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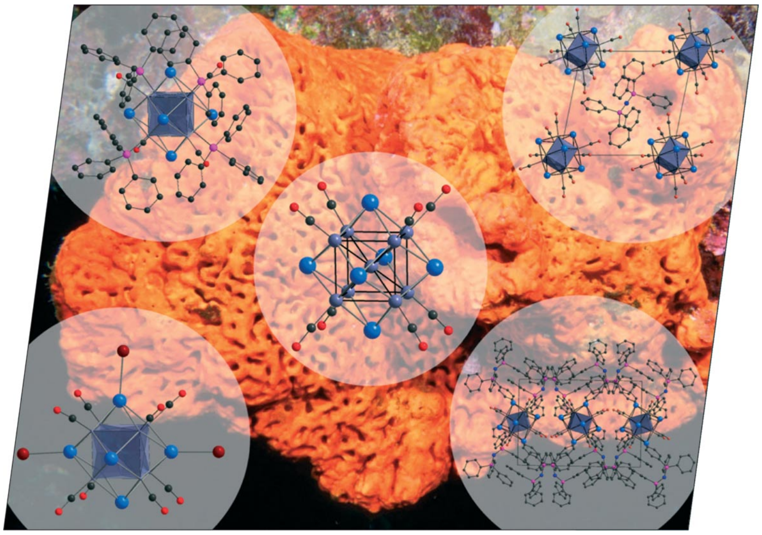
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows an organometallic electron sponge and an elephant-ear sponge in the background (photo by F. and J. Burek, National Marine Sanctuaries). The electronic flexibility of the cobalt-centered cubic $[Co_9Te_6(CO)_8]^n$ cluster ($[\mathbf{3}]^n$) in the central circle is expressed by differently charged states (n = 1+ to 5−). Starting from the upper left corner of our graphic in a clockwise direction, neutral $[Co_9Te_6(CO)_4(PPh_3)_4]$, structurally diverse networks of $[Ph_3PNPPh_3][\mathbf{3}]$ and $[Ph_3PNPPh_3]_2[\mathbf{3}]$ salts and the core of the $[Co_9Te_3\{\mu_5\text{-}Cp'_2Nb(CO)Te\}_3(CO)_8]$ cluster as a pseudo-protonated representative of the $[\mathbf{3}]^{3-}$ anion are shown. Details of the structural, electrochemical and theoretical properties of these compounds are described in the article by J. Wachter et al. on page 1959ff.



CONTENTS

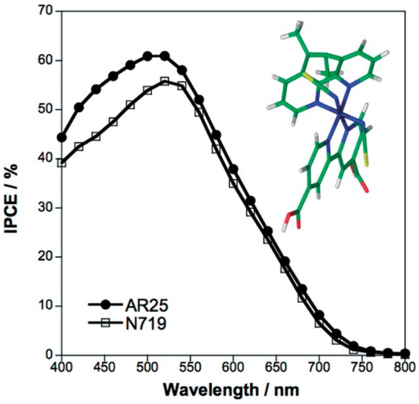
SHORT COMMUNICATIONS

Dye-Sensitized Solar Cells

A. Reynal, A. Forneli,
E. Martinez-Ferrero, A. Sanchez-Diaz,
A. Vidal-Ferran,
E. Palomares* 1955–1958

A Phenanthroline Heteroleptic Ruthenium Complex and Its Application to Dye-Sensitised Solar Cells

Keywords: Dyes / Solar cells / Ruthenium / Heteroleptic complexes / Charge recombination / Electron transfer



We describe a new ruthenium heteroleptic complex that shows enhanced photocurrent when used as sensitizer in dye-sensitised solar cells. The complex shows an IPCE at the maximum absorbance wavelength exceeding the performance of a commonly used ruthenium homoleptic complex under the same conditions.

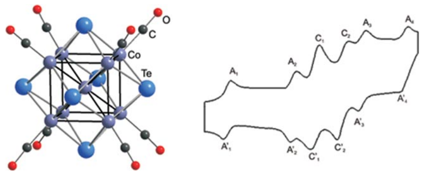
FULL PAPERS

Cobalt Cluster Chemistry

M. Bencharif, O. Cador, H. Cattey,
A. Ebner, J.-F. Halet, S. Kahlal, W. Meier,
Y. Mugnier, J.-Y. Saillard, P. Schwarz,
F. Z. Trodi, J. Wachter,*
M. Zabel 1959–1968

Electron-Sponge Behavior, Reactivity and Electronic Structures of Cobalt-Centered Cubic Co$_9$Te$_6$(CO)$_8$ Clusters

Keywords: Cobalt / Tellurium / Cluster / Electrochemistry / Electronic structure



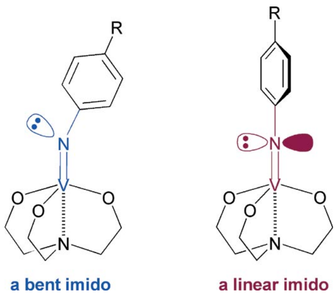
A series of cobalt-centered hexacapped clusters containing the Co$_9$(μ_4-Te)$_6$L$_8$ core is described in which the metal electron count (MVE) ranges from 120 to 126 MVE. Structural, electrochemical (including the [Cp*$_2$Nb(CO)$_2$]$^+$ cation) and theoretical investigations prove the remarkable electron-sponge behavior of this class of compounds.

(Arylimido)vanadium(V) Species

T. Moriuchi,* T. Beppu, K. Ishino,
M. Nishina, T. Hirao* 1969–1973

Structural Control of (Arylimido)vanadium(V) Compounds through π Conjugation

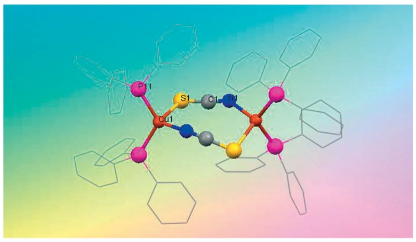
Keywords: Vanadium / Multiple bonds / Coordination modes / N,O ligands / Structure elucidation



Structural characterisation of (arylimido)triethanolaminatovanadium(V) compounds was carried out by single-crystal X-ray structure determinations to elucidate the substituent effect on the imido structures in which the imido structures are strongly controlled through π conjugation by the *para* substituents of the aryl moieties.

Copper−N,P Ligand Complexes

Mixed N,P-donor complexes of copper(I) thiocyanate, [Cu(NCS)(py)$_2$(PPh$_3$)], [Cu(NCS)(Mepy)(PPh$_3$)]$_2$, [Cu(NCS)(phen)(PPh$_3$)], [Cu(NCS)(bpy)(PPh$_3$)], [Cu(NCS)(bpy)(PPh$_2$py)] and [Cu(NCS)(py)(PPh$_2$py)], were synthesized and their structural, spectroscopic and photoemission properties investigated.



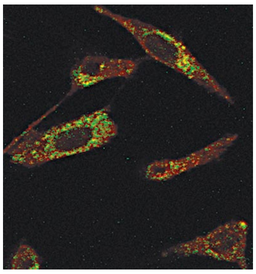
C. Pettinari,* C. di Nicola, F. Marchetti, R. Pettinari, B. W. Skelton, N. Somers, A. H. White, W. T. Robinson, M. R. Chierotti, R. Gobetto, C. Nervi .... **1974−1984**

Synthesis, Characterization, Spectroscopic and Photophysical Properties of New [Cu(NCS)(L-*N*)$_2$ or (L′-*N*^*N*)}(PPh$_3$)] Complexes (L-*N*, L′-*N*^*N* = Aromatic Nitrogen Base)

Keywords: Copper / Luminescence / N,P ligands / Structure elucidation / Electrochemistry

Imaging Agents

A new class of styrene-functionalised bis(thiosemicarbazonato)zinc(II) and -copper(II) complexes have been characterised as potential hypoxia-selective imaging agents for use in positron emission tomography.



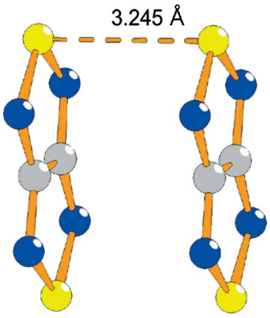
J. P. Holland,* P. J. Barnard, S. R. Bayly, H. M. Betts, G. C. Churchill, J. R. Dilworth,* R. Edge, J. C. Green,* R. Hueting .... **1985−1993**

Synthesis, Radiolabelling and Confocal Fluorescence Microscopy of Styrene-Derivatised Bis(thiosemicarbazonato)zinc and -copper Complexes

Keywords: Metal chelates / Radiopharmaceuticals / Density functional calculations / Hypoxia / Fluorescent probes

Radical Anion Salts

The title radical anion salt was prepared and characterized by X-ray diffraction. In the crystal the heterocyclic radical anions form diamagnetic π-dimers with shortened S···S contacts. According to CASSCF calculations, the largest contribution to the singlet ground state of these π-dimers is the closed-shell configuration, although a noticeable contribution of singlet biradical character was also found. Color code: gray = C, blue = N, yellow = S.



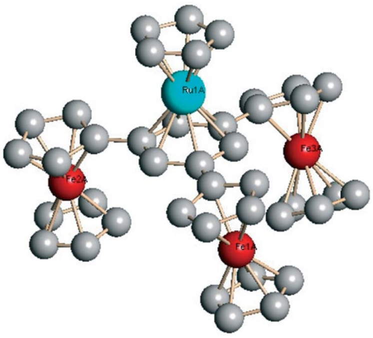
N. P. Gritsan,* A. V. Lonchakov, E. Lork, R. Mews,* E. A. Pritchina, A. V. Zibarev* .... **1994−1998**

Diamagnetic π-Dimers of the [1,2,5]-Thiadiazolo[3,4-*c*][1,2,5]thiadiazolidyl Radical Anion in the Crystalline State: Preparation and X-ray Crystal Structure of a [(Me$_2$N)$_2$CC(NMe$_2$)$_2$]$^{2+}$[(C$_2$N$_4$S$_2$)$_2$]$^{2-}$ Salt

Keywords: CASSCF calculations / DFT calculations / Sulfur−nitrogen heterocycles / Radical anions

Multisandwich Complexes

Dipolar tetra-sandwich complexes are prepared as novel NLOphores for second harmonic generation (SHG). The molecular structure displays a unique trigonal-pyramidal arrangement of the four sandwich units. A first hyperpolarizability *β*, although small, can be measured by means of femtosecond HRS experiments.



S. Steffens, M. H. Prosenc, J. Heck,* I. Asselberghs, K. Clays .... **1999−2006**

Trigonal-Pyramidal Tetra-Sandwich Complexes as 3D NLOphores

Keywords: Second harmonic generation / Tetranuclear sandwich complexes / 3D NLOphores / X-ray structure determination / Redox properties / Iron / Ruthenium

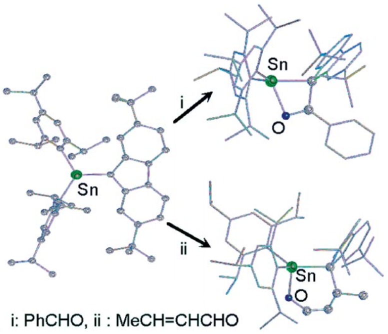
CONTENTS

A Stable Stannene

Abdoul Fatah, R. El Ayoubi, H. Gornitzka, H. Ranaivonjatovo,* J. Escudié* **2007–2013**

A Nearly Planar Stannene with a Reactive Tin–Carbon Double Bond

Keywords: Stannenes / Tin / Cycloaddition / Ene reaction



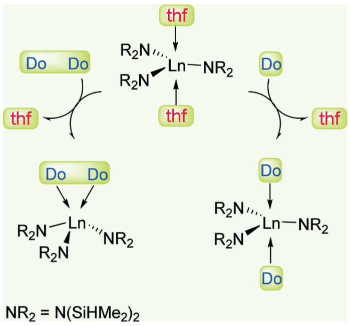
The isolable bis(2,4,6-triisopropylphenyl)-2,7-di-*tert*-butylfluorenylidene stannane, $Tip_2Sn{=}CR_2$, exhibits the shortest Sn=C distance [2.003(5) Å] and the slightest twisting (10°) among stannenes. It undergoes [2+2] cycloaddition with benzaldehyde, [2+4] cycloadditions with α-ethylenic aldehydes and ketones and an ene reaction with acetone.

M···H–Si Secondary Interactions

C. Meermann, G. Gerstberger, M. Spiegler, K. W. Törnroos, R. Anwander* **2014–2023**

Donor and *ate*-Coordination in Rare-Earth Metal Bis(dimethylsilyl)amide Complexes

Keywords: Rare-earth metals / Neodymium / Scandium / Silylamide



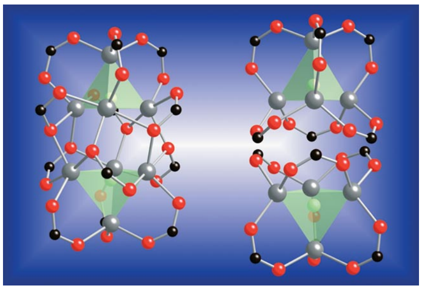
Monofunctional ($O{=}PPh_3$, *N*-MeIm, nhc) and bifunctional chelating donor molecules (phen, dmpe, tmeda) displace both thf ligands in $Ln[N(SiHMe_2)_2]_3(thf)_2$ (Ln = La, Nd) which sensitively affects the stereoelectronic properties of the Ln^{3+} centers as probed by the SiH functionality.

Interconverting Polyzinc Complexes

P. F. Haywood, M. R. Hill, N. K. Roberts, D. C. Craig, J. J. Russell, R. N. Lamb* **2024–2032**

Synthesis and Isomerisation Reactions of Tetranuclear and Octanuclear (Carbamato)-zinc Complexes

Keywords: Carbamato ligands / Chemical vapor deposition / Dialkylcarbamates / Isomerisation / Oxido ligands / Zinc



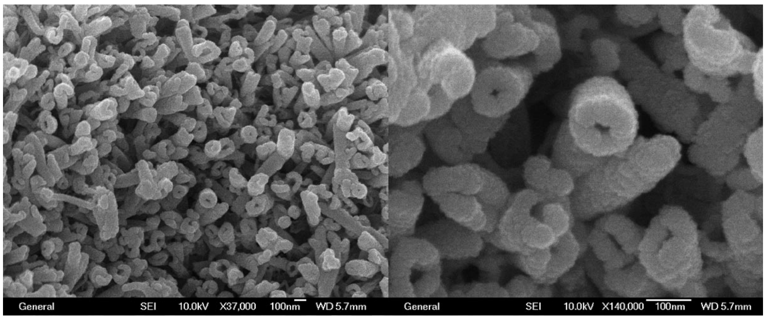
A new series of (diisopropylcarbamato)-(oxido)zinc complexes were obtained by innovative synthetic approaches. The complexes readily interconvert through a facile recrystallisation process. The subtle solvent effects discovered in this work may stimulate a re-examination of carbamate chemistry of other metals and offer a route to mixed-metal clusters.

Rare-Earth Nanomaterials

H. Li, G. Zhu,* H. Ren, Y. Li, I. J. Hewitt, S. Qiu* **2033–2037**

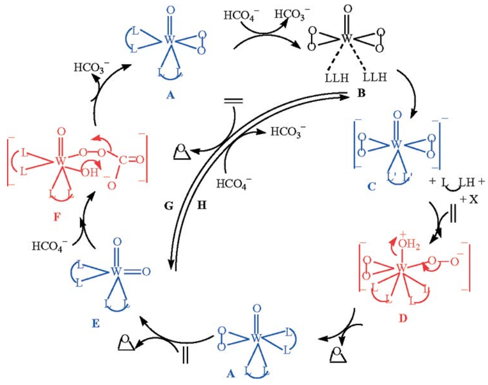
The Synthesis of Multiwalled Rare-Earth Phosphate Nanomaterials Using Organophosphates with Upconversion Properties

Keywords: Microporous materials / Organophosphonates / Nanomaterials / Rare earths



Several new multiwalled, microporous rare-earth phosphate nanofibers and nanotubes were synthesized by using tributylphosphate, an organophosphate, instead of phosphoric acid as the phosphorus source.

Homogeneous Catalysis



The synthesized complexes behave as excellent catalysts in the oxidation of various organic substrates in the presence of H_2O_2 as a terminal oxidant and show high yield, selectivity, TON, catalyst economy and cost-effectiveness.

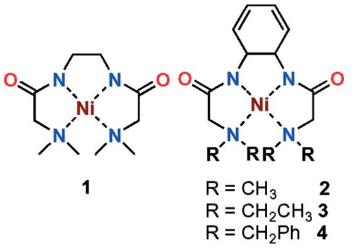
S. K. Maiti, S. Dinda, S. Banerjee, A. K. Mukherjee, R. Bhattacharyya* **2038–2051**

Oxidoperoxidotungsten(VI) Complexes with Secondary Hydroxamic Acids: Synthesis, Structure and Catalytic Uses in Highly Efficient, Selective and Ecologically Benign Oxidation of Olefins, Alcohols, Sulfides and Amines with H_2O_2 as a Terminal Oxidant

Keywords: Tungsten / Hydroxamic acid / Structure elucidation / Homogeneous catalysis / Epoxidation of alkenes / Oxidation of alcohols

Ni–Amide Chemistry

We show the syntheses of four open-chain amide-based ligands and their square-planar Ni^{II} complexes. The Ni^{II} complexes were characterized spectroscopically, structurally and electrochemically and were further used for substrate oxidation chemistry.

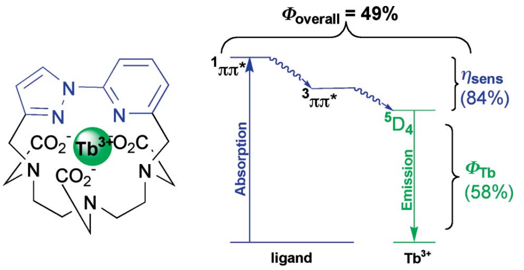


J. Singh, G. Hundal, R. Gupta* **2052–2063**

Studies on Nickel(II) Complexes with Amide-Based Ligands: Syntheses, Structures, Electrochemistry and Oxidation Chemistry

Keywords: Nickel / N ligands / Structure elucidation / Electrochemistry / Oxidation

Luminscent Tb^{III} Probes



We describe the synthesis of a polyacid macrocyclic ligand derived from the *N*,*C*-pyrazolylpyridine motif that efficiently bounds terbium(III) ions in aqueous solution and sensitizes the metal emission. Emission lifetime is in the range of milliseconds and the overall quantum yield is high.

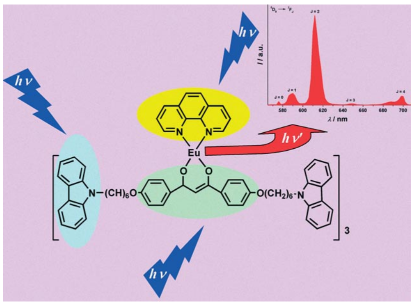
I. Nasso, S. Bedel, C. Galaup,* C. Picard* **2064–2074**

A Water-Stable and Strongly Luminescent Terbium(III) Macrocyclic Complex Incorporating an Intracyclic Pyrazolylpyridine Chromophore

Keywords: Lanthanides / Luminescent probes / Terbium / N ligands / Macrocyclic ligands

Multichromophoric Eu^{III} Complexes

Two multichromophoric Eu^{III} complexes exhibit efficient population of the Eu^{III} emitting states through energy transfer, which occurs mainly from appended carbazole units. Furthermore, the carbazole intrinsic charge-transporting capability makes such molecules potentially interesting for the fabrication of electroluminescent devices.



Y. Zheng, F. Cardinali, N. Armaroli, G. Accorsi* **2075–2080**

Synthesis and Photoluminescence Properties of Heteroleptic Europium(III) Complexes with Appended Carbazole Units

Keywords: Europium / Photoluminescence / Carbazoles / Chromophores

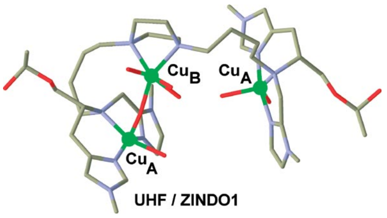
CONTENTS

Trinuclear Copper Complexes

M. Gullotti, L. Santagostini, R. Pagliarin, S. Palavicini, L. Casella,* E. Monzani, G. Zoppellaro .... 2081−2089

Ligand Binding, Conformational and Spectroscopic Properties, and Biomimetic Monooxygenase Activity by the Trinuclear Copper−PHI Complex Derived from L-Histidine

Keywords: Enzyme models / Trinuclear copper complexes / Ligand binding / EPR spectroscopy / Monooxygenase activity



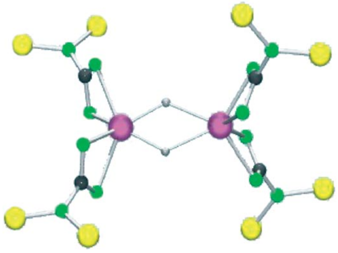
The conformational and ligand binding properties of the trinuclear copper(II) complex of the octadentate, chiral ligand PHI were characterized by several spectroscopic techniques. The corresponding trinuclear copper(I) complex exhibits biomimetic monooxygenase activity towards phenolic substrates.

Post-Metallocene Lanthanide Hydrides

D. M. Lyubov, A. M. Bubnov, G. K. Fukin, F. M. Dolgushin, M. Yu. Antipin, O. Pelcé, M. Schappacher, S. M. Guillaume,* A. A. Trifonov* .... 2090−2098

Hydrido Complexes of Yttrium and Lutetium Supported by Bulky Guanidinato Ligands $[Ln(\mu\text{-}H)\{(Me_3Si)_2NC(NCy)_2\}_2]_2$ (Ln = Y, Lu): Synthesis, Structure, and Reactivity

Keywords: Rare earths / Alkyl complexes / Hydrido complexes / Guanidinato ligands / Polymerization / Hydrosilylation



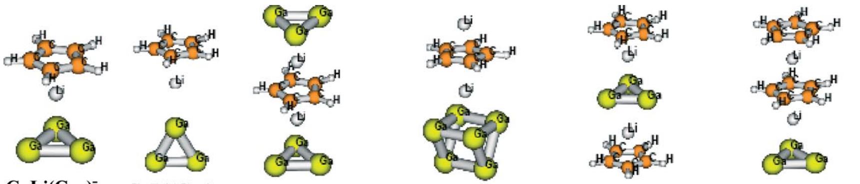
Synthesis, structures and properties of Lewis base free hydrido complexes of yttrium and lutetium supported by bulky cyclohexyl-substituted guanidinato ligands, $[Ln(\mu\text{-}H)\{(Me_3Si)_2NC(NCy)_2\}_2]_2$ (Ln = Y, Lu) are reported.

Heterodecked Sandwich Complexes

L.-m. Yang, X.-p. Li, Y.-h. Ding,* C.-c. Sun .... 2099−2106

Theoretical Study on a Class of Organometallic Complexes Based on All-Metal Aromatic Ga_3^- Through Sandwiching Stabilization

Keywords: Sandwich complexes / Gallium / Density functional calculations / Cluster compounds



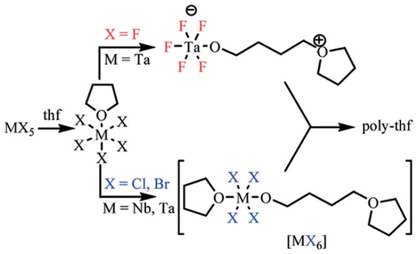
We predict the assembly and stabilization of the all-metal aromatic unit Ga_3^- on the basis of density functional calculations on a series of model compounds $[DM(Ga_3)]^{q-}$ as well as the saturated compounds $[DM_n(Ga_3)^-]$ [D = Ga_3^-, $Cp^-(C_5H_5^-)$; M = Li, Na, K, Be, Mg, and Ca] and the more extended sandwich-like species. Only Ga_3^- can be assembled in our recently proposed "*heterodecked sandwich*" scheme.

thf Polymerization

F. Marchetti, G. Pampaloni,* T. Repo .... 2107−2112

The Polymerization of Tetrahydrofuran Initiated by Niobium(V) and Tantalum(V) Halides

Keywords: Niobium / Tantalum / Halides / Poly(tetrahydrofuran) / Polymerization



The polymerization of tetrahydrofuran (thf) promoted by niobium and tantalum pentahalides occurs through different pathways for X = F and X = Cl, Br. The activities of the initiators increase according to the polarization of the metal−halide bond.

CORRECTION