. Richard N. Zare**

The 4th Plenary lecture by Prof. J. Nüesch, President of the ETH-Zürich, addressed the issue of ethics and sustainability in chemistry. As had been pointed out by Prof. Crutzen, human activities can have a significant effect on the global ecosystem. Prof. Nüesch discussed the ethical demands in chemistry, which he described as being especially important because of the ability of

**Prof. J. Nüesch**

chemical technology to affect humanity for both good and ill. This can lead to the common ethical dilemma of our time, the need to balance the improvement of living standards through the application of technology while at the same time considering the possible effects of that technology on the global environment.

Prof. Dieter Seebach of the ETH-Zürich reviewed the changing focus of classical organic synthesis into areas related to molecules of biological interest. His theme was the continuity of the science as it moves to new frontiers. He reminded his audience that while the focus may change, the underlying nature of the synthetic enterprise remains the same, namely the development of synthetic techniques that allow control of the chemistry leading to new kinds of molecular structures.

**Prof. Dieter Seebach**

Prof. Olivier Kahn reviewed the field of molecular magnetism, a field that combines aspects of organic, inorganic, organometallic, and physical chemistry as well as materials science. His review introduced the concept of the magnetic brick, a building block which can be used to construct new one-, two- and three-dimensional species. This lecture again demonstrated the application of the classical concepts of chemistry leading to developments at the frontiers of traditional discipline boundaries.

**Prof. Olivier Kahn**

Prof. Gerhard Ertl of the Fritz-Haber Institute of the Max-Planck Gesellschaft in Berlin reviewed new surface analytical techniques that have led to an understanding of processes at a microscopic scale. In particular, those microscopic level processes that control processes at a macroscopic level. His review connected new understanding of the interactions of simple molecules at metal surfaces with the large-scale processes occurring in industrial heterogeneous catalysis.

**Prof. Gerhard Ertl**

Prof. Gilbert Balavoine of the Laboratoire de Chimie de Coordination, CNRS, Toulouse discussed the major rôle played by chemistry in society—a rôle that is not matched by an understanding on the part of society of the use of the technology developed by the chemical sciences. This lecture returned to the theme of the earlier lectures by Profs Crutzen and Nüesch regarding the ethical and social implications of the applications of chemical technology.

**Prof. Gilbert Balavoine**

The final Plenary Lecture by Prof. C. Weissmann of the University Zürich discussed a particular application of chemistry at the frontiers of molecular biology. A prion is believed to cause both scrapie in sheep and bovine spongiform encephalopathy (BSE). The investigation of the transmission and propagation of this prion demonstrated the use of chemical knowledge,

developed over the past decades, to investigate a problem that is usually viewed as a biological problem. (The award of the Nobel Prize for Medicine to Prof. Stanley B. Prusiner for the discovery of prions demonstrates the timeliness of this topic.)

It is impossible to discuss here the dozens of other keynote and invited lectures at the Congress, much less the hundreds of posters. The organizers of the

Congress, Prof. J. Weber, Prof. F. Diederich and Prof. A. von Zelewsky, are to be congratulated on assembling a group of Plenary Lecturers who provided such an exciting and informative overview of the future of the chemical sciences.

I would like to acknowledge the fine photographs by Karin Hedinger.

**John W. Jost**  
**Executive Director**