Vanadis, Norse Goddess of Love and Beauty, the deity after whom vanadium was named, and after whom the new award is named.

and structure), J. Hartung, T. Kabanos, A. Salifoglou (synthesis), T. Hirao, V. Conte (redox chemistry), and A. Keramidas, J. Krzystek (spectroscopy).

Recent results in the catalytic behavior of various vanadium complexes were reported in a fascinating plenary lecture by H. Yamamoto and section lectures by C. Lorber and E. Rosenthal. Also of note was the awarding of the first-ever Vanadis Award to Debbie C. Crans (University of Colorado, USA).

The entire program and abstracts of the symposium, list of participants, and photographs of the event can be accessed at **<www.staff.u-szeged.hu/~vanadium>**. A selection of the plenary and invited lectures will be published in *Pure and Applied Chemistry*.

The V5 Symposium is planned for fall 2006 in San Francisco, California, USA.

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Chemical Thermodynamics

by John H. Dymond and Haike Yan

From 17–21 August 2004 in Beijing, China, the **18th IUPAC Conference on Chemical Thermodynamics** (ICCT) was held concurrently with the 12th National Conference on Chemical Thermodynamics and Thermal Analysis of China. Conference organizers included Haike Yan, conference chair; Zhiwu Yu, conference co-chair; and Xibai Qiu, conference secretary. The conference attracted 395 participants from 40 countries (144 from China, 84 from Europe, 49 from Japan, and 40 from North America). Eighty-two percent of the delegates were from academia (including 56 students), 15 percent from industry, and three percent from other sectors.

During the opening ceremony, there was a presentation of the first Doctorate Awards to be given by the International Association of Chemical Thermodynamics. The awards, sponsored by Elsevier, were given to Lin Chen, from Tsinghua University, Beijing; Dirk Wandschneider, from the University of Rostock, Germany; and Weiguo Xu, from Liaoning University, China. They each received a certificate and USD 500, and presented their papers at the conference.

The conference began with the Rossini Lecture, which was presented by Jean-Pierre E. Grolier on "Advanced Experimental Techniques in Polymer Thermodynamics." The conference program consisted of eight symposia, and three workshops. In symposium one, on Electrolyte and Non-electrolyte Solution Thermodynamics, Emmerich Wilhelm gave the plenary lecture on "The Fascinating World of Non-electrolytes, Pure and Mixed." The symposium also featured invited lectures by Eckhard Vogel, Fumio Hirata, and Takayoshi Kimura. Symposium two, on New Materials, featured a plenary lecture by C. Richard Catlow on "Computational Approaches to the Catalytic Activation of Carbon-Hydrogen Bonds," and invited lectures by Mary Anne White and Vladimir Durov. The plenary lecture in the third symposium, Phase Equilibrium, Supercritical Fluids, and Separation Technologies, was given by Pablo Debenedetti on "Thermodynamics of Supercooled and Glassy Water." Cornelis Peters and Ding-Yu Peng gave invited lectures. Symposium four on Biological, Medical, Pharmaceutical, Agricultural, and Food Thermodynamics featured a plenary lecture by Stephan Grzesiek on "Biomolecular Interactions in Solutions." Lee Hansen and Ichiro Hatta were the invited lecturers.

Symposium five was on Colloid and Interface Science. Bernard Cabane presented the plenary lecture on "Solid-Liquid Separation," and there were invited lectures from Gerd Olofsson, Watson Loh, and Xueqin An. The title of symposium six was Non-equilibrium Thermodynamics, Statistical Thermodynamics, and Molecular Simulation. The plenary lecture on "Non-equilibrium Pattern Formation" was presented by Qi Ouyang. An invited lecture was given by Zhen-Gang Wang. Symposium seven considered Thermochemistry and Molecular Energetics, with

Michio Sorai, the plenary lecturer, speaking on "Entropy Diagnosis for Phase Transitions Occurring in Functional Materials." Juliana Boerio-Goates gave the invited lecture. Symposium eight was on Industrial Thermodynamics and Data Bases, with a plenary lecture by Michael Fenkel on "Global Communications and Expert Systems in Thermodynamics: Connecting Property Measurement and Chemical Process Design." Invited lectures were given by Pertti Koukkari and Zhoulan Yin.

The conference featured three workshops: Workshop on Thermodynamic Frontiers and Education, with invited lecturer Kazuya Saito; The Ionic Liquids Workshop, with invited lecturers Joan Brennecke and Andreas Heintz; Workshop on New Experimental Techniques, including Nanotechnology, with invited lecturers Joon Won Park and Junko Morikawa. In addition, there were 189 oral presentations, spread over the symposia and workshops, and 283 poster presentations.

The Rossini lecture and the plenary lectures will be published in *Pure and Applied Chemistry*. Selected papers from individual symposia will be published in a variety of other journals.

The plenary and invited lectures demonstrated how chemical thermodynamics is making important and unparalleled contributions to innovative and rapidly developing, interdisciplinary fields such as life sciences, new materials, medicine and pharmacy, agriculture, and green chemistry. These issues are particularly important for those who are in developing or economically disadvantaged. A great benefit of the conference was the opportunity it provided for face-to-face discussion and communication with scientists from developed countries. This should lead to further research and improved education.

Thermodynamics will continue to be an important area of research for many years to come, with a wide range of applications from chemical engineering to the bio-sciences. We look forward to the presentation and discussion of the results of further advances in chemical thermodynamics at the next ICCT, which will take place in Boulder, Colorado, USA, in 2006.

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Phosphorus Chemistry

by Pascal Metivier

The **16th International Conference on Phosphorus Chemistry** was held 4–9 July 2004 in Birmingham, England, UK. This tri-annual conference provides a forum for the scientific community to discuss the latest results in the field as well as potential future developments.

The conference, which attracted 480 delegates from 35 countries, offered 156 oral presentations and 240 posters. An important part of the conference has been devoted to the application side of phosphorus chemistry, which has encouraged strong industry participation. This conference was sponsored by Rhodia, one of the major phosphorus chemical manufacturers.

The major trends that can be drawn from this conference are the following:

- Phosphorus chemistry is one field where innovative and "non classical" type structures can be obtained. Most of these structures present very specific electronic properties, which opens new horizons in terms of potential applications.
- Research into polymers containing phosphorus moiety is an important emerging area, with potential implications for surface science and biochemistry.
- There is a clear shift in phosphorus chemistry toward catalysis and surface science. In turn, there is diminishing interest in research and development for some of the more classical applications such as agrochemicals or flame-retardants.
- Biological and medicinal chemistry remains one of the key fields for phosphorus chemistry, with the continuing development of oligonucleotides and their use as antisense drugs and the use of phosphorous for antiviral applications and treating bone related diseases.

Full abstracts of oral and poster presentations, as well as photos, are available at the conference Web site <www.icpc2004.com>.

The next conference will be held in Xiamen, China, in 2007. Professor Yufen Zhao will be the conference chairman.

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