PS07.03.12 THE CHEMISTRY OF PALLADIUM-OSMIUM MIXED-METAL CARBONYL CLUSTERS. Wing-Tak Wong Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong.

The heterometallic cluster Os9Pd(CO)10(bipy) has been isolated in moderate yield from the reaction of Os9(CO)10(MeCN)2 and (bipy)Pd(CO)Me2, and has been shown by a single crystal X-ray structure analysis to contain a monocapped octahedral metal core with the palladium occupying one vertex of the octahedron. Reaction of (bipy)Pd(CO)Me2 with H2Os9(CO)10 affords Os9(CO)10[Pd(bipy)]2 which exhibits an A-frame metal core. The unsaturated cluster H2Os9(CO)10 also react with trans-[P3Ru(CO)3] to give a range of mixed-metal clusters of palladium and osmium. All new clusters have been fully characterized by spectroscopic methods and crystallography. Some structural formulae of these mixed-metal clusters are showed in the following figure:

Exotic Molecules-Organometallic


Novel metal-carbene complexes (2) with a metallapentalene framework were obtained from 6a-thiazenapentalenes (1) which contain a hypervalent N-S-N bond by treating with Pt(PPh3)4, Pd(PPh3)4, and Rh(PPh3)3Cl [Matsunuma et al. (1995) J. Am. Chem. Soc. 117, 3623].

PS07.04.03 TOPOCHEMICAL AND HEAT-PHYSICAL PROPERTIES OF MoO3(C6H3CONH0)2 COMPLEX AND ITS CRYSTALLOSOLVATES. L.K.Kim, Kh.T.Sharipov, V.P.Brukov, Institute of Chemistry, Tashkent, Uzbekistan

This study is devoted to the investigation of physical and chemical properties of MoO3(C6H3CONH0)2 complex and its crystallosolvates. The quantitative estimation of the energy of solvent molecules taring off complex molecule depending on structure of crystallosolvate and solvent nature is given. These parameters of conversion have been measured by the kinetic methods of their crystallosolvate thermodissociation kinetics in a 0.5-50% range of conversion amount has been determined. The compensation effect relationship is established to be specific to the isostructural or similarly constructed coordinat compounds.

In 270-320K temperature range with constant pressure in adiabatic regime the heat capacity of MoO3(C6H3CONH0)2 complex and its crystallosolvates have been determined. The polynomials of the heat capacity equations have been calculated for the substances under study. The crystallosolvates thermodynamic parameters calculated have been compared with the kinetic ones of their topochemical dissociation and correlated with their packing types. On adsorption parameters of polar solvent (n-butanol and acetone) from unpolar medium (benzene) the comparative adsorptiv characteristics of the MoO3(C6H3CONH0)2 and WO3(C6H3CONH0)2 complexes are given. These substances are recommend as selective sorbents for unsoluble solvents cleaning from minute quantities of polar ones.