

The Chemistry of Selenium and Tellurium

PLATINUM METALS ASPECTS OF THE IX INTERNATIONAL CONFERENCE HELD IN MUMBAI, INDIA

Over 160 delegates from 15 countries attended the IX International Conference on the Chemistry of Selenium and Tellurium (ICCST-9) held at the Indian Institute of Technology Bombay, from 23rd to 27th February, 2004. This is a triennial international conference, the first one being held in New York in 1971. ICCST-9 covered various aspects of selenium (Se) and tellurium (Te) chemistry (including biochemistry, materials and environmental chemistry). There were 12 plenary, 19 session and 23 invited lectures, and about 60 poster presentations. Only lectures related to the platinum group metals are reported here.

S. Uemura (Kyoto University, Japan) delivered a plenary lecture entitled 'Retrospect of my Se and Te chemistry'. Among many other reactions of Se and Te compounds, he described oxidative addition of $(MeY)_2$ ($Y = S, Se, Te$) to $[Cp^*Ru(\mu_3-Cl)]_4$ affording organochalcogenolato bridged diruthenium complexes, $[Cp^*RuCl(\mu-YMe)]_2$. The use of the latter molecules as catalyst for propargylic substitution reactions has been examined.

Versatile synthetic routes to Pd(II) and Pt(II) diselenolene complexes containing tertiary phosphines and Pt selenaketocarbene derivatives were described by C. P. Morley (University of Wales Swansea, U.K.). Significant differences between Pd and Pt chemistry have been reported. The newly synthesised complexes were characterised by X-ray crystallography, NMR and mass spectrometry.

The synthesis of several hybrid telluroethers and telluroether containing Schiff bases was presented by A. K. Singh (Indian Institute of Technology Delhi, New Delhi, India). These molecules were shown to be versatile ligands. Their coordination chemistry with Pd, Pt and Ru was described.

V. K. Jain (Bhabha Atomic Research Centre) (1) presented the chemistry of Pd and Pt complexes derived from N,N -dimethylaminoalkyl chalcogenolates, a family of ligands designed and developed at BARC. Complexes with diverse nuclearity (mono-, bi-, tri- and hexa-) were described. The

nuclearity is greatly influenced by the nature of the chalcogen atom (S, Se, Te) and by the number of carbon atoms separating the nitrogen and chalcogen centres. These complexes have been characterised by IR, NMR (1H , ^{13}C , ^{31}P , ^{77}Se , ^{125}Te , ^{195}Pt) and UV-vis spectroscopies, FAB mass spectrometry and X-ray crystallography. A weak absorption in the UV-vis spectra of $[MCl(ECH_2CH_2NMe_2)(PR_3)]$ ($E = S, Se, Te$; $M = Pd$ or Pt) has been attributed to metal mediated ligand-to-ligand charge transfer. This absorption is red-shifted on moving from $S \rightarrow Se \rightarrow Te$. The use of some of these complexes as molecular precursors for the synthesis of Pd chalcogenides has been demonstrated.

Five of the poster presentations showed the chemistry of Pd, Pt and Ru complexes containing Se and Te ligands.

In conclusion the ICCST-9 provided a medium for groups to exchange views on current and emerging themes in Se and Te chemistry. The international advisory board of ICCST has proposed broadening the scope of the conference to also cover the chemistry of S and Po. A special issue of *Phosphorus, Sulfur, and Silicon and the Related Elements* will contain the presentations at ICCST-9.

The tenth conference in the series is planned to take place in June 2007 in Lodz, Poland, under the chairmanship of Professor Marian Mikolajczyk, E-mail: marmikol@bilbo.cbmm.lodz.pl

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Reference

- 1 S. Dey and V. K. Jain, *Platinum Metals Rev.*, 2004, 48, (1), 16

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