

# Precious Metals and Clean Energy Sources

## INTERNATIONAL SEMINAR ON PRECIOUS METALS IN HONG KONG

The International Seminar on Precious Metals (ISPM'2001) was held in Hong Kong SAR, China, from 26th to 28th March 2001. Sponsored by the Precious Metals Academic Committee of China (PMACC) and the International Precious Metals Institute (IPMI) and hosted by the Kunming Institute of Precious Metals and Johnson Matthey Hong Kong, the seminar attracted over 100 delegates. Martin Durney (IPMI) and Deng Deguo (PMACC) spoke at the opening ceremony. More than 30 papers were presented, with over half being from outside China. The theme of the Seminar was 'Precious Metals and Clean Energy Sources'. A selective review is presented here.

### New Energy Sources

Current energy demand and supply, and research on technologies for new and renewable energy sources in China were described by Xu Yunsong (Ministry of Science and Technology, China). Sun Jialin (Kunming Institute of Precious Metals, China) and Li Minli (Northwest Institute for Nonferrous Metals Research, China) summarised research work and developments in precious metals for solar cells, hydrogen energy, fuel cells, nuclear power, and superconducting materials and implications for environmental protection. Mao Zhongxiang (Tsinghua University, China) examined uses and developments in hydrogen energy sources, while progress in hydrogen storage materials was reviewed by Jiang Xuan (General Research Institute for Nonferrous Metals, China). Tomoyuki Tada (Tanaka Kikinzoku Kogyo K.K., Japan) described Tanaka's work in catalyst development for PEFCs.

### Catalysts for Exhaust Emission Control

The supply and demand of platinum group metals (pgms) market was described by Jeremy Coombes, while Colin Jaffray (both of Johnson Matthey, U.K.) reviewed the contribution from and developments in pgms in controlling vehicle emissions and future prospects. Luo Yi (Bureau of

National Environmental Protection of China) discussed the current state of automobile exhaust pollution in China and developments in the treatment. Catalysts for treating motorcycle and automobile exhaust were described by Jiang Xiaozhen (Guilin REECat Environment Industry, China) and Huang Rongguaag (Sino-Platinum Metals, China). The recovery of pgms from spent autocatalysts and metal recycling was reported by Jim Robert (Multimetco Inc., U.S.A.). He also reviewed the history of autocatalyst recycling, and commercial and plant operations.

### Environmental Protection

Catalysts for dealing with volatile organic compounds (VOCs), including catalyst design factors, monitoring catalyst performance and pilot testing were reported in a paper by Ben Tiley (Johnson Matthey, U.S.A.). Min Enze and Meng Xiankun (Research Institute of Petroleum Processing, SINOPEC, China) described water-soluble rhodium complex catalysts and amorphous nickel alloy catalysts in a review of green chemistry, introducing the new concept of thermoregulated phase transfer catalysis (TRPTC) and hydroformylation of higher olefins based on TRPTC. Don Zeng (Heraeus, U.S.A.) gave a paper on platinum acetylacetonate, discussing its commercial availability, the financial benefits of a new process technology, and some applications.

Selected papers have been published in the Proceedings of ISPM'2001, ISBN 7-5416-1475-0/TF.11, edited by Deng Deguo, Robert A. Bullen-Smith and Yang Yikun. For copies please contact Li Min, Kunming Institute of Precious Metals, 650221 Kunming, Yunnan, China; Fax: +86-871-5151533; cost U.S.\$ 50.

ZHANG YONGLI AND LI GUANFANG

Zhang Yongli is a Research Professor at Kunming Institute of Precious Metals, China and has worked in materials science for over 30 years, especially with composite materials and thin films.

Li Guanfang is an Emeritus Professor of the Kunming Institute of Precious Metals, China. She recently constructed a database of phase diagrams of precious metal alloys.