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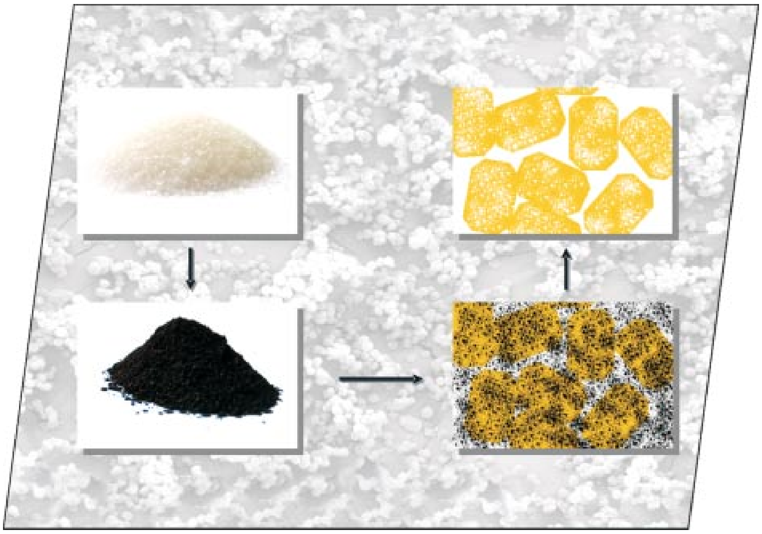
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows a novel method for producing mesoporous zeolite single crystals by using cheap and easily prepared porous carbon as the mesopore template. The porous carbon template was obtained by carbonization in Ar of a hydrothermally treated sucrose/ammonia mixture, and it was successfully applied as an inert carbon matrix during zeolite crystallization. After hydrothermal crystallization, combustion of the carbon embedded in the zeolite crystals yielded mesoporous zeolite single crystals. Details are discussed in the article by C. H. Christensen et al. on p. 3955ff.



CONTENTS

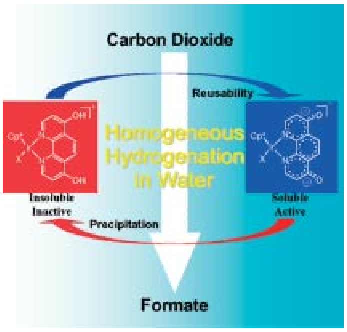
MICROREVIEW

CO_2 Conversion

Y. Himeda* **3927–3941**

Conversion of CO_2 into Formate by Homogeneously Catalyzed Hydrogenation in Water: Tuning Catalytic Activity and Water Solubility through the Acid–Base Equilibrium of the Ligand

Keywords: Carbon dioxide fixation / Catalyst tuning / Ligand design / Substituent effects / Catalyst recycling



Highly efficient, waste-free, and catalyst-recyclable conversion of CO_2 into formate in water was achieved by tuning the catalytic activity and water solubility of the catalyst ligands 4,4′-dihydroxy-2,2′-bipyridine (dhbp) and 4,7-dihydroxy-1,10-phenanthroline (dhpt) by monitoring their acid–base equilibrium.

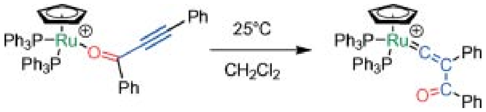
SHORT COMMUNICATIONS

C–C Bond Activation

M. J. Shaw,* S. W. Bryant,
N. Rath **3943–3946**

η^1-Vinylidene Formation from Internal Alkynones by C–C Bond Migration

Keywords: Ruthenium / Alkynes / Isomerization / Vinylidene bond activation / Unsaturated complexes



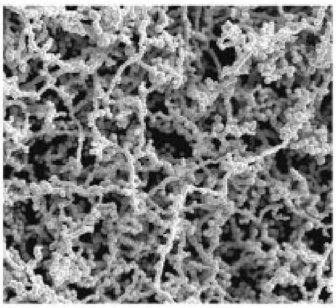
The formal 16-electron $[CpRu(PPh_3)_2]^+$ fragment was shown to react with three nonterminal acetylenic ketones to form η^1-vinylidene complexes. These reactions involve C–C bond activation and apparently proceed through η^1-ketone intermediates.

Chain-Like CoNi Alloys

L.-P. Zhu, H.-M. Xiao,
S.-Y. Fu* **3947–3951**

Surfactant-Assisted Synthesis and Characterization of Novel Chain-Like CoNi Alloy Assemblies

Keywords: Alloy / Assemblies / Hydrothermal method / Ferromagnetism / Coercivity



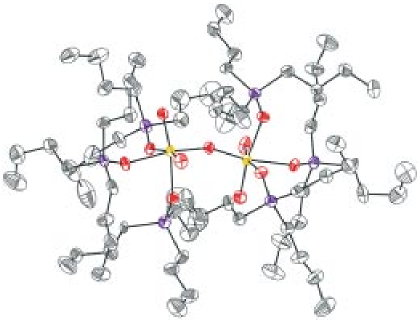
Novel chain-like CoNi alloy assemblies with a length of up to 6–7 μm were successfully prepared by a surfactant-assisted hydrothermal synthetic route. The results show that chain-like CoNi alloy assemblies composed of well-aligned CoNi alloy submicrospheres have a diameter of about 400–500 nm. Magnetic hysteresis measurements revealed that the chain-like CoNi alloy assemblies display ferromagnetic behavior.

Hexamolybdates

M. R. Pedrosa,* R. Aguado, V. Díez,
J. Escribano, R. Sanz,
F. J. Arnáiz* **3952–3954**

Unprecedented Rearrangement of Molybdenum(VI) Oxide to (μ_2-Oxido)bis[dioxidomolybdenum(VI)] Hexamolybdate

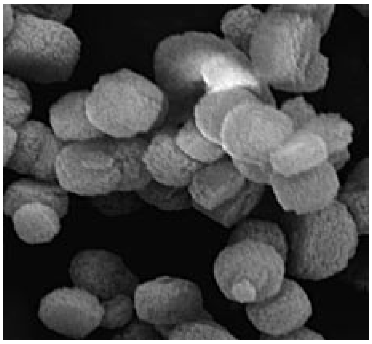
Keywords: Molybdenum / Hexamolybdates / O ligands / Polyoxometalates



$MoO_2(acac)_2$ reacts in methanol under mild conditions to afford a new family of molybdates of composition $[Mo_2O_5L_6][Mo_6O_{19}]$ (L = H_2O, amides, sulfoxides, and phosphane oxides); the $OPBu_3$ derivative is the first hexamolybdate in a noncentrosymmetric polar crystal class.

FULL PAPERS

Hierarchical Zeolites



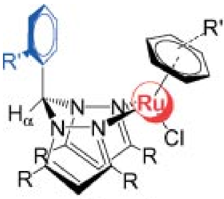
A mesoporous carbon prepared from sucrose was successfully employed as a hard template to produce hierarchical silicalite-1, thus providing a very simple and inexpensive route to desirable zeolite catalysts.

K. Zhu, K. Egeblad,
C. H. Christensen* 3955–3960

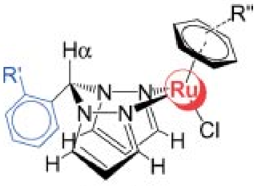
Mesoporous Carbon Prepared from Carbohydrate as Hard Template for Hierarchical Zeolites

Keywords: Zeolite / Templating / Hierarchical materials / Sucrose / Porosity

(Arene)ruthenium(II) Complexes



Isomer A



Isomer B

A new and safer method for the synthesis of differently substituted bis(pyrazolyl)methane ligands has been developed. Arene–Ru derivatives containing these ligands were obtained. The relative stability of isomers A and B has been analysed. The activity in transfer hydrogenation of benzophenone has been studied. Better results are obtained with ligands that contain methylated pyrazoles.

M. C. Carrión, F. A. Jalón,
B. R. Manzano,* A. M. Rodríguez,
F. Sepúlveda, M. Maestro 3961–3973

(Arene)ruthenium(II) Complexes Containing Substituted Bis(pyrazolyl)methane Ligands – Catalytic Behaviour in Transfer Hydrogenation of Ketones

Keywords: Ruthenium / Arene ligands / Homogeneous catalysis / Bis(pyrazolyl)methane / Transfer hydrogenation / X-ray structure determination

Zn^{II}-cyclen-pyridine Complexes

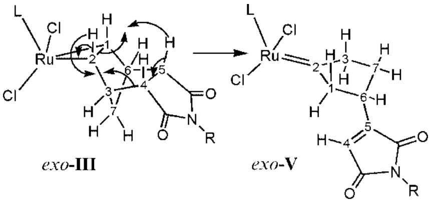
Binary and ternary systems containing Zn^{2+}, cyclen and/or pyridine derivatives (picolinic, nicotinic and dipicolinic acids and nicotinamide) were investigated in solution and in the solid state, and the stability of the ternary complexes was determined.

Z. Vargová,* J. Kotek, J. Rudovský,
J. Plutnar, R. Gyepes, P. Hermann,
K. Győryová, I. Lukeš* 3974–3987

Ternary Complexes of Zinc(II), Cyclen and Pyridinecarboxylic Acids

Keywords: Cyclen complexes / N ligands / Stability constants / Zinc

Metathesis Polymerization



exo-**III** *exo*-**V**

Several Ru^{II}–N-heterocyclic carbene complexes were investigated for their use as precatalysts for the ring-opening metathesis polymerization of enantiomerically pure *exo* and *endo* norbornene derivatives. Differences in reactivity between the *exo* and *endo* derivatives were elucidated by quantum chemical calculations. These revealed different potential reaction pathways.

M. R. Buchmeiser,* D. Wang, Y. Zhang,
S. Naumov, K. Wurst 3988–4000

Novel Ruthenium(II) N-Heterocyclic Carbene Complexes as Catalyst Precursors for the Ring-Opening Metathesis Polymerization (ROMP) of Enantiomerically Pure Monomers: X-ray Structures, Reactivity, and Quantum Chemical Considerations

Keywords: Carbene ligands / Ruthenium / ROMP / Quantum chemistry

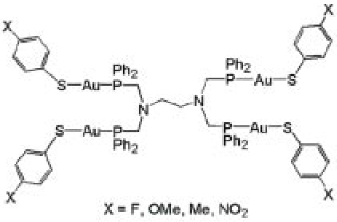
CONTENTS

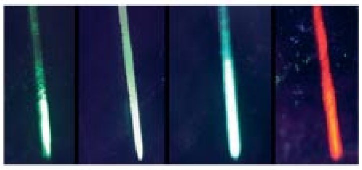
Tetranuclear Gold(I) Complexes

E. J. Fernández,* A. Laguna,*
J. M. López-de-Luzuriaga, M. Monge,
M. Montiel, M. E. Olmos, R. C. Puelles,
E. Sánchez-Forcada .... 4001−4005

Tetranuclear (Phosphane)(thiolato)gold(I) Complexes: Synthesis, Characterization and Photoluminescent Properties

Keywords: Phosphanes / Thiolates / Gold / Luminescence / Aurophilicity





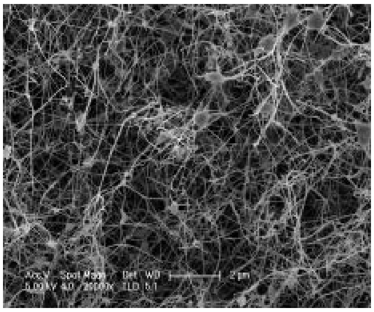
Tetranuclear (benzenethiolato)(phosphane)gold(I) complexes were prepared from tetradentate P donor ligands with an ethylenediamine core, and aurophilic Au···Au interactions were found for $[Au_4(SC_6H_4OMe)_4\{(Ph_2PCH_2)_2NCH_2CH_2N(CH_2PPh_2)_2\}]$. The luminescent properties of these complexes display bright emissions at 77 K in the solid state.

Silicon Carbide Nanowires

B. J.-J. Niu,* J.-N. Wang ...... 4006−4010

An Approach to the Synthesis of Silicon Carbide Nanowires by Simple Thermal Evaporation of Ferrocene onto Silicon Wafers

Keywords: Silicon / Carbides / Thermal evaporation / Ferrocene / Nanowires



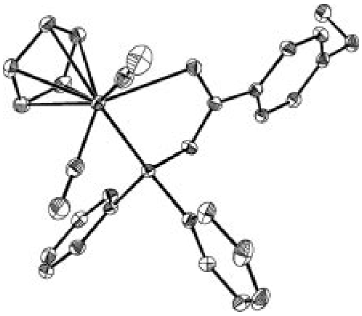
Scales of silicon carbide nanowires (SiC-NWs) were synthesized by thermal evaporation of ferrocene onto silicon wafers at high temperature. The SiC-NWs have diameters of ≈ 20 nm and lengths of several μms. A tentative growth model on the basis of a vapor−liquid−solid (VLS) mechanism was proposed.

Metallophosphaalkene Chelates

L. Weber,* G. Noveski, S. Uthmann,
H.-G. Stammler, B. Neumann ... 4011−4016

Phosphaalkenes $R^1C(O)-P=C(NMe_2)_2$ (R^1=Ph, 4-EtC_6H_4): Versatile Reagents for 1,3-Dipolar Cycloadditions to Phosphenium Complexes $[Cp(CO)_2M=PPh_2]$ (M = Mo, W)

Keywords: Phosphaalkenes / Phosphenium Complexes / Molybdenum / Tungsten



The synthesis of the metallophosphaalkenes $[Cp(CO)_2M^a-P=C(aryl)-O-P^bPh_2-(M^a-P^b)]$ [M = Mo, W; aryl = Ph (**4a**,**b**); M = Mo, W; aryl = 4-EtC_6H_4 (**6a**,**b**)] was effected by treating phosphenium complexes $[Cp(CO)_2M=PPh_2]$ (M = Mo, W) with an excess of the phosphaalkenes aryl-$C(O)-P=C(NMe_2)_2$.

Uranyl Activation

J.-C. Berthet,* G. Siffredi, P. Thuéry,
M. Ephritikhine* .... 4017−4020

Controlled Chemical Reduction of Uranyl Salts into $UX_4(MeCN)_4$ (X = Cl, Br, I) with Me_3SiX Reagents

Keywords: Uranyl salts / Reduction / Silanes / Uranium

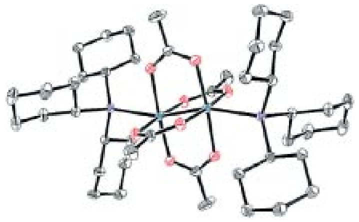
$$UO_2I_2(thf)_3 \xrightarrow[\text{MeCN}]{\text{Excess } Me_3SiX} \begin{array}{c} UX_4(MeCN)_4 \\ X = Cl, Br, I \end{array}$$

Facile reduction of the $[UO_2]^{2+}$ ion
Safe route to UX_4 with good yields

Facile deoxygenation and reduction of the robust $[UO_2]^{2+}$ entity is carried out by treating $UO_2I_2(thf)_2$ or $UO_2(OTf)_2$ with Me_3SiX (X = Cl, Br, I) in acetonitrile. The tetravalent $UX_4(MeCN)_4$ products, obtained in good yields, are useful precursors in uranium chemistry.

Mixed-Valent Ru Complexes

The kinetics of axial ligand substitution of $[Ru_2(\mu\text{-}O_2CCH_3)_4(MeCN)_2]^+$ by two phosphane ligands were measured for the first time as well as the variable-temperature magnetic susceptibility of the corresponding phosphane diadducts, which shows a Boltzmann distribution of states in both cases that is supported by low-temperature X-ray diffraction data.

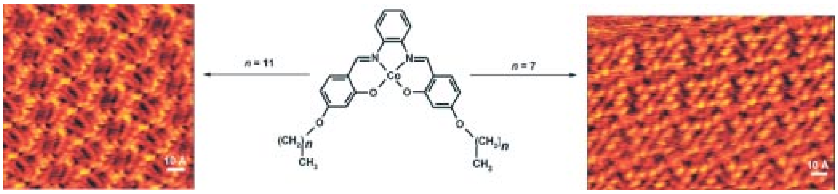


T. J. Burchell, T. S. Cameron, D. H. Macartney, L. K. Thompson, M. A. S. Aquino* .... 4021−4027

Kinetics and Magnetism of Phosphane Diadducts of Diruthenium(II,III) Tetraacetate

Keywords: Carboxylate ligands / P ligands / Ruthenium / Kinetics / Magnetic properties

Self-Assembled Monolayers



As demonstrated here for a series of Co^{II}, Cu^{II} and Ni^{II} salophen complexes, alkyl chain length defines the favoured 2D structure for each metal complex on a liquid−graphite interface.

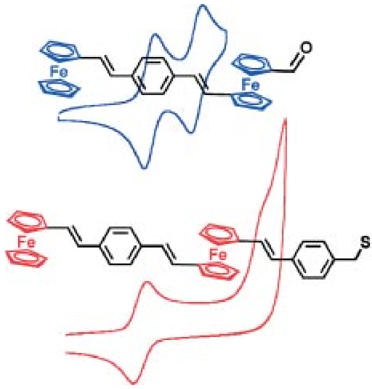
M. T. Räisänen, F. Mögele, S. Feodorow, B. Rieger, U. Ziener, M. Leskelä, T. Repo* .... 4028−4034

Alkyl Chain Length Defines 2D Architecture of Salophen Complexes on Liquid−Graphite Interface

Keywords: Metal-containing monolayers / Nanopatterning / Scanning tunnelling microscopy (STM) / Self-assembly

Efficient Molecular Wires

A particularly short and efficient preparation of conjugated oligo(phenylene-ethylene) thiols bearing redox-active ferrocene moieties is described. For the bis(ferrocenyl) derivatives, the nature of the substituents may lead to an inverted series of electrode potentials, causing a single two-electron wave to occur. The ultrafast cyclic voltammetry of the adsorbed species onto gold electrodes confirms that these compounds are indeed very efficient molecular wires.



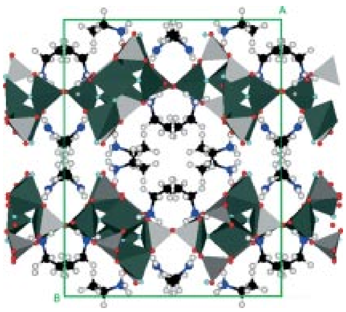
C. Amatore,* S. Gazard, E. Maisonhaute, C. Pebay, B. Schöllhorn,* J.-L. Syssa-Magalé, J. Wadhawan .... 4035−4042

Ferrocenyl Oligo(phenylene-vinylene) Thiols for the Construction of Self-Assembled Monolayers

Keywords: Molecular wires / SAMs / Ferrocenes / Thiols / Redox chemistry / Self-assembly

Fluorogallophosphates

A 2D fluorogallophosphate, named Mu-35, was synthesized hydrothermally by in situ generation of the ethylamine structure-directing agent from ethylformamide. Protonated ethylamine molecules are located inside pseudo 12 MR, in opposition to those observed inside pseudo 8 MR.



L. Lakiss, A. Simon-Masseron,* F. Porcher, S. Rigolet, J. Patarin .... 4043−4049

Mu-35: A Fluorogallophosphate Obtained by In Situ Generation of the Template

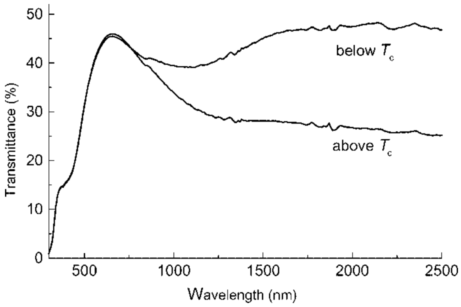
Keywords: Fluorine / Gallophosphate / Structure elucidation / Hydrothermal synthesis

Intelligent Materials

C. Piccirillo, R. Binions,
I. P. Parkin* 4050–4055

Nb-Doped VO_2 Thin Films Prepared by Aerosol-Assisted Chemical Vapour Deposition

Keywords: Intelligent materials / Vanadium dioxide (M) / Transition temperature / Niobium doping



Niobium-doped vanadium dioxide ($V_xNb_{1-x}O_2$, $x = 0-0.037$) thin films were prepared by aerosol-assisted chemical vapour deposition (AACVD) of vanadyl(IV) acetonate and niobium(V) ethoxide in ethanol. The thin films showed thermochromic behaviour, with a marked change in optical properties above and below the switching.

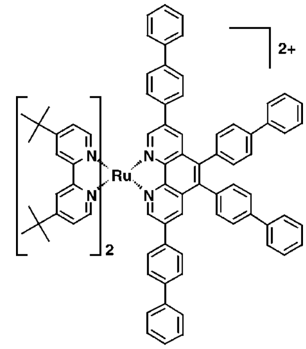
Luminescent Ru Complexes

B. Schäfer, H. Görls, S. Meyer, W. Henry,
J. G. Vos, S. Rau* 4056–4063

Synthesis and Properties of Tetrasubstituted 1,10-Phenanthrolines and Their Ruthenium Complexes

Keywords: Ruthenium / Phenanthroline / Luminescence / Photochemistry

Novel phenanthroline-type ligands with extended aromatic substitutions and the corresponding ruthenium complexes were characterised. The luminescence properties indicate potential applications as luminescent oxygen sensors.



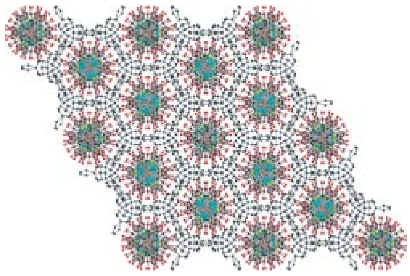
Metal–Carbonyl Clusters

C. Femoni, M. C. Iapalucci, G. Longoni,
F. Ranuzzi, S. Zacchini,* S. Fedi,
P. Zanello 4064–4070

Condensation of Nickel–Carbonyl Clusters with Soft Lewis Acids: Synthesis and Characterisation of the $\{Cd_2Cl_3[Ni_6(CO)_{12}]_2\}^{3-}$ Dimer

Keywords: Cluster compounds / Carbonyl ligands / Structure elucidation / Lewis acids / Cyclic voltammetry

Reaction of $[Ni_6(CO)_{12}]^{2-}$ with $CdCl_2 \cdot 2.5H_2O$ gives the $\{Cd_2Cl_3[Ni_6(CO)_{12}]_2\}^{3-}$ dimer, confirming that the basic character of the $M_3(CO)_6$ triangular faces can be exploited to obtain oligomers or polymers based on metal–carbonyl clusters. These dimers are pillared along the crystallographic *c* axis, forming infinite columns of alternating cluster anions and thf molecules.



Silicon Pnictogen Cages

G. Tekautz, J. Baumgartner, A. Dransfeld,
K. Hassler* 4071–4077

Silicon–Phosphorus and Silicon–Arsenic Cage Compounds with Bicyclo[2.2.1]heptane, Bicyclo[3.2.1]octane and Tricyclo[3.3.3.1.$0^{3,7}$]nonane Backbones

Keywords: Cage compounds / Crystal structures / Ab initio calculations / Silicon

In the reaction of chlorooligosilanes $MeSi(SiMe_2Cl)_3$ or $[MeSi(SiMe_2Cl)_2]_2$ with Na_xP/K_xP and Na_xAs/K_xAs, bi- and tricyclic cage compounds are formed alongside polymeric materials. To explain the observed product distributions, the Gimarc concept of thermodynamic preference of topomers was positively verified with the help of quantum chemical calculations.