



v.l.n.r. H. Hilpert, S. Gokhale, F. Roessler, W. Göhring, P. Vogt, M. Schlageter

Aus dem Bereich der Chemischen Verfahrensentwicklung:

– Dr. Wolfgang Göhring.

Die primäre Aufgabe der Verfahrensforschung, nämlich die zeitgerechte Entwicklung der Synthese neuer, strukturell komplexer Wirk-

stoffe in chemischer, technischer, ökologischer und ökonomischer Hinsicht wird an diesem Beispiel (das zusammenfassend in der Jubiläumsausgabe '100 Jahre Roche' in *CHIMIA* [1] publiziert wurde) besonders deutlich. Das Team schaff-

te es, durch die Anwendung moderner Reaktionen und Techniken, die ursprünglich 26 Reaktionsschritte umfassende Synthese des Wirkstoffes stufenweise auf 11 Schritte zu reduzieren und gleichzeitig die Gesamtausbeute von etwa 10 auf 50% zu steigern. Diese für die Markteinführung der neuen Wirksubstanz zentrale Leistung lässt sich auch daran ermessen, dass skeptische Pressestimmen noch 1993 die Ansicht verbreiteten:

... 'Es wird sogar bezweifelt, ob Roche oder irgend jemand in der Lage wäre, genügende Mengen der Substanz herzustellen – falls sie denn je als Heilmittel zum Einsatz käme' [2].

Durch die enge Zusammenarbeit der Verfahrensforschung mit den Spezialisten aus Kilolabor, Verfahrensentwicklung, Hydrierlabor und Produktion konnte ein entscheidender

Anteil an der Verkürzung der gesamten Entwicklungsdauer geleistet werden. Damit war es Roche möglich, dieses neuartige und hochwirksame Medikament, das von Roche-Chemikern in England zum ersten Mal synthetisiert wurde, bereits sechs Jahre nach dessen Entdeckung den AIDS-Patienten zur Verfügung zu stellen.

Die innovativen Beiträge der Preisträger belegen zudem unzweifelhaft die Tatsache, dass sich die Chemische Verfahrensforschung von der 'Kunst des Hochkochens' zu einer attraktiven und dynamischen Schlüssel-funktion für die zeitgerechte Bereitstellung neuer, hochkomplexer Pharmawirkstoffe entwickelt hat.

[1] *Chimia* 1996, 50, 532.

[2] Zitat aus einem Pressebericht zur Berliner AIDS-Konferenz 1993, Basler Zeitung, Nr. 137 vom 16. Juni 1993.

## INFORMATION

### FECS Federation of European Chemical Societies

#### Annual Report 1996

##### A Powerful Voice for Chemists and Chemistry

The new constitution, confirming the integration of ECCC (European Communities Chemistry Council) and FECS, creates an organisation that will act as a powerful voice for chemists and chemistry in Europe. The organisation has significant resources to call upon, its member societies in total representing some 200 000 individual chemists in academia, industry and government across Europe.

The General Assembly met on 19–20 September in Athens, Greece, as the guests of the Association of Greek Chemists and 22 delegates attended. The Council met twice, on 25 March in Brussels, Belgium, and on 19 September in Athens, Greece.

The 1996 FECS Lecture was given in September by Professor W. Wiegrebe, University of Regensburg at the Congress of Biochemistry and Bioorganic Chemistry in Olomouc, Czech Republic. The Award for Service to FECS was presented to Prof. F. Szabadvary, Hungary, a former Chairman of the Working Party on the History of Chemistry. FECS sponsored seven high-level scientific conferences.

At the end of 1996 the membership of FECS had increased to 41

member societies from 32 different countries, the Ukrainian Chemical Society having been elected as a new member. A new European magazine will be made available to members of the national chemical societies.

The General Members of the newly created FECS Executive Committee are: Prof. L. Niinisto (President), Dr. P.B. Czedik-Eysenberg, Prof. J.-B. Donnet, Dr. T.D. Inch, Prof. N. Lyakhov, Prof. G. Naray-Szabo, Prof. Rodriguez Renuncio, Dr. B. Stanovnik, Prof. H. tom Dieck.

The scientific work of FECS is carried out through its Divisions (Analytical Chemistry, Food Chemistry, Chemical Education) and Working Parties, summary reports from which are shown. The EU-CHEM Committee, operating within FECS, organises high-level conferences and advises the European Science Foundation on its chemistry conferences. The ECCC oversees professional affairs and EU research and education issues, e.g. the award of 'European Chemist'.

##### AllChemE

The AllChemE report 'Chemistry: Europe and the future' was published and disseminated widely within industry, academia and govern-

ments, both national and European. Subtitled 'Science and technology to improve the quality of life in Europe', it aims to influence the future strategies of the European Commission and national bodies. It illustrates research activity in health and agriculture, new materials, energy and protection of the environment, likely to lead to inventions of high significance.

##### Analytical Chemistry

Euroanalysis IX was held in Bologna in September with 700 participants. Preliminary arrangements were made for the conference 'In vino analytica scientia', to be held in Bordeaux in June 1997.

Following development of the Eurocurriculum in Analytical Chemistry a 'Textbook on Analytical Chemistry' was completed for publication in 1997. Eurocourses on Molecular Sensor Technology, Chemometrics and IR- and Raman-Spectroscopy were held.

Progress was made on a history of the working party on analytical chemistry. An action programme to take forward issues concerning quality assurance and accreditation was approved.

##### Chemistry and the Environment

The papers from the 'Fifth European Conference on Chemistry and Environment', held in May 1995 in Budapest, were published in 'Agriculture of Pesticides, Food Contaminants, and Agricultural Wastes', Part B of *Journal of Environmental*

*Science and Health*, volume B31, number 3, 1996.

Efforts are being made to develop links with the European Commission in connection with regulatory activities and policy issues.

##### Computational Chemistry

Preliminary arrangements were made for the 'Second European Conference on Computational Chemistry' – EUCO-CC2 – to be held in Lisbon, Portugal in September 1997.

##### Chemical Education

The proceedings of the '3rd European Conference on Research in Chemical Education' (ECRICE), held in September 1995 in Lublin, were published. Arrangements have been made for the 4th ECRICE to be held in York on 9–12 September 1997.

A collection of papers showing excellence in chemical education research in Europe will be published as a special edition of the *International Journal for Science Education*.

A link with the Core Chemistry group of the 'European Chemistry Thematic Network' was created.

##### Organometallic Chemistry

The text of the booklet 'Organometallic Research Centres in Europe', containing information on the research fields of over 2000 organometallic chemists from 25 countries, is available on the Internet: <http://www.tw.vub.ac.be/ond/aosc/eoc/default.htm>



v.l.n.r. H. Hilpert, S. Gokhale, F. Roessler, W. Göhring, P. Vogt, M. Schlageter

Aus dem Bereich der Chemischen Verfahrensentwicklung:

– Dr. Wolfgang Göhring.

Die primäre Aufgabe der Verfahrensforschung, nämlich die zeitgerechte Entwicklung der Synthese neuer, strukturell komplexer Wirk-

stoffe in chemischer, technischer, ökologischer und ökonomischer Hinsicht wird an diesem Beispiel (das zusammenfassend in der Jubiläumsausgabe '100 Jahre Roche' in *CHIMIA* [1] publiziert wurde) besonders deutlich. Das Team schaff-

te es, durch die Anwendung moderner Reaktionen und Techniken, die ursprünglich 26 Reaktionsschritte umfassende Synthese des Wirkstoffes stufenweise auf 11 Schritte zu reduzieren und gleichzeitig die Gesamtausbeute von etwa 10 auf 50% zu steigern. Diese für die Markteinführung der neuen Wirksubstanz zentrale Leistung lässt sich auch daran ermessen, dass skeptische Pressestimmen noch 1993 die Ansicht verbreiteten:

... 'Es wird sogar bezweifelt, ob Roche oder irgend jemand in der Lage wäre, genügende Mengen der Substanz herzustellen – falls sie denn je als Heilmittel zum Einsatz käme' [2].

Durch die enge Zusammenarbeit der Verfahrensforschung mit den Spezialisten aus Kilolabor, Verfahrensentwicklung, Hydrierlabor und Produktion konnte ein entscheidender

Anteil an der Verkürzung der gesamten Entwicklungsdauer geleistet werden. Damit war es Roche möglich, dieses neuartige und hochwirksame Medikament, das von Roche-Chemikern in England zum ersten Mal synthetisiert wurde, bereits sechs Jahre nach dessen Entdeckung den AIDS-Patienten zur Verfügung zu stellen.

Die innovativen Beiträge der Preisträger belegen zudem unzweifelhaft die Tatsache, dass sich die Chemische Verfahrensforschung von der 'Kunst des Hochkochens' zu einer attraktiven und dynamischen Schlüssel-funktion für die zeitgerechte Bereitstellung neuer, hochkomplexer Pharmawirkstoffe entwickelt hat.

[1] *Chimia* 1996, 50, 532.

[2] Zitat aus einem Pressebericht zur Berliner AIDS-Konferenz 1993, Basler Zeitung, Nr. 137 vom 16. Juni 1993.

# INFORMATION

## FECS Federation of European Chemical Societies

### Annual Report 1996

#### A Powerful Voice for Chemists and Chemistry

The new constitution, confirming the integration of ECCC (European Communities Chemistry Council) and FECS, creates an organisation that will act as a powerful voice for chemists and chemistry in Europe. The organisation has significant resources to call upon, its member societies in total representing some 200 000 individual chemists in academia, industry and government across Europe.

The General Assembly met on 19–20 September in Athens, Greece, as the guests of the Association of Greek Chemists and 22 delegates attended. The Council met twice, on 25 March in Brussels, Belgium, and on 19 September in Athens, Greece.

The 1996 FECS Lecture was given in September by Professor W. Wiegrebe, University of Regensburg at the Congress of Biochemistry and Bioorganic Chemistry in Olomouc, Czech Republic. The Award for Service to FECS was presented to Prof. F. Szabadvary, Hungary, a former Chairman of the Working Party on the History of Chemistry. FECS sponsored seven high-level scientific conferences.

At the end of 1996 the membership of FECS had increased to 41

member societies from 32 different countries, the Ukrainian Chemical Society having been elected as a new member. A new European magazine will be made available to members of the national chemical societies.

The General Members of the newly created FECS Executive Committee are: Prof. L. Niinisto (President), Dr. P.B. Czedik-Eysenberg, Prof. J.-B. Donnet, Dr. T.D. Inch, Prof. N. Lyakhov, Prof. G. Naray-Szabo, Prof. Rodriguez Renuncio, Dr. B. Stanovnik, Prof. H. tom Dieck.

The scientific work of FECS is carried out through its Divisions (Analytical Chemistry, Food Chemistry, Chemical Education) and Working Parties, summary reports from which are shown. The EU-CHEM Committee, operating within FECS, organises high-level conferences and advises the European Science Foundation on its chemistry conferences. The ECCC oversees professional affairs and EU research and education issues, e.g. the award of 'European Chemist'.

#### AllChemE

The AllChemE report 'Chemistry: Europe and the future' was published and disseminated widely within industry, academia and govern-

ments, both national and European. Subtitled 'Science and technology to improve the quality of life in Europe', it aims to influence the future strategies of the European Commission and national bodies. It illustrates research activity in health and agriculture, new materials, energy and protection of the environment, likely to lead to inventions of high significance.

#### Analytical Chemistry

Euroanalysis IX was held in Bologna in September with 700 participants. Preliminary arrangements were made for the conference 'In vino analytica scientia', to be held in Bordeaux in June 1997.

Following development of the Eurocurriculum in Analytical Chemistry a 'Textbook on Analytical Chemistry' was completed for publication in 1997. Eurocourses on Molecular Sensor Technology, Chemometrics and IR- and Raman-Spectroscopy were held.

Progress was made on a history of the working party on analytical chemistry. An action programme to take forward issues concerning quality assurance and accreditation was approved.

#### Chemistry and the Environment

The papers from the 'Fifth European Conference on Chemistry and Environment', held in May 1995 in Budapest, were published in 'Agriculture of Pesticides, Food Contaminants, and Agricultural Wastes', Part B of *Journal of Environmental*

*Science and Health*, volume B31, number 3, 1996.

Efforts are being made to develop links with the European Commission in connection with regulatory activities and policy issues.

#### Computational Chemistry

Preliminary arrangements were made for the 'Second European Conference on Computational Chemistry' – EUCO-CC2 – to be held in Lisbon, Portugal in September 1997.

#### Chemical Education

The proceedings of the '3rd European Conference on Research in Chemical Education' (ECRICE), held in September 1995 in Lublin, were published. Arrangements have been made for the 4th ECRICE to be held in York on 9–12 September 1997.

A collection of papers showing excellence in chemical education research in Europe will be published as a special edition of the *International Journal for Science Education*.

A link with the Core Chemistry group of the 'European Chemistry Thematic Network' was created.

#### Organometallic Chemistry

The text of the booklet 'Organometallic Research Centres in Europe', containing information on the research fields of over 2000 organometallic chemists from 25 countries, is available on the Internet: <http://www.tw.vub.ac.be/ond/aosc/eoc/default.htm>

Preliminary arrangements were made for the 'XIIth FECEM Conference on Organometallic Chemistry' to be held in Prague on 31 August-5 September 1997.

#### History of Chemistry

A 'Guide of European Museums with Collections on History of Chemistry' was published, giving information on 127 museums. An exhibition on '100 years of radioactivity' was organised at the University of Leiden. Data on the 50th, 100th and 150th anniversaries of key chemical historical events were published. Arrangements were made for the '20th International Congress of History of Science' to be held in Liege on 20-26 July 1997.

#### Food Chemistry

The 'Eurocurriculum in Food Chemistry' was published in *Zeitschrift für Lebensmittel Untersuchung und Forschung*. The first edition of 'Who is Who in Food Chemistry Europe', with 1000 entries, was published by Springer.

The conference 'EuroResidue III' was held in May in Veldhoven with 400 participants. As a first joint activity, a symposium was held during the AOAC International Annual

Meeting in September in Orlando. A conference on 'Quality Assurance in Food Laboratories' was held in September in Lisbon, with more than 70 scientists, administrators and assessors participating. A conference 'Chemical Reactions in Food III' was held in September in Prague with 120 participants from 19 countries.

A position paper was submitted to the European Commission in connection with Framework Programme V.

#### Chemistry in the Conservation of the Cultural Heritage

A databank on Conservation Treatments of the Cultural Heritage in the fields of 'Metals', 'Paintings' and 'Stones' is being compiled. Plans were made for the forms for collecting the data to be given wider publicity.

#### Electrochemistry

A symposium 'Education in Electrochemistry' was held in cooperation with the International Society of Electrochemistry during the 47th ISE meeting in Balatonfured in September 1996. The development of a Eurocurriculum on electrochemistry was considered.

*S. Page* (USA): Fruit Juice Falsifications  
*J. Prodolliet* (CH): Application of Carbohydrate Chromatography to Detect Food Adulterations  
*M. Lees* (F): Food Authentication: A Testing Challenge for the Analytical Chemist  
*F. Lambein* (B): Chemotaxonomy Based on Non-Protein Amino Acids Applied to Questions of Authenticity of Food

#### Last Minute Posters: an opportunity to present your latest results (from any field of food chemistry)!

Last minute posters will be accepted until 31 July 1997; if submitted in the proper form, they will even be included in the Conference Proceedings. Ask for the programme and registration form for detailed instructions (acceptance depends on scientific merit and on payment of the registration fees).

#### To receive the programme and registration form, please contact:

Dr. *Reto Battaglia*, Migros Laboratories, P.O. Box 266, CH-8031 Zürich.  
 Phone +41 1 277 31 40, Fax +41 1 277 31 70  
 E-Mail: [Reto.Battaglia@mgb.migros.inet.ch](mailto:Reto.Battaglia@mgb.migros.inet.ch)

or

Prof. Dr. *Renato Amadò*, Institut für Lebensmittelwissenschaft ETHZ  
 ETH-Zentrum, CH-8092 Zürich  
 Phone +41 1 632 32 91, Fax +41 1 632 11 23

#### 17. Regio-Symposium über Organische und Bioorganische Chemie

24.-26. September 1997 in Sornetan (Berner Jura)

Veranstaltet von den Universitäten Basel, Freiburg i.Br. und Mulhouse für Doktoranden, Postdoktoranden und Mitarbeiter der chemischen Institute und für Chemiker aus der Industrie des Regio-Gebietes.

#### Information:

Frau *Mambelli Johnson*, Institut für Organische Chemie, Universität Basel, St. Johannis-Ring 19, CH-4056 Basel.

#### Paul Scherrer Institut

#### 13. PSI-Tagessymposium Elektrochemische Energiespeicherung

Auditorium WHGA/001, PSI-West, Villigen  
 2. Juli 1997, 10.30-16.15 Uhr

#### Thema: Batterien und Brennstoffzellen für Elektrofahrzeuge

Für die Verbesserung der Luftqualität in Grossstadt-Agglomerationen gewinnt das abgasfreie Elektromobil an Bedeutung. Eine Schlüsseltechnologie zur Verwirklichung von Elektrofahrzeugen ist die elektrochemische Energiespeicherung und -umwandlung. An diesem Tagessymposium sollen einige der aussichtsreichsten Systeme präsentiert und diskutiert werden.

#### Programm

10.30-10.35 Uhr	Begrüssung Prof. A. <i>Wokaun</i> , PSI
10.35-11.00 Uhr	Batterien- und Brennstoffzellen-Forschung am PSI Dr. O. <i>Haas</i> , PSI
11.00-11.35 Uhr	Membran-Brennstoffzellen für die Elektrotraktion Dr. P. <i>Urban</i> , Daimler-Benz AG, Ulm
11.35-11.45 Uhr	Diskussion
11.45-12.10 Uhr	Kaffeepause
12.10-12.45 Uhr	Lithium-Ionentransfer-Batterie Dr. H.H. <i>Schönfelder</i> , VARTA Batterie AG, Kelkheim
12.45-12.55 Uhr	Diskussion
13.00-14.10 Uhr	Mittagessen im Personalrestaurant Oase
14.15-14.50 Uhr	Die ZEBRA-Batterie, Hochenergiebatterie für Elektrostrassenfahrzeuge Dr. H. <i>Böhm</i> , AEG Anglo Batteries GmbH, Ulm
14.50-15.00 Uhr	Diskussion
15.00-15.25 Uhr	Kaffeepause
15.25-16.00 Uhr	Zink/Luft-Batterie, Feldversuch der Deutschen Post Dipl.-Ing. R. <i>Nast</i> , TÜV Automotive GmbH, Garching
16.00-16.10 Uhr	Diskussion
16.10-16.15 Uhr	Schlussbemerkungen

Anmeldung erbeten bei: Frau U. *Grütter*, Tel. +41 56 310 29 19

#### Tagungen, Veranstaltungen, Weiterbildung

#### Workshop on 'Modern Organofluorine Chemistry'

Workshop on 'Modern Organofluorine Chemistry' (class course, lectures, laboratory demonstrations), Lausanne, 7-10 September 1997.

For further information and registration contact:

Prof. Dr. *Manfred Schlosser*  
 Section de Chimie (BCh)  
 Université de Lausanne  
 CH-1015 Lausanne

#### Euro Food Chem IX: Conference on Authenticity and Adulteration of Food - the Analytical Approach

September 24-26, 1997, Interlaken, Switzerland

Proof of authenticity and prevention of fraud of a whole range of foods are very important topics in food chemistry. This is your area of activity: food chemists active in compositional research, in food law enforcement, compliance work, quality control or in the research and development of analytical methodology.

#### Invited lectures:

*M.C. Walsh* (IRL): Legal Aspects of Authenticity and Falsification  
*I. Lumley* (UK): Methods to Prove Falsification and Authenticity in Meat and Meat Products  
*P. Resmini* (I): Authenticity and Falsification in Milk and Dairy Products  
*A. Mosandl* (D): Analytical Authentication of Genuine Flavours and Spices