

Conference Call

High Temperature Materials Chemistry

by **Michio Yamawaki** and **Gerd M. Rosenblatt**

The IUPAC Conferences on **High Temperature Materials Chemistry** (HTMC) were initiated by the Inorganic Division's Commission on High-Temperature Materials and Solid State Chemistry in 1977 and have become the premier international venue for exploring the combination of chemistry and materials science as they affect understanding, production, and utilization of high-temperature materials.

The eleventh conference in the HTMC series was held 19–23 May 2003 in Tokyo, Japan, the first time that an HTMC conference has been held in Asia. It was organized by Prof. Michio Yamawaki of the University of Tokyo with the help of Professors T. Terai, S. Nagasaki, and K. Morita. The Tokyo conference provided significant opportunities for constructive interchange between basic and applied researchers, with particular emphasis on material synthesis, nuclear energy application, and electronic functional materials. The fundamental contributions were primarily in the areas of thermodynamics, gas phase/liquid phase/solid phase chemistries, and interface chemistry.

There were about 140 papers and 140 participants from 16 countries at this successful meeting. The number of papers and participants was somewhat smaller than anticipated because of the unexpected spread of the SARS epidemic in some parts of the world and because of the Iraq war.

To ensure productive dialog between basic science and applications and among industry, research laboratory, and academic scientists, the conference, following tradition, was held with no parallel sessions and with lots of opportunities for formal and informal discussions. The majority of the papers were presented in poster sessions. In addition, there were 7 invited plenary lectures, 18 keynote lectures, 6 shorter oral presentations, and 5 hands-on demonstrations of computerized thermodynamic databases.

Among the plenary lectures, to be published in a future issue of *Pure and Applied Chemistry*, were the following:

- "Phase Diagram Calculation and its Application to Alloy Design" (K. Ishida, Tohoku University, Sendai, Japan)
- "Interaction of Water Vapor with Oxides at Elevated Temperatures" (N. Jacobson, NASA Glenn Research Center, Cleveland, USA)

- "Crystal Growth of Superconductive Oxide from Oxide Melts" (Y. Shiohara, International Superconductivity Technology Center, Tokyo, Japan)
- "Stability of Li_x , Li_xH_y and Li_nO_m Clusters and their Relevance to Fusion, Primordial, and Hypervalent Molecules" (C. H. Wu, Max-Planck Institute for Plasma Physics, Garching, Germany)
- "Actinide Research Related to Nuclear Fuel and Fuel Cycle" (J. P. Glatz, ITU, Karlsruhe, Germany)

Keynote lectures by leaders of their fields covered the following topics: high-temperature mass spectrometry, NMR measurement and X-ray absorption fine structure (XAFS) techniques; a number of forefront experimental and modeling studies of ceramic materials and oxides; and studies of alloys, photocatalytic materials, SnO_2 nanotubes, molten salts, supercritical fluids and fuel cells. These papers, along with the other oral and poster presentations, illustrated the tremendous variety of physical and chemical techniques that are utilized, and of systems that are studied, under the umbrella of "high-temperature materials."

The two meetings that immediately preceded HTMC-XI in this well-established and successful IUPAC series were in Jülich, Germany (2000) and State College, Pennsylvania, USA (1997). Following a pattern of meeting every three years on a different continent, the next conference, HTMC-XII, is scheduled for 2006. It will be held in Vienna, Austria, and will be hosted by Prof. Adolf Mikula of the University of Vienna <Mikula@ap.univie.ac.at>.

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Plasma Chemistry

by **Stephen Girshick**

The **16th International Symposium on Plasma Chemistry**, ISPC-16, was held in Taormina, Italy, from 22–27 June 2003, under the auspices of IUPAC and of the International Plasma Chemistry Society. The symposium was organized by an International Organizing Committee chaired by Prof. R. d'Agostino of the University of Bari, Italy, and by a Local Organizing Committee, co-chaired by Prof. d'Agostino, P. Capezzuto, and M. Capitelli.