



## EDITORIAL

The major part of this issue is devoted to the successful ICFE'4, conference and to ERES 4<sup>th</sup> general council, which were held in Madrid in September. The first senior LeCoq de Boisbaudran and ERES Junior awards have been granted to Drs Paul Caro (France) and Koen Binnemans (Belgium).

## PROCEEDINGS, 22<sup>nd</sup> RERC

The proceedings of the 22<sup>nd</sup> Rare Earth Research Conference held at Argonne National Laboratory, July 11-15, 1999 have appeared in May under the form of one bound volume representing volumes 313 and 314 of the Journal of Alloys and Compounds (538 pages). The guest editors were L.R. Morss (Argonne), J.E. Greedan (McMaster), M.F. Reid (Christchurch) and H.B. Silber (San José). The volume starts with a review article written by Brian Maple, recipient of the Ninth Frank H. Spedding Award titled *Three decades of prospecting for novel electronic states and phenomena in f-electron materials*. The remaining 83 contributions are arranged by themes: environmental lanthanide and actinide chemistry (6 contributions), rare earth materials for further automobiles (3 contributions), coordination chemistry (20 contributions), applied spectroscopy (3 contributions), f-element physics (18 contributions), f-element spectroscopy (18 contributions), solid state chemistry (7 contributions), solid state electrolytes (2 contributions), X-ray and neutron scattering (6 contributions) and separation and catalysis (3 contributions). These pa-

pers fairly well reflect the well-balanced program of the conference between chemical and physical topics, 4f- and 5f-elements.

## ACTINIDE 2001

The Actinides-2001 Conference will be held November 4-9, in Hayama, Japan. This is a follow-up of the past actinide conferences held at Baden-Baden (Germany, 1975), Asilomar, (California, 1981), Aix-en-Provence (France, 1985), Tashkent (Russia, 1989), Santa Fe, (New Mexico, 1993) and again Baden-Baden (1997). It provides a forum to discuss all aspects of the science and technology of actinides.

Now the conference moves to East Asia for the first time. It will be held at Shonan Village Center, Hamayama, which is an international conference center situated in the central part of the Miura Peninsula, the holiday resort closest to Tokyo. Built on a hill commanding a view of Mt. Fuji and overlooking Sagami Bay, it offers a combination of facilities for conference, training and lodging in a scenic setting. The venue is close to the ancient city of Kamakura, the old capital of Japan in the 13-14<sup>th</sup> centuries.

The scientific program will include the following topics:

1. Heavy Element Research
2. Magnetism, Superconductivity, High Pressure and Spectroscopy
3. Solution Chemistry
4. Coordination Chemistry and Organometallics
5. Environmental Behavior, Management and Remediation
6. Detection, Analysis, Monitoring and Surveillance
7. High-Temperature Chemistry

8. Nuclear Fuel Technology and Thermophysical Properties
9. Bioscience

For information, consult the web site (see p. 4) or e-mail to

[actq@act2001.tokai.jaeri.go.jp](mailto:actq@act2001.tokai.jaeri.go.jp)

## INDUSTRY

### EOLYS<sup>®</sup> wins a prize

The particle filter designed by Peugeot SA (France) for the elimination of 99% of the particles in the exhaust of diesel-powered automobiles has won a prize at the *Equip Auto 99* fair held in Paris. The system is based on the EOLYS<sup>®</sup> soluble catalyst developed by Rhodia Rare Earths (see ERES NEWSLETTER 10, No 1, 1999). Sales of the first EOLYS<sup>®</sup>-equipped cars have started this year.

### Santoku buys Rhodia alloys

The American branch of Santoku has bought the rare-earth alloy manufacturing plant in Phoenix, previously owned by Rhodia and is now moving all its activities in Phoenix, Arizona.

## PEOPLE

### † A. Kamarzin

Alexandr Kamarzin, whose scientific activity was fully dedicated to investigations of rare earth compounds, died on April 10, 2000, in Novosibirsk, Russia, at the age of 65. After completion of the Chemical Technological Mendeleev Institute in Moscow, in 1958, A. Kamarzin devoted his activities to the development of the Inorganic Institute at the Siberian Branch of the

Russian Academy of Sciences (Novosibirsk). Since 1989, he acted as Head of the Laboratory of Synthesis and Crystal Growth of Rare-Earth Compounds. He is the co-author of more than 150 papers and patents on methods of synthesis and characterization of rare-earth sulfides, oxisulfides, pure rare-earth metals and intermetallic compounds, as well as hydrides and borides. He is the author of the hypothesis that the radical  $(LnS)^+$  is the building block of  $Th3P_4$ -type  $Ln_2S_3$  sulfides.

(Communicated by Dr Patrick Maestro, Rhodia Rare Earths).

### ICFE'4

The fourth International Conference on f-elements has been held in Madrid, September 17-21, 2000. It has attracted 350 participants, including accompanying persons, from more than 30 different countries. Among others, 80 scientific participants were from Spain, 40 from France, 22 from Poland, 29 from Brazil, 21 from Switzerland, 17 from Portugal, 15 from Japan, 13 from the Russian Federation of States, 12 from Belgium, and 10 from Italy. More than 430 scientific contributions have been presented, including five plenary lectures, 19 invited lectures, 70 oral contributions and 340 posters. The participants could therefore have a very good idea of the ongoing research in all the scientific and technological fields related to f-elements.

The conference was perfectly well organized by Prof. Regino Saez-Puche and his team who devoted a lot of efforts to make people comfortable and to provide them with good opportunities to discuss their scientific issues. Moreover unforgettable social events took place, from the welcome reception to the flamenco evening and to the conference dinner held in magnificent Toledo.

We thank the organizers for all

what they have done for f-element science and technology.

One of the conference highlights was the first granting of two awards for senior and junior scientists, the LeCoq de Boisbaudran Award, sponsored by Rhodia Rare Earths and the Junior Award, sponsored by ERES.

### LeCoq de Boisbaudran

François Lecoq de Boisbaudran was born in Cognac on April 18, 1838 and died on May 28, 1912. He did not hold any university degree and was therefore a self-educated man whose research was supported by a family business dealing with wines and spirits.

He first got interested in crystallization processes and supersaturated solutions, the subject of his first scientific paper published in 1866. But he soon also devoted attention to atomic spectroscopy and started to build a systematic data bank. This work led to the discovery of element 31 (gallium) identified in 1875 from its atomic spectrum and isolated by electrolysis in 1876. Spectroscopic investigation of samarskite (a niobium mineral) resulted in the isolation of element 62 (samarium) in 1879, after lengthy fractionations. He used a similar procedure for the discovery of element 66 (dysprosium) in 1886.

LeCoq de Boisbaudran was a skilled experimentalist who met success combining rigor and challenging ideas. His achievements are remarkable, taking into account that he worked alone... and part time ! His contribution to rare earths has been decisive, not only with respect

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to their discovery, but also because he pioneered spectroscopic methods (e.g. doping) that G. Urbain and many other scientists adopted later to design phosphors.

The ERES executive committee therefore fully agreed to the proposal of his chairman to name the senior scientist award sponsored by Rhodia after this brilliant and creative man.

(After the lecture of P. Caro, first Lecoq de Boisbaudran award winner).

### Paul Caro

Solid state chemist and spectroscopist, Paul Caro has been chosen as the first winner of the LeCoq de Boisbaudran award in regard of his thoughtful and innovative contributions to the field of rare earths. His PhD thesis (1962) was concerned with the identification of the various phases of Y-Mg using electron microprobe, a very new analytical tool at that time. He then turned to the study of ternary diagrams involving rare earth oxides, carbonate and water, before moving to Arizona State University where he worked with L. Eyring and J. Corbett on non stoichiometric phases of rare earth oxides and on chlorides.



Back to France in 1967, he was appointed vice-director of the "Laboratoire des Terres Rares" in Bellevue near Paris in 1969 where he started a systematic study of rare earth absorption spectra and, later, emission spectra, together with a theoretical interpretation based on crystal field calculations. He also

developed thin film chemistry and analysis by means of electron microscopy. Paul Caro is the author of a book on the electronic structure of transition metal elements (1976) and he has authored or co-authored more than 300 scientific papers. In addition to his scientific career, Paul Caro has always devoted much attention to science dissemination both among scientists and to a large non-specialist audience. He is a corresponding member of the French Academy of Sciences since 1978 and a member of several editorial boards (including the Handbook on the Physics and Chemistry of Rare Earths). He was a co-founder of ERES and since 1989, he moved to the "Cité des Sciences" in Paris where he acted as scientific counselor. Presently, he is in charge of the communication at the CNRS.

Paul Caro is a very humanitarian personality and his way of thinking and of discovering and solving interesting problems is very similar to the attitude of LeCoq de Boisbaudran.

### Koen Binnemans

Dr Koen Binnemans from the Katholieke Universiteit Leuven was awarded the first ERES Junior Award for his outstanding achievements in research during his short career (60 papers published to date). He was born in Geel in 1970 and earned a "licentiate" (1992) and a PhD (1996) in inorganic and analytical chemistry from K.U. Leuven, both with *summa cum laude*. His PhD work, performed under the supervision of Prof. Christiane Görller-Walrand was devoted to the coordination effects in rare earth spectra. Dr Binnemans visited several universities during and after his PhD work, the University of Hannover (January-April 1992), the University of Rennes (September-November 1996), and the University of Exeter (March-May 1997, October 1997, June 1998 and September 1998). He received several awards,

including the Youth Prize of the Flemish Chemical Society (1992), the DSM award for Chemistry and Technology (1996), and in 1999 he was selected as one of the laureates of the Belgian Academy of Sciences.



His scientific work first focused on crystal field analysis of absorption, emission and magnetic circular dichroism spectra of rare earth coordination compounds. He is the co-author of two chapters in the Handbook on the Physics and Chemistry of Rare Earths: chapter 155 (Vol. 23) devoted to the rationalization of crystal field parameterization, and chapter 167 (Vol. 25) dealing with spectral intensities of f-f transitions. More recently, he became interested in lanthanide-containing liquid crystals and has already published more than a dozen papers in the field, between 1999 and 2000, including one in the Journal of the American Chemical Society. There is no doubt that Dr Koen Binnemans will be one of the leading rare earth coordination chemists in the 21<sup>st</sup> century.

### ERES GENERAL COUNCIL

The ERES 4<sup>th</sup> General council of ERES was held on September 21, 2000, at the end of the ICFE-4 conference and was attended by 50 members of the association. In absence of the chairman for health reasons (see point 7), the session was chaired by Dr Pierre Porcher, vice-chairman.

The agenda proposed by the Executive Committee has been accepted.

### 1. Reports

- a) J.-C. Bünzli recalls the goals of ERES which are the following:
- ✓ Organisation of a triennial international conference on f-elements (ICFE).
  - ✓ Exchange of professional, technical, industrial and economical information.
  - ✓ Promotion of educational and research activities at the European level.
  - ✓ Maintenance of close contacts with similar societies and organisations around the World.
- b) The work of the Executive Committee towards these goals is then evoked, especially the successful organization of the ICFE conferences, the granting of stipends to young scientists in order for them to attend these conferences (a total of 46 stipends have been granted so far, 10 of them for the Madrid conference), the ERES Newsletter (24 issues published to date), successful contacts with similar organizations around the world and the development of a web site (<http://www-eres.unil.ch>).
- c) The report of the treasurer is summarized as follows (figures are rounded and given in SFrs):

Year	1997	1998	1999
<b>Receipts</b>			
Dues	2660	210	4475
Interests	808	448	558
ICFE-2	5000		
Total	8468	658	5033
<b>Costs</b>			
Taxes	-56	-15	-141
Web server	-	-	-1210
Total	-56	-15	-1351
Profit	8412	643	3682
<b>Assets as of December 31:</b>			
Year	1997	1998	1999
	41 235	41 878	45 560

The ERES membership has grown from 200 members in 1997 to 362 and 368 members in 1998 and 1999, respectively.

d) The report of the accounting auditors is read:

“As auditors for the European Rare Earth and Actinide Society (ERES) we have examined the book of account and the financial statements presented by Dr J.-C. Bünzli, secretary-treasurer of the ERES, covering the period from January 1<sup>st</sup> 1997 to December 31<sup>st</sup> 1999. Based on our examination, we ascertain that the financial statements are in accordance with the book of account and pieces justifying earnings and expenses. We recommend that the financial statements submitted to you be approved.” (Signed: Drs A.E. Merbach and C. Friedli).

These reports have been approved unanimously by the assembly.

## 2. Membership dues 2000-2003

The assembly has endorsed the proposal of the Executive Committee: regular members, SFrs 30 per year, 110 for 4 years; Eastern countries: SFrs 15 per year, 60 for 4 years; sponsors: SFrs 750 per year.

## 3. Prize regulations

The assembly has also approved the regulations for the two prizes which are now offered by ERES during ICFE conferences: the LeCoq de Boisbaudran senior award and the ERES Junior Award. Due to lack of space, these regulations will be published in the next issue of the newsletter.

## 4. ICFE'5

This event will take place in Geneva, **August 24-29 2003** and will be co-organized by professors J.-C. Bünzli and C. Piguet. Information will be posted on the web site: <http://www-eres.unil.ch>.

## 5. ICFE'6

Prof. Janina Legendziewicz reads a letter from herself and Professor Wieslaw Strek proposing Wroclaw as the venue of this event:

“Dear Prof. Bünzli,

By this letter, we would like to propose the organization of the 6<sup>th</sup> International Conference on f-Elements be held in 2006 in Wroclaw, Poland. As you know, Poland is a place where the investigations of lanthanide and actinide materials is highly developed. More than one hundred chemists and physicists are involved in this field. Wroclaw is traditionally a place of conferences devoted to the chemical and physical aspects of lanthanide and actinide materials.

We do hope that you and your colleagues will accept our proposal. Looking forward to seeing you in Madrid, with best regards. Wroclaw, Sept. 7, 2000. (Signed J. Legendziewicz, W. Strek).”

This proposal is accepted.

## 6. Elections

The proposal of re-conducting the present composition of the Executive Committee is debated. Some members propose to add more members. J.-C. Bünzli remarks that if this proposal were approved, the bylaws should first be altered. Moreover, more members do not necessarily means more efficiency and, finally, all countries are represented in the Advisory Committee, which will be soon renewed. J.-C. Bünzli also apologizes that due to the health problem encountered by the chairman, the proposal of the Executive Committee could not be disseminated to the members before the start of ICFE-4, publication of the planned issue of the ERES Newsletter having been delayed.

Finally, a majority of members approve the following nominations for the period 2000-2003:

Chairman: L. Niinistö; vice-chairman: P. Porcher, secretary-treasurer:

J.-C. Bünzli; 2<sup>nd</sup> secretary: M. Godlewski. Accounting auditors: A.E. Merbach, C. Friedli.

## 7. Varia

a) Professor Niinistö, chairman of the association has suffered a brain hemorrhage mid-September while attending a conference in Portugal. He has been brought back to Finland where he is slowly recovering. The assembly adopts the following statement:

“The members of the European Rare Earths and Actinide Society have heard the sad news of the health condition of their respected chairman. They send him their best wishes for a prompt recovery in the event of having him soon back among them.

(General council, ERES, Madrid September 21, 2000).”

b) Pierre Porcher thanks J.-C. Bünzli for the work he is doing in the name of the association.

## AGENDA

### 4<sup>th</sup> ICRE

**Beijing (China) 15-20.6 2001**

The Chinese Society of Rare Earths

### Rare Earths 2001

**Brazil Sept. 22-26, 2001**

e-mail: RE2001@quim.iq.usp.br  
www.iq.usp.br/geral/RE2001/congress.html

### ACTINIDE 2001

**HAYAMA (JAPAN) Nov. 4-9, 2001**

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<http://act2001.tokai.jaeri.go.jp>

### 23<sup>RD</sup> RERC

**DAVIS (USA) July 14-18, 2002**

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