

# Contents

## VOLUME I

Ab Initio Calculations	1	<b>Ammonolysis</b>	<b>236</b>
Acceptor Level	1	Ammoxidation	236
<b>Acetogen</b>	1	Amphoterism	236
Acid Catalyzed Reaction	1	Analytical Chemistry of the Transition Elements	236
n-Acid Ligand	1	<b>Ancillary Ligand</b>	<b>248</b>
Acidity Constants	1	Anderson Localization	248
Acidity: Pauling's Rules	2	Angular Overlap Model	248
Acids & Acidity	2	Anion	249
Actinides: Inorganic & Coordination Chemistry	2	Antiaromatic Compound	249
<b>Actinides: Organometallic Chemistry</b>	<b>33</b>	Antibonding	250
<b>Activated Complex</b>	<b>59</b>	Antiferromagnetism	250
Activation	59	Antigen	250
Activation Parameters	59	Antimony: Inorganic Chemistry	250
Activation Volume	60	<b>Antimony: Organometallic Chemistry</b>	<b>258</b>
Active Site	60	<b>Antioxidant</b>	<b>266</b>
Adamson's Rules	60	Antiport	266
Addition Compound	60	Antistructure	266
Agostic Bonding	60	Antitumor Activity	266
Alkali Metals: Inorganic Chemistry	61	Apoprotein	266
<b>Alkali Metals: Organometallic Chemistry</b>	<b>84</b>	Aqua	267
<b>Alkalides</b>	<b>94</b>	Arachno Cluster	267
Alkaline Earth Metals: Inorganic Chemistry	94	Arbuzov Rearrangement	267
<b>Alkaline Earth Metals: Organometallic Chemistry</b>	<b>116</b>	Archaea	267
<b>Alkane Carbon-Hydrogen Bond Activation</b>	<b>147</b>	Arene Complexes	267
<b>Alkene Complexes</b>	<b>153</b>	Arsenic: Inorganic Chemistry	268
Alkene Metathesis	154	<b>Arsenic: Organoarsenic Chemistry</b>	<b>288</b>
Alkene Polymerization	154	<b>Arsine &amp; As-donor Ligands</b>	<b>308</b>
Alkoxy carbonylation	154	Associative Substitution	309
Alkyl Complexes	154	Asymmetric Synthesis	309
Alkyl Migration	154	Asymmetric Synthesis by Homogeneous Catalysis	309
Alkylidene	155	<b>Asymmetric Unit</b>	<b>332</b>
Alkylidyne	155	Ate Complexes	332
Alkyne Complexes	155	Atom Transfer	332
Alkyne Metathesis	155	Atomic Mass	332
Allostereism	155	Atomic Number	332
Allotrope	156	Atomization Enthalpy of Metals	332
Alloys	156	Atoms & Ions	333
<b>Allyl Complexes</b>	<b>169</b>	Aufbau Principle	333
Alpha Helix	170	Auger Spectroscopy	333
Alumina	170	Autoprotolysis	334
Aluminum: Inorganic Chemistry	170	Autoxidation	334
<b>Aluminum: Organometallic Chemistry</b>	<b>185</b>	Back Bonding	335
<b>Ambidentate Ligand</b>	<b>210</b>	Bacteria	335
Amide (Amido) Complexes	210	Bailar Twist	335
Ammonia & N-donor Ligands	210	Band Gap	336
		Band Theory	336
		$\pi$ -Base	336

BCS Theory	336	<b>VOLUME II</b>	
Becquerel	337		
Bent Metallocenes	337		
Berry Pseudorotation	337		
Beryllium: Inorganic Chemistry	337		
Beryllium & Magnesium: Organometallic Chemistry	<b>342</b>	C-Terminus	603
Beta Sheet	<b>369</b>	Cadmium: Inorganic & Coordination Chemistry	603
Beta Turn	369	Cadmium: Organometallic Chemistry	620
Bidentate Ligand	370	Cage Effect	630
Binary Compounds	370	Calcium-binding Proteins	630
Binding Energy of Nuclei	370	Calixarenes	666
Bioavailability	370	Carbanion	666
Bioconjugate Chemistry	370	Carbene Complexes	666
Bioinformatics	370	Carbides: Transition Metal Solid-state Chemistry	674
Bioinorganic Chemistry	370	Carbocation	690
Biomimesis	371	Carbometalation	690
Biomimetic Synthesis of Nanoparticles	371	Carbon-Carbon & Carbon-Heteroatom Activation	690
Biom mineralization	<b>391</b>	Carbon: Fullerenes	696
Biosynthesis	<b>404</b>	Carbon: Inorganic Chemistry	718
Biphasic Process	404	Carbon: Nanotubes	730
Bismuth: Inorganic Chemistry	404	Carbonyl Complexes of the Transition Metals	764
Bismuth: Organometallic Chemistry	<b>425</b>	Carbonyl Compound	781
Bite Angle	<b>440</b>	Carbonylation	781
Bleomycin	440	Carbonylation Processes by Homogeneous Catalysis	781
6-Bond	440	Carborane	814
n-Bond	441	Carbyne Complexes	814
a-Bond	441	Catalase	815
a-Bond Complexes	441	Catalysis	815
Bond Dissociation Energy	441	Catenation	815
Bond Energies	442	Cation	815
Bond Length	445	Cation-activated Enzymes	815
Bond Lengths in Inorganic Solids & Liquids	446	Ceramic Material	824
a-Bond Metathesis	<b>452</b>	Ceramics	824
Bond Multiplicity	452	Chalcogenides: Solid-state Chemistry	825
Bond Order	452	Chalcogens	863
Bond Valence Method	453	Chalcophiles	864
Bonding Energetics of Organometallic Compounds	453	Charge Carrier	864
Borates: Solid-state Chemistry	<b>472</b>	Charge Controlled Reactions	864
Borazine	<b>481</b>	Charge Density Wave	864
Borides: Solid-state Chemistry	481	Charge Transfer	864
Born-Haber Cycle	<b>494</b>	Chauvin Mechanism	864
Boron Hydrides	494	Chelate Effect	865
Boron: Inorganic Chemistry	<b>499</b>	Chelating Ligands	865
Boron: Metallacarboranes	<b>524</b>	Chelation Therapy	865
Boron: Metalloboranes	<b>544</b>	Chemical Bonding	865
Boron-Nitrogen Compounds	544	Chemical Vapor Deposition	865
Boron: Organoboranes	<b>560</b>	Chevrel Phases	865
Boron: Polyhedral Carboranes	<b>598</b>	Chimie Douce	866
Borosilicate Glass	<b>601</b>	Chiral	866
Bridging Ligand	601	Chiral Auxiliary	866
Brillouin Zone	602	Chlorine, Bromine, Iodine, & Astatine: Inorganic Chemistry	866
Buckminsterfullerene	602	Chlorophyll	887
		Chloroplast	887
		Chromium: Biological Relevance	888
		Chromium: Inorganic & Coordination Chemistry	893
		Chromium: Organometallic Chemistry	907
		Chromocene	925

Class A & Class B Behavior	925	Counter Ions	1226
<b>Clathrate</b>	925	Counting Electrons	1226
Clay Minerals	925	Coupling	1226
Close Packing	925	Covalent Bonds	1226
Closo Cluster	925	Covalent Radii	1227
Cluster	926	Crabtree's Catalyst	1227
Cluster Compounds: Inorganometallic Compounds		Creutz–Taube Complex	1227
Containing Transition Metal & Main Group		Crossover Experiment	1227
Elements	926	Crown Ethers	1227
<b>CNDO Calculations</b>	947	Cryptands & Cryptates	1227
CO Insertion	947	Crystal Field Stabilization Energy	1228
Coalescence Temperature	947	Crystal Field Theory	1228
Cobaloxime	947	Crystal Orbital Overlap Population Curve	1229
Cobalt: B <sub>12</sub> Enzymes & Coenzymes	947	Crystal Orbitals	1229
<b>Cobalt: Inorganic &amp; Coordination Chemistry</b>	<b>967</b>	Crystal Structures	1230
<b>Cobalt: Organometallic Chemistry</b>	<b>991</b>	Crystallographic Radius	1230
<b>Cobaltocene</b>	<b>1027</b>	Crystallographic Shear	1230
Coenzyme	1027	Cupferron	1230
Collman's Reagent	1028	Cupredoxin	1230
Color	1028	Curie	1230
Common Anion Rule	1028	Curie Constant	1230
Competitive Inhibition	1028	Curie Temperature	1231
Compound Semiconductor	1028	Cyanide Complexes of the Transition Metals	1231
Condensation	1029	<b>Cyanides</b>	<b>1241</b>
Conduction Band	1029	Cyclodextrins	1241
Conduction Band Edge	1029	Cyclodimerization & -trimerization Reactions	1241
Cone Angle	1029	Cyclometalation	1242
Configuration Interaction	1029	Cyclopentadienyl	1242
Cooper Pair	1029	Cymantrene	1242
Cooperativity	1030	Cytochrome Oxidase	1242
Coordination Chemistry: History	1030	<b>Cytotoxicity</b>	<b>1254</b>
<b>Coordination Complexes</b>	<b>1053</b>		
Coordination Geometries	1053		
Coordination Isomers	1053		
Coordination Numbers & Geometries	1054		
<b>Coordination &amp; Organometallic Chemistry:</b>			
<b>Principles</b>	<b>1065</b>		
<b>Coordination Theory</b>	<b>1081</b>		
Coordinative Saturation & Unsaturation	1081	d <sup>n</sup> Configuration	1255
Coordinatively Inert & Labile Complexes	1081	d–d Transitions	1255
Copper Enzymes in Denitrification	1081	d-Orbitals	1255
<b>Copper: Hemocyanin/Tyrosinase Models</b>	<b>1091</b>	Dangling Bonds	1255
<b>Copper: Inorganic &amp; Coordination Chemistry</b>	<b>1100</b>	Davies–Green–Mingos Rules	1256
<b>Copper: Organometallic Chemistry</b>	<b>1119</b>	Deaminase	1256
<b>Copper Proteins: Oxidases</b>	<b>1134</b>	Decarbonylation Catalysis	1256
<b>Copper Proteins with Dinuclear Active Sites</b>	<b>1159</b>	<b>Defects in Solids</b>	<b>1262</b>
<b>Copper Proteins with Type 1 Sites</b>	<b>1173</b>	<b>Degenerate Process</b>	<b>1281</b>
<b>Copper Proteins with Type 2 Sites</b>	<b>1201</b>	Dehydratase	1281
<b>Corands</b>	<b>1225</b>	Dehydrogenase	1281
Core Orbitals	1225	Delocalized Bonding	1281
Correlation Diagram	1225	Deltahedron	1281
Cossee–Arlman Mechanism	1225	Density Functional Theory	1281
Cotton Effect	1226	Density of States	1282
Cotton–Kraihanzel Force Field	1226	Derivative Structure	1282
Coulombic Interaction	1226	Descent in Symmetry	1282
		Deuterium	1282
		Deuteron	1282
		Dewar–Chatt–Duncanson Bonding Model	1282

### VOLUME III

Ferromagnetic Insulator	1533	Haptomers	1762
Ferromagnetism	1533	Hard & Soft Acids and Bases	1762
Ferroxidase	1533	<b>Hartree–Fock Theory</b>	<b>1766</b>
Field Ion Microscopy	1534	Heck Arylation	1767
<b>Fischer–Hafner Synthesis</b>	<b>1534</b>	Heck Reaction	1767
Fischer–Tropsch Process	1534	Heitler–London Wavefunction	1767
<b>Fischer-type Carbene Complexes</b>	<b>1534</b>	Heme Proteins	1767
Fischer-type Carbyne Complexes	1535	Heptadentate	1767
<b>Fissile Isotope</b>	<b>1535</b>	Heterogeneous Catalysis by Metals	1768
Fission Product	1535	<b>Heterogenized Catalyst</b>	<b>1784</b>
Flash Photolysis	1535	Heteroleptic Compound	1784
Fluorescence	1535	Heterolytic Cleavage	1784
Fluorides: Solid-state Chemistry	1535	Hexadentate	1784
<b>Fluorine: Inorganic Chemistry</b>	<b>1561</b>	High Performance Liquid Chromatography	1784
<b>Fluorocarbons: Organometallic Derivatives</b>	<b>1585</b>	High Pressure Synthesis of Solids	1785
Fluxional Molecule	1585	<b>High Resolution Electron Energy Loss Spectroscopy</b>	<b>1800</b>
Force Constant	1585	High-spin & Low-spin Compounds	1800
Formal Charge	1586	High-temperature Limit	1801
Formal Oxidation State	1586	High-temperature Superconductivity	1801
Fourier Transform Infrared Spectroscopy	1586	Holes	1801
Fragment Orbitals	1586	Holoprotein	1802
Free Electron Theory	1586	Homeostasis	1802
<b>Frenkel Defects</b>	<b>1587</b>	HOMO	1802
Frequency Factored Force Field	1587	HOMO–LUMO Gap	1802
Frontier Orbitals	1587	Homoleptic Compound	1802
Fuoss–Eigen Equation	1587	Homologation Reactions	1802
g-Factor	1589	Homolytic Cleavage	1802
Gallium: Inorganic Chemistry	1589	Hot-atom Chemistry	1802
<b>Gallium: Organometallic Chemistry</b>	<b>1621</b>	Hückel Theory	1803
<b>Gene</b>	<b>1629</b>	Hund's Rules	1804
Gene Expression	1629	Hybridization	1804
Genetic Engineering	1629	Hydrated Electron	1804
Genetic Regulation	1629	Hydrated Ions	1804
<b>Germanium: Inorganic Chemistry</b>	<b>1630</b>	Hydrates	1805
<b>Germanium: Organometallic Chemistry</b>	<b>1650</b>	Hydrazides	1805
<b>Gibbs Energy</b>	<b>1673</b>	Hydride Complexes of the Transition Metals	1805
Glycoprotein	1673	<b><math>\beta</math>-Hydride Elimination</b>	<b>1813</b>
Gold: Inorganic & Coordination Chemistry	1673	Hydrides	1813
<b>Gold: Organometallic Chemistry</b>	<b>1688</b>	Hydrides: Solid State Transition Metal Complexes	1814
<b>Grain Boundary</b>	<b>1698</b>	<b>Hydroboration</b>	<b>1846</b>
Greenhouse Effect	1698	Hydroboration Catalysis	1847
Green–Rooney Mechanism	1698	<b>Hydrocarbyl</b>	<b>1855</b>
Grignard Reagents	1698	Hydrocyanation	1855
Ground State	1698	Hydrocyanation by Homogeneous Catalysis	1855
Group 14 Multiple Bonding	1698	<b>Hydrodesulfurization &amp; Hydrodenitrogenation</b>	<b>1860</b>
<b>Group Numbering System</b>	<b>1739</b>	<b>Hydroformylation</b>	<b>1877</b>
Group Theory	1739	Hydrogen Bonding	1877
Grover Process	1741	Hydrogen Bonding & Dihydrogen Bonding	1878
Half-sandwich Complexes	1741	<b>Hydrogen: Inorganic Chemistry</b>	<b>1882</b>
Halides: Solid-state Chemistry	1741	<b>Hydrogenase</b>	<b>1906</b>
<b>Hall–Herault Process</b>	<b>1761</b>	Hydrogenation	1906
Halocarbons & Halocarbon Complexes	1761	Hydrogenation & Isomerization of Alkenes	1907
Haloperoxidases	1761	<b>Hydrometalation</b>	<b>1925</b>
Helicity	1761	Hydron	1926

Hydronium Ion	1926	Iron: Models of Proteins with Dinuclear Active Sites	2295
Hydrophilicity	1926	Iron: Organometallic Chemistry	2307
Hydrophobicity	1926	Iron Porphyrin Chemistry	2390
Hydrosilation	1926	Iron Proteins for Storage & Transport & their Synthetic Analogs	2521
Hydrosilation Catalysis	<b>1938</b>	Iron Proteins with Dinuclear Active Sites	2542
Hydrozirconation	1938	Iron Proteins with Mononuclear Active Sites	2557
Hyperconjugation	1938	Iron-Sulfur Models of Protein Active Sites	2578
Hypercoordination	1938	Iron-Sulfur Proteins	2589
Hypervalent Compounds		Iron Transport: Siderophores	2619
		Irving-Williams Series	2646
		Isocarbonyl Complexes	2646
		Isocyanide Ligands	2646
	<b>1961</b>	Isoelectronic	2647
Icosahedron	1961	Isolobal Analogy	2647
Imide Complexes	1961	Isomer Shift	2647
Immunochemistry	1961	Isomer, Types of	2647
In Situ Reaction	1961	Isomorphous	2647
Incommensurate Structure	1961	Isosbestic Point	2648
Indirect Band Gap	1961	Isosteric Groups	2648
Indium: Inorganic Chemistry	1962	Isotope Effect	2648
Indium: Organometallic Chemistry	<b>1979</b>	Isotopes & Isotope Labeling	2648
Inert Pair Effect	<b>2027</b>	Isotopic Perturbation of Resonance	2649
Infrared Reflection Adsorption Spectroscopy	2027	Isotopomer	2649
Infrared Spectroscopy	2027		
Inhibition Constant	2027		
Inhibitor	2027		
Inner-sphere Reaction	2028		
Inorganic Heterocycle	2028		
Inorganic Ring Systems	2028		
Insertion	<b>2055</b>		
Insulator	2056	Jahn-Teller Effect	2651
Intercalation Chemistry	2056	Kaminsky Catalysts	2655
Interchange Mechanism of Substitution	<b>2092</b>	Kapustinskii Equation	2655
Intergrowth Structures	2092	Kinetic Lability	2655
Intermetallics	2092	Kinetic Methods	2655
Intermolecular	2092	Kinetic Stability	2655
Intersystem Crossing	2093	Klechkowsky's Rule	2656
Intervalence Transfer Transition	2093	Koopman's Theorem	2656
Intramolecular	2093	Labile	2657
Ion Exchange	2093	Lanthanide Contraction	2657
Ion Pairing	2093	Laporte Rule	2657
Ionic Bonds	2093	Latimer Diagrams	2657
Ionic Character	2093	Lattice Energy	2657
Ionic Conductors	2094	LCAO Approximation	2658
Ionization Potential	<b>2127</b>	Lead: Inorganic Chemistry	2658
Iridium: Inorganic & Coordination Chemistry	2130	Lead: Organometallic Chemistry	<b>2671</b>
Iridium: Organometallic Chemistry	<b>2148</b>	Leaving Group	<b>2680</b>
Iron: Heme Proteins & Dioxygen Transport & Storage	<b>2167</b>	Leveling Effect	2680
Iron: Heme Proteins & Electron Transport	<b>2180</b>	Lewis Acids & Bases	2680
Iron: Heme Proteins, Mono- & Dioxygenases	<b>2200</b>	Lifetime Broadening	2680
Iron: Heme Proteins, Peroxidases, Catalases & Catalase-peroxidases	<b>2229</b>	Ligand	2681
Iron: Inorganic & Coordination Chemistry	<b>2250</b>	Ligand Field Theory	2681
		Ligand Field Theory & Spectra	2681
		Ligand Substitution	<b>2700</b>
		Ligand-to-Metal Charge Transfer	2700

## VOLUME V

Lime	2700	Metal-mediated Protein Modification	<b>3052</b>
Linkage Isomerism	2700	Metal Nanoparticles, Organization & Applications of	<b>3065</b>
Liquid Crystal	2701	Metal Nanoparticles, Synthesis of	<b>3083</b>
Lithophiles	2701	Metal–Organic Chemical Vapor Deposition	<b>3096</b>
Localized Bonding	2701	Metal-related Diseases of Genetic Origin	3096
Localized & Delocalized Orbital Descriptions	2701	Metal Storage	<b>3109</b>
Lone Pair	2702	Metal Vapor Synthesis of Transition Metal Compounds	3110
Long-range Electron Transfer in Biology	2702	Metallacycle	<b>3121</b>
Low Coordinated Group 13 Chelates	<b>2714</b>	Metallic Bonding	3121
Low-energy Electron Diffraction	<b>2718</b>	Metallic Materials Deposition: Metal-organic Precursors	3121
Low Oxidation State Main Group	2718	Metallocene Complexes	<b>3144</b>
Low Temperature Limit	<b>2730</b>	Metallocenter Biosynthesis & Assembly	3144
Luminescence	2730	Metallochaperones & Metal Ion Homeostasis	<b>3152</b>
Luminescence Behavior & Photochemistry of Organotransition Metal Compounds	<b>2748</b>	Metalloid	<b>3158</b>
LUMO	<b>2779</b>	Metallole	3158
		Metalloporphyrin	3159
Macrocycle	2781	Metalloprotein	3159
Macrocyclic Ligands	2781	Metalloprotein Design & Engineering	3159
<b>Madelung</b> Constant	<b>2800</b>	Metalloreulation	<b>3193</b>
Magnetic Circular Dichroism	2801	Metallothioneins	<b>3208</b>
Magnetic Oxides	2801	Metals	<b>3221</b>
Magnetic Susceptibility	<b>2836</b>	Metathesis	3221
Magnetism of Extended Arrays in Inorganic Solids	2836	Metathesis Polymerization Processes by Homogeneous Catalysis	3222
Magnetism of Transition Metal Ions	<b>2859</b>	Methanogen	<b>3233</b>
Magnetochemistry	<b>2869</b>	Michaelis Constant	3233
Main Group Carbenes	2870	Michaelis–Menten Kinetics	3233
Main Group Elements	<b>2888</b>	Microstates	3233
Main Group: Multiple Bonding	2888	Microwave Spectroscopy	3233
Manganese: Inorganic & Coordination Chemistry	<b>2894</b>	Migratory Insertion	3233
Manganese: Organometallic Chemistry	<b>2907</b>	Mineralogy	3234
Manganese Proteins with Mono- & Dinuclear Sites	<b>2922</b>	Mineralomimetic	3234
Manganese: The Oxygen-evolving Complex & Models	<b>2932</b>	Mixed Donor Ligands	3234
Marcus Equation	<b>2947</b>	Mixed Oxidation States	<b>3255</b>
Marcus Treatment	2947	Mixed Valence Compounds	3255
Mass Defect	2947	Mixed Valence Compounds, Classification	<b>3267</b>
Mass Spectrometry	2948	Moh's Hardness	3268
Matrix Isolation	2948	Molecular Beam Epitaxy	3268
Mechanisms of Reaction of Organometallic Complexes	2948	Molecular Biology	3268
Melanins	<b>2968</b>	Molecular Mechanics	3268
Membrane	2968	Molecular Orbital Stabilization Energy	3268
Mercury: Inorganic & Coordination Chemistry	2968	Molecular Orbital Theory	3269
Mercury: Organometallic Chemistry	<b>2983</b>	Molecular Orbitals	<b>3292</b>
Mercury Photosensitization	<b>2992</b>	Molybdenum: Inorganic & Coordination Chemistry	3293
Metabolism	2992	Molybdenum: MPT-containing Enzymes	<b>3321</b>
Metal Analysis	2992	Molybdenum: Organometallic Chemistry	<b>3340</b>
Metal-based Drugs	2992	Mond Process	<b>3358</b>
Metal-based Imaging Agents	<b>3020</b>	Monodentate Ligand	3358
Metal Carbonyl Clusters	<b>3040</b>	Monooxygenase	3358
Metal Carbonyls	3040	Monophenolase	3358
Metal Clusters	3040	Monsanto Acetic Acid Process	3359
Metal–Insulator Transitions	3040	Mossbauer Spectroscopy	3359
Metal Ion Toxicity	3041		

## VOLUME VII

$\pi$ - $d_{\pi}$ Bonding	4101	Podandocoronands	4543
$\sigma$ -donor Ligands	4101	Podands	4543
<b>Orbitals</b>	<b>4128</b>	Polar Bonds	4543
<b>Platinum: Inorganic &amp; Coordination Chemistry</b>	<b>4128</b>	Polar Compounds	4543
<b>Platinum: Organometallic Chemistry</b>	<b>4147</b>	Polarizability	4544
<b>Paramagnetic Organometallic Complexes</b>	<b>4188</b>	Polaron	4544
<b>Paramagnetism</b>	<b>4200</b>	Polonium: Inorganic Chemistry	4544
<b>Pauli Principle</b>	<b>4200</b>	Polonium: Organometallic Chemistry	<b>4551</b>
<b>Pauling's Rules</b>	<b>4201</b>	Polyacrylamide Gel Electrophoresis	<b>4554</b>
<b>Paulson-Khand Reaction</b>	<b>4201</b>	Polyhedra	4554
<b>Pearson Symbols</b>	<b>4201</b>	Polyhydride	<b>4557</b>
<b>Peierls Distortion</b>	<b>4201</b>	Polymer	4558
<b>Pendant Groups</b>	<b>4202</b>	Polymerase Chain Reaction	4558
<b>Pentadentate Ligand</b>	<b>4202</b>	Polymerization	4558
<b>Pentadienyl Ligand</b>	<b>4202</b>	Polymorph	4558
<b>Pentagonal Bipyramid</b>	<b>4202</b>	Polynuclear Complexes	4558
<b>Peptide Bond</b>	<b>4202</b>	Polynuclear Organometallic Cluster Complexes	4558
<b>Peptide-Metal Interactions</b>	<b>4202</b>	Polyoxometalates	<b>4575</b>
<b>Periodic Table</b>	<b>4216</b>	Polypeptide	<b>4586</b>
Periodic Table: Historical Aspects	4216	Polyphosphazenes	4586
Periodic Table: Trends in the Properties of the Elements	<b>4226</b>	Polyprotic Acid	<b>4593</b>
Peroxidases	<b>4239</b>	Polysiloxanes & Polysilanes	4593
Peroxide	4239	Porous Inorganic Materials	<b>4611</b>
Peroxo Complexes	4239	Porphyrin	<b>4631</b>
<b>Perturbation Theory</b>	<b>4239</b>	Post-Translational Modification	4631
Phase Diagram	4240	Pourbaix Diagram	4632
Phase Rule	4240	Primary Structure	4632
Phase Transfer Catalyst	4240	Prokaryote	4632
Phosphates: Solid-state Chemistry	4240	Prosthetic Group	4632
Phosphazenes	<b>4255</b>	Protein Determination	4633
Phosphides: Solid-state Chemistry	4255	Protein Structure by NMR	4633
Phosphorescence	<b>4308</b>	Proton	4633
Phosphorus: Inorganic Chemistry	4308	Proton Coupled Electron Transfer	4633
Phosphorus-Nitrogen Compounds	<b>4329</b>	Protonation	4634
Phosphorus: Organophosphorus Chemistry	<b>4355</b>	Protoporphyrin	4634
Photochemistry	<b>4373</b>	Prussian Blue	4634
Photochemistry of Transition Metal Complexes	4373	Pseudohalide	4634
Photochemistry of Transition Metal Complexes: Theory	<b>4418</b>	Pseudorotation	4634
Photochromism	<b>4432</b>	Pulse Radiolysis	4634
Photoconductivity	4432	Purex Separation Scheme	4635
Photoelectron Spectroscopy of Transition Metal Systems	4432	Quadridentate Ligand	4637
Photosensitization	<b>4459</b>	Quadrupolar	4637
Photosynthesis	4459	Quantum Dots	4637
Photosystem I	<b>4487</b>	Quantum Mechanical Tunneling	4637
Piano Stool Structure	4487	Quantum-size Effect	4637
Picolinic Acid	4487	Quantum Yield	4637
Platinum-based Anticancer Drugs	4488	Quasicrystals	4638
Platinum: Inorganic & Coordination Chemistry	<b>4499</b>	Racah Parameter	<b>4641</b>
Platinum: Organometallic Chemistry	<b>4507</b>	Radiation Chemistry	4641
Pnictide	<b>4543</b>	Radicals	4641
		Radioactive Decay	4641
		Radioisotope Generators	4641
		Raft Clusters	4642
		Raman Spectroscopy	4642

Stability Constants & their Determination	5261	Thallium: Organometallic Chemistry	<b>5569</b>
Staudinger Reaction	<b>5269</b>	Thermite Reaction	<b>5581</b>
Steady-state Kinetics	5269	Thermochromism	5581
Steam-reforming Process	5269	Thermodynamics: Laws	5581
Stereochemical Nonrigidity of Organometallic Complexes	5270	Thermogravimetric Analysis	5581
Stereochemistry	<b>5303</b>	Thin Film Synthesis of Solids	5582
Stereolability	5303	Thiocarbonyl	<b>5589</b>
Stereoselectivity	5303	Thiometalates	5589
Steric Effect	5303	Thionitrosyl	5590
Steric Requirement	5304	Thiourea	5590
Steric Saturation or Unsaturation	5304	Three-center Bond	5590
Stille Coupling	5304	Tight-binding Approximation	5590
Stoner Criterion	5304	Timescale	5590
Structure & Property Maps for Inorganic Solids	5305	Tin: Inorganic Chemistry	5590
Strukturbericht Symbols	<b>5323</b>	Tin: Organometallic Chemistry	<b>5605</b>
Substrate	5324	Titanium: Inorganic & Coordination Chemistry	<b>5634</b>
Subunit	5324	Titanium: Organometallic Chemistry	<b>5644</b>
Subvalent Compounds	5325	Titanocene	<b>5674</b>
Sulfur: Inorganic Chemistry	<b>5342</b>	Tolman's Cone Angle	5674
Sulfur-Nitrogen Compounds	<b>5378</b>	Topotactic	5674
Sulfur: Organic Polysulfanes	<b>5403</b>	Trace Element	5674
Sum Frequency Generation	<b>5435</b>	Trans Effect	5674
Superacid	5435	Trans Influence	5674
Superconductivity	5435	Transannular Bonding	5675
Superconductivity in Solids	<b>5448</b>	Transcription Factor	5675
Superexchange	5448	Transition Metal Carbonyls: Infrared Spectra	5675
Superoxide	5448	Transition Metal Complexes with Bulky <b>Allyl</b> Ligands	<b>5690</b>
Superoxide Dismutase	5449	Transition Metals	<b>5695</b>
Supported Organotransition Metal Compounds	5449	Transmetalation	5695
Surface Enhanced <b>Raman</b> Scattering	<b>5458</b>	Transmission Electron Microscopy	5696
Surface States	5458	Tribology	5696
Surfaces	5458	Tridentate Ligand	5696
<b>Suzuki</b> Coupling	<b>5483</b>	Trigonal Bipyramidal	5696
Symmetry Adapted Linear Combinations	5483	Trigonal Prism	5696
Symmetry Point Groups	5485	Triple-decker Sandwich	5696
Symport	<b>5488</b>	Triplet State	5697
Synergic Bonding	5488	Tripodal Ligand	5697
Synthesis Gas	5488	Tris(pyrazolyl)borates	5697
		Tritium	5697
		Tungsten: Inorganic & Coordination Chemistry	5697
		Tungsten: Organometallic Chemistry	<b>5722</b>
		Tungsten Proteins	<b>5743</b>
		Turnover	<b>5751</b>
		Turnstile Mechanism	5751
		Uniport	5753
		Uranocene	5753
		UV-Visible Spectroscopy	5753
		Vacant Site	5755
		Valence Band	5755
		Valence Band Edge	5755
		Valence Bond Theory	5755
		Valence Orbitals	5755
		Valence Shell Electron Pair Repulsion Model	5755
<b>VOLUME IX</b>			
$T_1$ Method	5489		
Tanabe-Sugano Diagram	5489		
Tebbe's Reagent	5490		
Technetium: Organometallic Chemistry	5490		
Technetium & Rhenium: Inorganic & Coordination Chemistry	<b>5499</b>		
Tellurium: Inorganic Chemistry	<b>5516</b>		
Tellurium: Organotellurium Chemistry	<b>5539</b>		
Templating	<b>5557</b>		
Tetradentate Ligand	5557		
Tetrahedral	5557		
Thallium: Inorganic Chemistry	5557		