

SUBJECT INDEX TO VOLUME 32

	<i>Page</i>		<i>Page</i>
<i>a</i> =abstract			
Acetalization , cyclohexanone, on platinum metals, <i>a</i>	156	Capacitors , Pt-MOS, as NH ₃ sensors, <i>a</i>	213
Acetone , chemisorption, electroreduction, on Rh, Rh-Ni catalysts, <i>a</i>	93	Carbon Oxides , catalytic activation, ACS symposium	187
Acetoxylation , oxidative, propylene, by PdCl ₂ , <i>a</i>	157	CO , adsorption on Pd-Ru, Pd-Ni, H ₂ effect on, <i>a</i>	91
Adsorption , 2-naphthoic acid, at platinised Pt, <i>a</i>	93	automotive emission control	123
alcohols on O-Pd(III) surfaces, reactions, <i>a</i>	148	coupling with allylhalide, on Pd(O), <i>a</i>	156
CO, on Pd-Ru, Pd-Ni, H ₂ effect on, <i>a</i>	91	desorption from Pt-, Rh/ α -Al ₂ O ₃ {0001}, <i>a</i>	149
on Pt-, Rh particles/Al ₂ O ₃ {0001}, <i>a</i>	149	detectors, <i>a</i>	37
H	31, 130	Fischer-Tropsch reaction, <i>a</i>	97, 156
nitrocompounds, on Pt/Pt, /Ti, /TiO ₂ electrodes, <i>a</i>	93	for Pd carbonyl phosphine complexes synthesis, <i>a</i>	34
O ₂ , on Pt-Ag, <i>a</i>	154	hydrogenation reactions, <i>a</i>	40, 97, 154, 155
Alcohols , production on Pd(PPh ₃) ₂ + SmI ₂ , <i>a</i>	98	oxidation reactions, <i>a</i>	40, 149, 155, 214, 215
C ₁ , C ₂ , formation from syngas, <i>a</i>	154, 155, 214	photoreduction to CH ₄ , on Ru, Os colloids, <i>a</i>	35
ethyl, electro-oxidation, on S-treated Pt black, <i>a</i>	34	production on carbonylation, by Pd complexes, <i>a</i>	157
from syngas, on Ru-Mo-Na ₂ O/Al ₂ O ₃ , <i>a</i>	156	reaction with aldoximes, for nitrile formation, <i>a</i>	157
methyl, adsorption, oxidation, on platinised Pt+Sn electrode, <i>a</i>	210	reduction to CH ₄ , at Ru electrodes, <i>a</i>	93
decomposition, on Pt, Rh wire, <i>a</i>	96	+H ₂ , organic compound production, <i>a</i>	96
electro-oxidation, <i>a</i>	93, 151, 211	CO ₂ , formation from HCOOH/NaCOOH, <i>a</i>	155
from syngas, <i>a</i>	40, 215	hydrogenation/reduction, on Pt complex, <i>a</i>	156
H ₂ photoproduction from, <i>a</i>	212	photochemical reduction to CO, <i>a</i>	152
oxidation on Pt-Ag, <i>a</i>	154	reduction to CH ₄ , at Ru electrodes, <i>a</i>	152
reduction to CH ₄ , at Ru electrodes, <i>a</i>	93	CO ₂ /HCO ₂ , photoreduction to formate, <i>a</i>	94
synthesis, on Pd/zeolites, +Fe, La, <i>a</i>	155	Carbonylation , reactions, <i>a</i>	157, 158
methyl, ethyl, propyl, reactions on O-Pd(III) surfaces, <i>a</i>	148	Carbonyls , reduction, by IrH ₃ (PR ₃) ₃ , <i>a</i>	157
oxidation, on Ru/Ce(IV) oxide, <i>a</i>	156	Rh ₁₂ , Rh ₆ cluster anion formation, <i>a</i>	157
secondary, oxidation to ketones, electrochemically, <i>a</i>	34	Carboranes , transformation, <i>a</i>	40
unsaturated, from PhCH=CHCOMe, <i>a</i>	157	Catalysis , 9th Int. Congress review, Calgary conference, Liebfrauenberg, Sept. 1987	204
Aldehydes , carbonyl allylation of, <i>a</i>	98	heterogeneous, <i>a</i>	38, 39, 40, 96, 97, 98, 154, 155, 156, 213, 214
C ₁₁ , formation from decane, by RhCl(CO)(PR ₃) ₂ , <i>a</i>	157	of volatile organic compounds, <i>a</i>	39
formation, using Rh-phosphine two-phase catalysts synthesis, from propylene, <i>a</i>	179	homogeneous, <i>a</i>	40, 41, 98, 99, 156, 157, 158, 215, 216
Aldoximes , for nitrile formation, <i>a</i>	157	Homogeneous Catalyst Research Kit	122
Alkaloid , with OsO ₄ , for dihydroxylations, <i>a</i>	158	metallocomplexes, in electroic processes, review, <i>a</i>	92
Alkanes , catalytic reactions, <i>a</i>	157, 212, 215	RuO ₂ .xH ₂ O, effect of Ce ions, <i>a</i>	33
Alkenes , formation, <i>a</i>	155, 212	Catalysts , automotive, emission control	123
reactions, by Ru complexes, <i>a</i>	216	for CO ₂ activation, ACS symposium, review	187
Alkylation , isobutene with ethene, on Pd/Y zeolites, <i>a</i>	40	history, Kuhlmann's work	84
Alkynes , hydrogenation, on Pd/C, <i>a</i>	96	Iridium , colloids, properties of, <i>a</i>	98
terminal, trimerisation, by Rh complexes, <i>a</i>	34	effect on Pt dehydrogenation, <i>a</i>	38
Allyl Acetates , carbonyl allylation with Pd complexes, <i>a</i>	98	Iridium Complexes , <i>a</i>	157
Allylation , active methylene compounds, + allyl oxime carbonate, by Pd(O)-phosphine system, <i>a</i>	156	Ir-Fe carbonyl clusters/SiO ₂ , for syngas reaction, <i>a</i>	214
carbonyl, aldehyde, by Pd complex, <i>a</i>	98	Osmium Complexes , for dihydroxylations, <i>a</i>	158
Allylchloride , coupling with CO, <i>a</i>	156	[H ₃ RuOs ₂ (CO) ₁₂] ⁻ {Al} clusters, <i>a</i>	98
Ammonia , detection, by Pt-MOS, <i>a</i>	37, 213	Palladium , cluster, for propylene oxidation, <i>a</i>	98
electroproduction from nitrate, at Pt, Ni, <i>a</i>	211	Palladium Alloys , Pd-Ag, Pd-Y, H diffusion membranes, ethylene hydrogenation, <i>a</i>	97
oxidation, on Rh-Pt gauzes, characterisation	11	Pd-Zr, for CO oxidation, <i>a</i>	40
Anisole , catalytic reactions, <i>a</i>	215	Palladium Complexes , for carbonylations, <i>a</i>	157
Arctic Ocean , cathodic protection of vessels	119	Pd carbonyl phosphines, synthesis, <i>a</i>	34
Arenes , for biaryls formation, on RhCl(CO)(PMe ₃) ₂ , <i>a</i>	99	PdCl ₂ , for propylene acetoxylation, <i>a</i>	157
Arsine , detection, by Pd-MOS device, <i>a</i>	37	PdCl ₂ (CP)(Py-X), for quadricyclane isomerisation, <i>a</i>	98
Batteries , implanted, book review	27	PdCl ₂ (PhCN) ₂ -SnCl ₂ , for carbonyl allylation, <i>a</i>	98
Benzaldehyde , hydrogenation, hydrosilation, <i>a</i>	158	PdCl ₂ (PPh ₃) ₂ + SnCl ₂ , for 1-heptene reaction, <i>a</i>	40
Benzene , carbonylation, photochemical, <i>a</i>	158	Pd(O), for manolide formation, <i>a</i>	156
hydrogenations, <i>a</i>	39, 154, 214	Pd(O) tetrakis(triphenylphosphine), for ketone isomerisation, <i>a</i>	157
production in Pd reactor, from cyclohexane	10	Pd(acac) ₂ -PR ₃ -BF ₃ OEt ₂ , for dimerisations, <i>a</i>	215
Biaryls , formation from arenes, on RhCl(CO)(PMe ₃) ₂ , <i>a</i>	99	Pd(dba) ₂ -phosphine system, for allylations, <i>a</i>	156
Biochemistry , opportunities for platinum group metals	170	Pd(II) thiocarbamide, for hydrosilylations, <i>a</i>	98
Biomedical Engineering , microbrazing Pt wire nuclear implanted batteries	118, 27	Pd(II) + methionine, for hydrogenations, <i>a</i>	215
Book Reviews , batteries for biomedical devices	27	Pd(PPh ₃) ₄ , promoted, for silylations, <i>a</i>	41
Catalytic Activation of CO ₂ , ACS symposium	187	Pd(PPh ₃) ₄ + SmI ₂ + propargylacetate, for alcohols, <i>a</i>	98
geology of Bushveld Complex	63	Pd acetate-Li/C , for oxidation of C ₂ H ₄ , <i>a</i>	155
Platinum-Group Element Exploration	208	Pd colloid/β-cyclodextrin , for photoreduction, <i>a</i>	94
Boranes , transformations, <i>a</i>	40	Pd mercapto-hydroxyl chelates/SiO₂ , activities, <i>a</i>	155
Brazing , for Pt wires, in prostheses	118	Pd powder , for benzene hydrogenation, <i>a</i>	39
Bushveld Igneous Complex , book review survey, in "Platinum 1988"	63	PdFe/SiO₂ , bimetallic, for CO hydrogenation, <i>a</i>	154
Butadiene , hydrogenation, <i>a</i>	214	methanol synthesis from syngas, <i>a</i>	40
Butane , formation, on Pd(γ -Al ₂ O ₃), <i>a</i>	214	Pd-Fe carbonyl clusters/SiO₂ , for C ₁ -C ₂ alcohol synthesis, from syngas, <i>a</i>	214
oxidation, on Pt/Al ₂ O ₃ + Ce, La oxides, <i>a</i>	154	Pd/Al₂O₃ , <i>a</i>	155
selectivity to, on cyclohexane dehydrogenation, <i>a</i>	38	Pd/C , for alkynes, dienes, hydrogenation, <i>a</i>	96
Cancer , complexes for anti-tumour use	159, 170, 198	Pd/CdS , photocatalyst, stabilisation with EDTA, <i>a</i>	35
		Pd/charcoal , for H ₂ , CO ₂ formation, from HCOOH/NaCOOH, <i>a</i>	155

Catalysts (contd.)	Page	Catalysts (contd.)	Page
Pd/support , for benzene hydrogenation, <i>a</i>	39	Rh/Al₂O₃ , for meta-cresol dealkylation, <i>a</i>	155
Pd/Y zeolites , for isobutene alkylation, <i>a</i>	40	for syngas reaction, activity, <i>a</i>	214
Pd/γ-Al₂O₃ , for butadiene hydrogenation, <i>a</i>	214	Rh/LaO(OH) , support structures, <i>a</i>	40
Pd/zeolites , for isomerisation, <i>a</i>	214	Rh/SiO₂ , for CO hydrogenation, <i>a</i>	215
Pd/zeolites , + La, Fe, for methanol synthesis, <i>a</i>	155	for CO oxidation, <i>a</i>	155
Platinum , for diesel generator exhaust	61	for C ₂ H ₄ hydrogenation, hydro-formylation, <i>a</i>	97
for oxygen sensor	199	improved activity, for alkane hydrogenolysis, <i>a</i>	215
in lean burn engines	123	Rh/TiO₂ , bonding in, <i>a</i>	92
in phosphoric acid fuel cells, <i>a</i>	41	Rh/γ-Al₂O₃ , Rh/YSZ , for CO-NO exhaust	215
polycrystalline films, for CO oxidation, <i>a</i>	214	conversion, <i>a</i>	215
Pt-Au colloids, properties, <i>a</i>	39	Rh_n , RhFe clusters/NaY zeolites , for alkene, alcohol	155
decomposition, <i>a</i>	96	formation, from syngas, <i>a</i>	155
Platinum Alloys , Pt-Ag, for methanol oxidation, O ₂	154	RuO₂/γ-Al₂O₃ , for water gas shift, <i>a</i>	97
adsorption, <i>a</i>	154	Ruthenium , characterisation, by thermal analysis, <i>a</i>	97
Pt-Rh gauzes, surface characterisation, <i>a</i>	11	for C-N bond cleavage, <i>a</i>	215
Platinum Complexes , for hydrosilylations, <i>a</i>	98	Pb, Bi ruthenates, for olefin electro-oxidation, <i>a</i>	94
[Pt(μ -dppm)] ₂ , for dimethyl formamide, <i>a</i>	156	Ru(1,1,10), for ethane hydrogenolysis, <i>a</i>	215
Platinum Metals , borane, carborene reactions, <i>a</i>	40	Ruthenium Complexes , for alkene metathesis,	216
for cyclohexanone reactions, at high pressure, <i>a</i>	156	cyclopropanation, <i>a</i>	216
Platinum Metals/Inorganic Support , for organic	96	L ₂ (H ₂ O)Ru-O-Ru(OH) ₂ L ₂ , for H ₂ O photo-	36
compound synthesis, from syngas, <i>a</i>	96	oxidation, <i>a</i>	36
PtFe/SiO₂ , bimetallic, for CO hydrogenation, <i>a</i>	154	Ru porphyrin, cholest-5-ene for epoxidation, <i>a</i>	99
PtRe/γAl₂O₃ , <i>a</i>	38	Ru μ -oxo dimer, for water oxidation, <i>a</i>	212
Pt-Cu/Al₂O₃ , formation, structure, <i>a</i>	154	RuCl(CO)(NO)(PPh) ₃ , for carbonylations, <i>a</i>	158
Pt-Re/Al₂O₃-Cl , Cl effects on, <i>a</i>	96	Ru(bipy) ₂ ²⁺ /H ₂ SO ₄ /n-TiO ₂ , for photolysis, <i>a</i>	153
Pt-Re/H mordenite , for n-heptane hydroconversion, <i>a</i>	39	Ru(bpy) ₂ ²⁺ + RuO ₂ /CdS, for photocatalysis, <i>a</i>	35
Pt-TiO₂/SiO₂ , for H ₂ photoproduction, <i>a</i>	212	Ru(CO) ₂ (CH ₃ COO) ₂ (PBu) ₂ , hydrogenation, <i>a</i>	158
Pt , Pt-Re , Pt-Re-Cr/Al₂O₃ , for dehydrocyclisations,	213	Ru(III)-EDTA-ascorbate-H ₂ O ₂ , for cyclohexane	99
S pretreatment, <i>a</i>	213	oxidation, <i>a</i>	99
for methylcyclopentane conversion, <i>a</i>	154	Ru(II)-BINAP, for hydrogenations, <i>a</i>	99
Pt/Al₂O₃ , for 2,6-dinitrotoluene hydrogenation, <i>a</i>	38	[HRu ₂ (CO) ₁₁] ⁻ , for propylene hydro-	41
for cyclohexane decomposition	10	formylation, <i>a</i>	41
for cyclohexene hydrogenation, <i>a</i>	38	[H ₂ RuOs ₃ (CO) ₁₂] ⁻ {Al} cluster, <i>a</i>	98
for n-octane dehydrocyclisation, H ₂ effect on, <i>a</i>	38	[RuCl ₂ (H ₂ O) ₄] ²⁺ , for olefin oxidation to	99
for reforming, effect of Ir additions, <i>a</i>	38	ketones, <i>a</i>	99
methanation activity, after reduction, <i>a</i>	154	[Ru(bpy) ₂ (CO) ₂] ²⁺ + NADH, for CO ₂ reduction	152
removal of CO, NO, HC, from I.C.E. exhaust, <i>a</i>	96	to CO, <i>a</i>	152
sizes on thermal cycling in O ₂ and H ₂ , <i>a</i>	31	[Ru(NH ₃) ₅ Cl] ²⁺ + Ce(IV), for O ₂ evolution, <i>a</i>	158
sulphided, for C ₂ hydrocarbon reforming, <i>a</i>	96	[Ru(NH ₃) ₅ (H ₂ O)] ²⁺ + Ce(IV), for O ₂	158
Pt/Al₂O₃ + Ce , La oxides, for butane oxidation, <i>a</i>	154	evolution, <i>a</i>	158
Pt/C , for glucose liquid phase hydrogenations, <i>a</i>	39	Ruthenium Complexes , Ru ₃ (CO) ₁₂ , Ru(CO) ₃ (PPh) ₃ , for nitro-benzene carbonylation, <i>a</i>	158
Pt/FeNaY , for hydrogenation, hydrogenolysis, <i>a</i>	214	Ru(bpy)₂ ²⁺ + RuO ₂ /CdS, for H ₂ O photocatalysis, <i>a</i>	35
Pt/H mordenite , for n-heptane hydrogenation, <i>a</i>	39	Ru-Mo-Na₂O/Al₂O₃ , for alcohol synthesis, <i>a</i>	156
Pt/H-ZSM pentasils , for n-hexane transformations, <i>a</i>	96	Ru-Pt/Y zeolite , for isoalkane synthesis, from	40
Pt/NaY , Fe effect on, <i>a</i>	214	syngas, <i>a</i>	97, 156
Pt/SiO₂/Si , for cyclohexene dehydrogenation, <i>a</i>	96	Ru/Al₂O₃ , Fischer-Tropsch, <i>a</i>	97, 156
Pt/SiO₂ , D ₂ addition, exchange of propene, <i>a</i>	39	for CO hydrogenation, oxidation/reduction	97
Pt/TiO₂ , illuminated, H ₂ : D ₂ exchange, <i>a</i>	94	effect, <i>a</i>	97
Pt/Y zeolites , production, characterisation, <i>a</i>	214	Ru/Ce(IV) oxide , for waste water oxidation, <i>a</i>	156
Pt/YSZ , for CO oxidation, <i>a</i>	215	Ru/SiO₂ , for cyclohexane reactions, K additions, <i>a</i>	98
Pt/γ-Al₂O₃ , coked, reforming, regeneration of, <i>a</i>	213	Ru/support , characterisation, by thermal analysis, <i>a</i>	97
for benzene hydrogenation, coal formation, <i>a</i>	154	three-way, ceria promoted	73
for cyclohexane dehydrogenation, coking effect, <i>a</i>	38	performance, <i>a</i>	96
Pt/zeolites , for isomerisation, <i>a</i>	214	Catalytic Reaction Guide , Johnson Matthey	83
Pt/zeolites + additions , for n-hexane isomerisation, <i>a</i>	39	Cathodic Protection , of oil rigs, ships, in the Arctic	119
Rh complexes/SiO₂ gel , synthesis, <i>a</i>	97	Cells, chlorate, diaphragm, anodes in, <i>a</i>	211
RhFe/SiO₂ , bimetallic, for CO hydrogenation, <i>a</i>	154	CO ₂ , Pt/ZrO ₂ (Y ₂ O ₃)/Pt ₂ O ₃ , solid electrolyte, O	214
Rhodium , electroreduction of acetone on, <i>a</i>	93	pumping in, <i>a</i>	214
wire, for C ₂ H ₄ hydrogenolysis, <i>a</i>	97	electrochemical, H ₂ O splitting, model, <i>a</i>	152
wire, for N ₂ H ₄ decomposition, <i>a</i>	96	for bromate production, using RuO ₂ /TiO ₂ /Ti anode, <i>a</i>	152
Rhodium Alloys , Rh-Ni, electroreduction on, <i>a</i>	93	photoelectrochemical, with a Pt/n-Si electrode, <i>a</i>	152
Rh-Pt gauzes , surface characterisation	11	Ceramics , SiN containing, syntheses	64
Rhodium Complexes , bis(thioether)-bridged Rh,	34	+ glass, Pd-Ag wiring for, <i>a</i>	159
synthesis, reactions, <i>a</i>	99	Cerium , additions to catalysts, <i>a</i>	33, 154, 158
olefin reactions, <i>a</i>	99	Cermets , Pt + LaSrCrO ₃ /zirconia, for steam reduction, <i>a</i>	211
RhCl(CO)(PMe) ₂ , C-H bond activation, <i>a</i>	99	Chemisorption , acetone, on Rh, Rh-Ni catalysts, <i>a</i>	93
RhCl(CO)(PMe) ₂ , irradiated, for olefin	157	H ₂ , O ₂ , conductance effects on Pt films, <i>a</i>	31
synthesis, <i>a</i>	157	Chlorate , cell, anodes in, <i>a</i>	211
RhCl(CO)(PR) ₃ , for decane carbonylation, <i>a</i>	157	Chlorine , effects on Pt-Re/Al ₂ O ₃ -Cl, <i>a</i>	96
RhX(CO)(PR) ₃ , for photocatalytic	212	for regeneration, of coked Pt/ γ -Al ₂ O ₃ catalysts, <i>a</i>	213
dehydrogenations, <i>a</i>	212	Chloroplatinic Acid , radioisotopically labelled, <i>a</i>	159
Rh(II) acetate, for indandione reactions, <i>a</i>	215	Cholest-5-ene , stereospecific epoxidation, by air, on Ru	99
Rh-phosphine, two-phase, water soluble, for	179	porphyrin, <i>a</i>	99
hydroformylation	179	Cinnamic Acid , hydrogenation, by Pd(II) complexes +	215
Rh-tricyclohexylphosphine, for ethylene glycol	99	methionine, <i>a</i>	95
formation, <i>a</i>	99	Cluster Labelling , by Ir ₄ (CO) ₁₂ , <i>a</i>	95
Rh _n (CO) _n clusters, for nitriles, <i>a</i>	157	Clusters , Pd catalysts, for propylene oxidation, <i>a</i>	98
Rh-Fe , Rh-Ir carbonyl clusters/NaY(NaX)	214	Coal , formation, in spent catalysts, <i>a</i>	154
zeolite/SiO ₂ , for syngas reaction, <i>a</i>	214		
Rh-Fe/SiO₂ , for olefin hydroformylation, <i>a</i>	40		

	<i>Page</i>		<i>Page</i>
Coatings , acrylonitrile polymer, on Pt electrodes, electrochemical properties, <i>a</i>	34	Deuterium (<i>contd.</i>)	
Pd, Pd-Ni contacts, review of wear resistance, <i>a</i>	95	isotopic exchange, with C ₂ H ₄ , C ₂ H ₂ , <i>a</i>	39, 94
Pd-Ag alloys, <i>a</i>	36, 37	1,2-Dichloroethene , structure, photochemistry, <i>a</i>	212
Pd-Co alloys, shiny, electrodeposited, <i>a</i>	36	Dienes , hydrogenation, on Pd/C, <i>a</i>	96
Pd-In alloys, on stainless steel, by diffusion, <i>a</i>	36	Diesel , generators, exhaust control	61
Pd-Ni alloys, by pulse and reverse current plating, <i>a</i>	36	Diffusion , Au, in PdCuSi during irradiation, <i>a</i>	32
Pt modified aluminate, corrosion resistance, <i>a</i>	94, 95	D ₂ , in Pd-Cu alloys, <i>a</i>	91
on Ni superalloy, surface tests	18	H ₂ , in Pd, Pd alloys	22, 32, 97, 130, 151
Pt on Re single crystals, <i>a</i>	31	to form PtSi on hydrogenated Si, <i>a</i>	91
Pt-polymer composite, on steel, corona discharge, <i>a</i>	94	Pt, in SnO ₂ multilayer films, <i>a</i>	209
Rh, deposition by a.c. impulse currents, <i>a</i>	153	Si, polycrystalline, into PtSi, <i>a</i>	209
effect of additives, on properties, <i>a</i>	37	Dihydroxylation , between olefins and OsO ₄ , <i>a</i>	158
RuO ₂ /TiO ₂ , surface study, <i>a</i>	153	β-Diketones , synthesis, from α, β-epoxy ketones, <i>a</i>	157
surface, <i>a</i>	36, 37, 94, 95	Dimerisation , propylene, to linear hexenes, <i>a</i>	215
Colloids , Ir, IrO ₂ .xH ₂ O catalysts, properties, <i>a</i>	98	Dimethyl Formamide , formation, reversible, from CO ₂ , H ₂ , Me ₂ NH, on [Pt ₂ (dppm)] ₂ , <i>a</i>	156
Pt-Au catalysts, preparation, properties, <i>a</i>	39	Dimethyl Oxalate , hydrogenation, to methyl glycol, <i>a</i>	158
Composites , electrodes + Pt, in O ₂ sensors, <i>a</i>	153	2,6-Dinitrotoluene , hydrogenation, liquid phase, <i>a</i>	38
Pd-C-Ag, self-lubricating composites, in motors, <i>a</i>	159	Diodes , Pd-Si tunnel MIS, for H ₂ leak detection, <i>a</i>	95
Pt-polymer on steel, <i>a</i>	94	Dioxane , synthesis, from 1-heptene, <i>a</i>	40
Conferences , Symp. on Temp. Measurement catalysis	19, 204	DNA , cleavage, by Ru(DIP) ₂ Macro ⁿ⁺ , <i>a</i>	100
catalytic activation of CO ₂ , review	187	Electrical Conductivity , in PtPd/TiO ₂ , Pt films, on H ₂ , O ₂ chemisorption, <i>a</i>	31
Ruthenium in Cancer Chemotherapy superconductivity, in platinum metals	198, 60	Electrical Contacts , crossover systems, Pd-Ag, <i>a</i>	100
Copper , in RuO ₂ thick film resistors, <i>a</i>	216	Pd, Pd-Ni, electrodeposited, wear resistance, <i>a</i>	95
Corrosion , behaviour of Pd-Ti surfaces, <i>a</i>	35, 100	Pd-C-Ag, self-lubricating composites, <i>a</i>	159
catalytic, in Pd-Ru membranes, <i>a</i>	151	Pd/Zn/Pd-p-type GaP, characteristics, <i>a</i>	100
in Pd+steel, on H absorption, <i>a</i>	211	Pt, Rh, Pd, Ir/GaAs, thin film, <i>a</i>	41
in Ru-Ti oxide anodes, <i>a</i>	212	PtSi-As doped Si, properties, <i>a</i>	100
prevention, by impressed current systems	119	Electrical Resistance , in Pd-Mn, <i>a</i>	210
protection, <i>a</i>	159	Electrical Resistivity , in Pd-Fe alloys, <i>a</i>	91
resistance, amorphous Ni-Nb-Pd-Rh/Nb, electrodes to sea-water, <i>a</i>	35	in Pt-U compounds, <i>a</i>	91
electrodeposited Pd-Co alloys, <i>a</i>	36	Electrical Resistors , Pd-U-Si amorphous alloys, <i>a</i>	210
Pt modified aluminate coatings	18, 94, 95	Electrochemistry , <i>a</i>	34, 35, 92, 93, 94, 150, 151, 152, 210, 211
RuO ₂ .xH ₂ O, by Ce ions, <i>a</i>	33	Electrodeposition , <i>a</i>	36, 37, 94, 95, 153
stability, of Pd surface alloyed steels, <i>a</i>	159	Pd-Ag alloys, <i>a</i>	37
Cresol , meta, dealkylation, on Rh/-, Pd/Al ₂ O ₃ , <i>a</i>	155	Pt, on Pt, Ti, TiO ₂ , for electrodes, <i>a</i>	93
Crucibles , Pt, Pt alloy, for laser glass production, <i>a</i>	41, 100	Pt, Pt alloys, review	188
Crystallisation , in PdSi amorphous alloys, <i>a</i>	210	Rh, effect of additives, <i>a</i>	37
in Pt-Cu-Ni, after deformation, <i>a</i>	209	Electrodes , anodes, in molten carbonate fuel cells	200
Crystals , Pd, Pt, high purity, high quality, growth, <i>a</i>	213	platinised for corrosion protection on Arctic vessels	119
Ti, Pt(CN) ₄ , structure, <i>a</i>	92	Pt black, SO ₂ treated, alcohol oxidation, <i>a</i>	34
Cyclohexane , decomposition, in Pd tube reactor	10	Pt+Ru/C, Pt+Ru, for methanol oxidation, <i>a</i>	151
dehydrogenation, effect of coking and Pt content, <i>a</i>	38	Pt-IrO ₂ /, Pt-IrO ₂ -PdO/Ti, characteristics, <i>a</i>	211
hydrogenolysis, dehydrogenation, on Ru/SiO ₂ , <i>a</i>	98	RuO ₂ /TiO ₂ /Ti, for Na bromate formation, <i>a</i>	152
oxidation, by Ru(III)-EDTA-ascorbate-H ₂ O ₂ , <i>a</i>	99	Ru-Ti oxide, phosphate effect on, <i>a</i>	212
production, <i>a</i>	38, 154	Au-Pd system , electrochemical properties, <i>a</i>	151
Cyclohexanone , hydrogenation, acetalization, <i>a</i>	156	cathodes , Pt, in phosphoric acid fuel cells, <i>a</i>	41
Cyclohexene , dehydrogenation on SiO ₂ /Pt/Si, <i>a</i>	96	RuO ₂ , H ₂ evolution, <i>a</i>	93
hydrogenation, on Pt/Al ₂ O ₃ , kinetics, <i>a</i>	38	in phosphoric acid fuel cells, <i>a</i>	158
Decane , photocarbonylation, by RhCl(CO)(PR ₃) ₂ , <i>a</i>	157	Ni-Nb-Pd-Rh , amorphous, laser processed, properties, <i>a</i>	35
Decomposition , HCHO, HCOOH, CH ₃ OH, H ₂ H ₄ , <i>a</i>	96	PbPdO₃ , CdPdO ₄ , in alkaline fuel cells, <i>a</i>	216
Dehydroamino Acid , hydrogenation, <i>a</i>	215	Pd₃Mn , H solubility in, <i>a</i>	151
Dehydrocoupling , reactions, to synthesise polymers	64	platinised Ni, for nitrate, nitrite, reduction, <i>a</i>	211
Dehydrocyclisation , hexane, hexene, heptane, n-octane, <i>a</i>	38, 213	platinised Pt, for 2-naphthoic acid adsorption, <i>a</i>	93
Dehydrogenation , alkanes, to olefins, <i>a</i>	157	Sn modified, for ethylene glycol oxidation, <i>a</i>	150
cyclohexanes, <i>a</i>	38, 98, 213	platinised Pt + Sn, for methanol, formic acid, adsorption, oxidation, <i>a</i>	210
cyclohexene, on SiO ₂ /Pt/Si, <i>a</i>	96	Pt , acrylonitrile coated, properties, <i>a</i>	34
hydrocarbons, photocatalytic, by Rh complexes, <i>a</i>	212	electrochemistry of toluene on, <i>a</i>	211
Desorption , CO, from Pt-, Rh particles/Al ₂ O ₃ {0001}, <i>a</i>	149	for nitrate, nitrite, reduction, <i>a</i>	211
Detector , fast response, oxygen	199	in fuel cells, optimisation, <i>a</i>	216
arsine, by Pd-MOS devices, <i>a</i>	37	in phosphoric acid fuel cells, <i>a</i>	159
biophysical, using [Ru(phi) ₃]Cl ₂ , <i>a</i>	34	in water monitoring sensor	129
CH ₄ , C ₂ H ₂ , n-C ₄ H ₁₀ , by In ₂ O ₃ + PdCl ₂ , <i>a</i>	37	nucleation of Hg and Ag on, <i>a</i>	93
CO, by SnO ₂ /Pt, <i>a</i>	37	thin films, pretreatment, <i>a</i>	92
fast optical, Ru complex for time response test, <i>a</i>	213	+ ZrO ₂ electrolyte, O ₂ detection, <i>a</i>	37
flammable gases	50, 203	Pt wire, in TMB electrolysis, whisker formation, <i>a</i>	153
glucose, by enzyme-polyaniline film/Pt fibre, <i>a</i>	95	Pt + composite , in O ₂ sensors, <i>a</i>	153
hydrocarbons, longchain, by Pt hot wire, <i>a</i>	95	Pt-Cr , for O ₂ reduction, in fuel cells, <i>a</i>	216
hydrocarbons, unsaturated, by Pt-MOS, <i>a</i>	37	Pt-SPE , for H ₂ oxidation, O ₂ reduction, <i>a</i>	35
H ₂ , <i>a</i>	31, 95, 213	Pt-SPE , PtIr-SPE, PtRu-SPE, PtSn-SPE, for methanol electro-oxidation, <i>a</i>	151, 211
NH ₃ , by Pt-MOS, <i>a</i>	37	Pt/C , power optimisation in SPE fuel cells, <i>a</i>	158
organic impurities in water, by Pt monitor	129	Pt/NBR /polypyrrole, fast anion doping, <i>a</i>	34
O ₂ , <i>a</i>	31, 37, 38	Pt/n-Si , discontinuous, in photoelectrochemical solar cell, <i>a</i>	152
semiconductors, <i>a</i>	37		
thick film voltammetric, RuO ₂ , Bi ₂ Ru ₂ O ₇ , <i>a</i>	95		
Deuterium , diffusion, in Pd-Cu alloys, <i>a</i>	91		

Electrodes (contd.)	Page	History (contd.)	Page
Pt/Pt ₂ -/Ti ₂ -/TiO ₂ structure, adsorption characteristics, <i>a</i>	93	spectroscopy	28
p-InP(Pt)/n-Si, for H ₂ , evolution from model cell, <i>a</i>	152	Viacheslav Vasil'evich Lebedinskii, Rh chemist	141
Ru, CO, CH ₃ OH reduction, <i>a</i>	93	Homogeneous Catalyst Research , Kit. Johnson Matthey	122
electroplated, for CO ₂ reduction to CH ₄ , <i>a</i>	152	Hydrazine , decomposition, on Pt, Rh wire, <i>a</i>	96
RuO ₂ , thick film, voltammetric sensor, <i>a</i>	95	Hydrocarbons , automotive emission control	123
RuO ₂ /Ru-Ti oxide, phosphate effect on, <i>a</i>	212	C ₂ -C ₃ formation, from CO hydrogenation, <i>a</i>	215
Ru(bpy) ₃ ²⁺ + RuO ₂ /CdS, water photochemical splitting, <i>a</i>	35	C ₃ , reforming on sulphided Pt/Al ₂ O ₃ , <i>a</i>	96
Ti oxide, Pd ion implanted, <i>a</i>	32	detection, <i>a</i>	37
Ti/IrO ₂ -Ta ₂ O ₅ , for O ₂ evolution, characterisation, <i>a</i>	152	formation, from methylcyclopentane, <i>a</i>	38
Electrolysis , tetramethylbenzidine, by Pt electrode, <i>a</i>	153	higher, formed by Fischer-Tropsch reaction, <i>a</i>	156
water, high temperature, at Pt cermet/zirconia, <i>a</i>	211	longchain, sensor, by Pt hot wire, <i>a</i>	95
Electrolytes , for depositing Pt, Pt alloys, review	188	saturated, photocatalytic dehydrogenation, by Rh complexes, <i>a</i>	212
Pt cermet + YSZ zirconia, for steam reduction, <i>a</i>	211	Hydrocarboxylation , 1-heptene, <i>a</i>	40
Electron Transfer Reactions , interfacial, between Pt colloids and reducing radicals, <i>a</i>	151	Hydroconversion , n-heptane, <i>a</i>	39
Electroplating , Pt, Pt alloys, review	188	Hydroformylation , <i>a</i>	214
Embrittlement , of steel, Ta, by H ₂ , prevention	21, 31	Rh-phosphine, two-phase, water soluble catalysts for	179
Emission Control , automotive, <i>a</i>	96	Hydrogen , absorption, in AISI 4130 steel + Pd, <i>a</i>	211
by three-way catalysts, ceria promoted	73	in Pd-Si alloys, properties, review	83
CO-NO reaction, on Rh catalysts, <i>a</i>	215	adsorption/desorption, on spongy Pt, <i>a</i>	31
CO ₂ , in atmosphere, ACS symposium review	187	detectors, <i>a</i>	37, 95
from lean burn and other engines	123	diffusion, through Pd alloy membranes	22, 32, 97
of diesel generators	61	effect on CO adsorption, in Pd-Ni, Pd-Ru, <i>a</i>	91
Enzymes , co-ordination of platinum metals species to H ₂ O splitting, modelling with Ru complexes, <i>a</i>	186	effect on conductance, on chemisorption, <i>a</i>	31
Epoxidation , stereospecific, cholest-5-ene derivatives, by air + Ru porphyrin, <i>a</i>	99	effect on magnetic state, in Pd-Fe-H, <i>a</i>	32
Ethane , hydrogenolysis, on Ru(1,1,10), <i>a</i>	215	effect on n-octane dehydrocyclisation, <i>a</i>	38
Ethylbenzene , isomerisation, on Pt/, Pd/zeolites, <i>a</i>	214	effect on selectivity, of Pt/H-ZSM pentasils, <i>a</i>	96
Ethylene , detection, by Pt-MOS, <i>a</i>	37	embrittlement of steel, prevention by Pd	21
hydrogenation, on Pd alloy membranes, <i>a</i>	97	embrittlement of Ta, prevention by Pt ⁺ , <i>a</i>	31
hydrogenation, hydroformylation, on Rh/SiO ₂ , <i>a</i>	97	evolution, on RuO ₂ cathode, <i>a</i>	93
oxidation to vinyl acetate, on Pd acetate-Li/C, <i>a</i>	155	heat induced effects on Pt/Al ₂ O ₃ , <i>a</i>	31
Ethylene Glycol , electro-oxidation, on Pt electrode, <i>a</i>	150	in regenerating coked reforming catalysts, <i>a</i>	213
formation, <i>a</i>	99, 158	isotope exchange, on PtRe/γ-Al ₂ O ₃ , <i>a</i>	38
E.E.C. , automotive emission control legislation	123	oxidation, on Pt-SPE membrane electrode, <i>a</i>	35
Pt-Rh thermocouple calibrations	72	permeation, in Ru-Pd membranes, <i>a</i>	151
Extraction , platinum group metals	170	through thin Pd films, for Pd-MOS sensors, <i>a</i>	213
		photoproduction, <i>a</i>	35, 152, 153, 212
Films , around Pt on thermal cycling in O ₂ and H ₂ , <i>a</i>	31	production, from HCOOH/NaCOOH, on Pd/charcoal	155
Ir oxide, charging/discharging kinetics, <i>a</i>	152	solubility in Pd, Pd alloys, <i>a</i>	32, 148, 151, 210
TiO ₂ , Pd implanted, electrochemical studies, <i>a</i>	32	Hydrogenation , 2,6-dinitrotoluene, liquid phase, <i>a</i>	38
Fischer-Tropsch , reactions, <i>a</i>	97, 156	alkynes, dienes on Pd/activated C, <i>a</i>	96
Formaldehyde , decomposition, on Pt, Rh wire, <i>a</i>	96	asymmetric, on Ru(II)-BINAP dicarboxylate, <i>a</i>	99
Formate , Na, + HCOOH, for H ₂ , CO ₂ formation, <i>a</i>	155	benzaldehyde, by Ru(O) complexes, <i>a</i>	158
photoproduction from CO ₂ /HCO ₂ , <i>a</i>	94	benzene, <i>a</i>	39, 154, 214
Formic Acid , adsorption, oxidation, <i>a</i>	210	butadiene, liquid phase, by Pd/γ-Al ₂ O ₃ , <i>a</i>	214
catalytic decomposition, <i>a</i>	96, 155	catalytic, 9th Congress on Catalysis	204
electro-oxidation, <i>a</i>	93, 211	cinnamic acid, <i>a</i>	215
Fuel Cells , <i>a</i>	41, 158, 159, 216	CO, by Fischer-Tropsch reaction, <i>a</i>	97, 156
molten carbonate, corrosion in anodes	200	for hydrocarbon, oxygenates synthesis, <i>a</i>	97
Fuels , liquid, on promoted Fischer-Tropsch catalysts, <i>a</i>	156	for methanol, hydrocarbons synthesis, <i>a</i>	215
		for methanol formation, on Pd/zeolite, <i>a</i>	155
Gallium , triple point, use in Pt thermometer, <i>a</i>	100	for organic compound synthesis, <i>a</i>	96
Gases , flammable, detection	50	to alkenes, alcohols, on Rh ₂ , RhFe/NaY, <i>a</i>	155
Gauzes , Rh-Pt, for HNO ₃ manufacture	11	to C ₁ , C ₂ alcohols, on bimetallic catalysts, <i>a</i>	154
Generators , diesel, exhaust control	61	CO ₂ , to dimethyl formamide, by Pt ₂ (μ-dppm) ₂ , <i>a</i>	156
Geology , book review	208	cyclohexanone, high pressure, on platinum metals, <i>a</i>	156
of Bushveld Complex, book review	63	cyclohexene, on Pt/Al ₂ O ₃ , kinetics, <i>a</i>	38
Glass , amber, thermocouples for use in, <i>a</i>	159	dehydroamino acid, by Pd(II) complexes, <i>a</i>	215
laser, Pt crucibles for, <i>a</i>	41, 100	dimethyl oxalate, to methyl glycolate, ethylene glycol, by Ru complexes, <i>a</i>	158
Glasses , amorphous, PdSi, Pd-H-Gd, Pd-U-Si, <i>a</i>	209, 210	ethylene, <i>a</i>	97
in RuO ₂ resistors, <i>a</i>	216	PhCH=CHCOMe, to unsaturated alcohol, <i>a</i>	157
metallic, PdCuSi irradiation induced defects, <i>a</i>	32	stereoselective, 1,3 diketones, on Ru(II)-BINAP	99
+ ceramics, Pd-Ag wiring for, <i>a</i>	159	toluene, on Pt electrodes, <i>a</i>	211
Glucose , microsensor, <i>a</i>	95	Hydrogenolysis , alkanes, on Rh/SiO ₂ , after treatment, <i>a</i>	215
Glucose 1-Phosphate , liquid phase oxidation, <i>a</i>	39	cyclohexane, on Ru/SiO ₂ , effect of K, <i>a</i>	98
Glucuronic Acid 1-Phosphate , production, <i>a</i>	39	ethane, on Ru(1,1,10), <i>a</i>	215
		methylcyclopentane, on Pt/NaY, <i>a</i>	214
Heavy-Atom Marker , use of PtCl ₄ as	170	n-hexane, on Pt/FeNaY, <i>a</i>	214
1-Heptane , hydrosilylation, on thiocarbamide, <i>a</i>	98	on PtRe/γ-Al ₂ O ₃ , <i>a</i>	38
n-Heptane , reactions on Pt catalysts, <i>a</i>	39, 213	propane, <i>a</i>	97
1-Heptene , hydrocarboxylation, to dioxane, <i>a</i>	40	Hydrosilation , benzaldehyde, by Ru(O) complexes, <i>a</i>	158
n-Hexane , reactions, on Pt catalysts, <i>a</i>	39, 96, 213, 214	Hydrosilylation , <i>a</i>	98, 157
n-Hexene , dehydrocyclisation, on Pt catalysts, <i>a</i>	213	Impressed Current Systems , for Arctic use	119
Hexenes , formation from propylene, by Pd complexes, <i>a</i>	215	Indandiones , decomposition, by Rh(II) acetate, <i>a</i>	215
Hex-1-yne , formation by Ir complex, <i>a</i>	157	Indium , wetting, Pt, <i>a</i>	148
History , Frédéric Kuhlmann, industrial pioneer	84	Inks , Ru based, in thick film resistors, <i>a</i>	159
		Integrated Circuits , Cu-RuO ₂ -glass resistors in, <i>a</i>	216
		Ion Beam Bombardment , effect on properties, <i>a</i>	32
		Ion Irradiation , Au in Pd-Cu-Si, <i>a</i>	32

	<i>Page</i>		<i>Page</i>
Iridium Alloys, a	33, 129	Olefins (contd.)	
Iridium Complexes, Ir dppm μ-oxo, a	34	electro-oxidation, on Pb-, Bi ruthenates, a	94
Ir oxometallates, Keggin ion, characterisation, a	210	formation from alkanes, by irradiated Rh complex, a	157
IrR(CO) ₂ L ₂ (mnt), characterisation, a	94	hydroformylation, on Rh catalysts, a	40, 99
Ir ₄ (CO) ₁₂ , as label for measuring molecular length, a	95	oxidation to ketones, on [RuCl ₂ (H ₂ O) ₄] ⁺ , a	99
[Ir(CO) ₂ F(COF)(PEt ₃) ₂] ⁺ , synthesis, structure, a	150	Oligosilazanes, synthesis	64
[Ir(NO)(CO)Cl(PPH ₃) ₂]BF ₄ , photolysis, a	35	Optical Properties, RuO₂ thin films, a	33
Iridium Oxide, a	152	Organic Compounds, catalytic preparation, a	96
Iron, additions to catalysts, a	155, 214	for interfacial electron transfer, to Pt colloids, a	151
Isoalkanes, synthesis, on RuPtHY zeolites, a	40	volatile, heterogeneous catalytic oxidation, review, a	39
Isobutene, alkylation with ethene, on Pd/Y zeolites, a	40	Organometallics, polymers, syntheses	64
Isomerisation, α, β-epoxy ketones, to β-diketones, a	157	Osmium Alloys, a	92
ethylbenzene, m-xylene, on Pt/zeolites, a	214	Osmium Complexes, a	150
n-hexane, on Pt/zeolite + additions, a	39	Osmium Oxides, use in electron microscopy	170
quadricyclane, on trans-Cl ₂ Pd(CP)(Py-X), a	98	Oxidation, alcohols, to ketones, on Pt electrode, a	34
ITS-90, International Temperature Scale	26	butane, by Pt/Al ₂ O ₃ + La, Ce oxides, a	154
Johnson Matthey, Catalytic Reaction Guide	83	CH ₃ OH, on Pt + Ru anodes, a	93
Homogeneous Catalyst Research Kit	122	CO, catalytic, a	40, 149, 155, 214
"Platinum 1988"	118	cyclohexane, a	99
Joining	95, 118	electro-, a	94, 150, 151, 211
Ketones, 1,3-diketones, stereoselective hydrogenation, on		ethylene, to vinyl acetate, on Pd acetate-Li/C, a	155
Ru(II)-BINAP, a	99	formic acid, a	93, 211
α , β -epoxy, for isomerisation reactions, a	157	high temperature, Pt-Pd-Rh, Pt-Rh, Pd-Rh foils, a	209
production from olefins, on [RuCl ₂ (H ₂ O) ₄] ⁺ , a	99	H ₂ , on Pt-SPE membrane electrode, a	35
Kuhlmann, Frédéric, history	84	Ir oxide films, kinetics of, a	152
Lanthanum, oxide, addition to Pt/Al₂O₃, a	154	liquid phase, of glucose 1-phosphate, a	39
Lasers, action in fluoroaluminate glass, a	100	methanol, on Pt-Ag alloys, catalytic activity, a	154
phosphate, glass, production in Pt alloy crucibles, a	41	NH ₃ , characterisation of Rh-Pt gauzes	11
Lean Burn, engines, emission control in	123	of polychlorinated biphenyls	186
Lebedinskii, V.V., history of a Rh chemist	141	olefins, to ketones, on [RuCl ₂ (H ₂ O) ₄] ⁺ , a	99
Lithium Niobate, Ti diffused, in Pt box, for waveguides	10	propylene, to allyl acetate, on Pd clusters, a	98
Magnetism, Co-Pt films, effects of Cr, W, a	209	resistant Ir-Al, Ir-Hf alloys, for aerospace use	129
ErPd ₂ Sn, low temperature, Mössbauer study, a	91	Rh/SiO ₂ , to improve activity, a	215
in YbPdSb, YbPdBi compounds, a	149	water, by Ru complexes, a	158, 212
MnRhAs, effect of pressure on, a	33	wet, of waste organic compounds, a	156
Pd-Fe-H, H effect in, a	32	Oxygen, adsorption on Pt-Ag, state, a	154
Pd-H-Gd, amorphous, a	209	detectors, a	37, 38, 153
Pd-U-Si amorphous alloys, a	210	effect of alcohol conversions, on Pd(III), a	148
U-Pt compounds, properties, a	91	effects on conductance, on chemisorption after	
Y(Fe _{1-x} Ru _x) ₂ , a	92	chemisorption in Pt, PtPd/TiO ₂ , a	31
Manoalide, seco-manoalide, synthesis, a	156	electrodes, in alkaline fuel cells, a	216
Medical, implanted electrical devices, book review	27	evolution, from H ₂ O, by Ru complexes, a	158, 212, 216
labelled chloroplatinic acid, for anti-cancer use, a	159	on DSA type Ti/IrO ₂ -Ta ₂ O ₅ electrodes, a	152
microbrazing for Pt wires, in prostheses	118	for oxidising CO on Rh single crystals, a	149
Ru complexes in cancer chemotherapy, conference	198	photoproduction, from H ₂ O, a	35, 36, 153
Ru(DIP) ₂ Macro ⁿ⁺ , for DNA cleavage, a	100	pumping, on porous Pt catalysts film, a	214
Membranes, Pd, Pd alloys	10, 22, 97, 108, 151	reduction, a	35, 216
Ru complex, lipid, for O ₂ production	36	sensors	199
Methanation, activity by Pt/Al₂O₃, a	154	size effect on Pt/Al ₂ O ₃ , on heating, a	31
Methane, detection, by In₂O₃ + PdCl₂, a	37	transfer, between Rh catalyst and O ion support, a	215
production, a	35, 93, 152, 215	Palladium, in steel	21, 159, 211
Methylcarbamates, formation from nitrobenzene, a	158	compounds, ErPd ₂ Sn, magnetism in, a	91
Methylcyclohexane, dehydrogenation, on Pt/Al₂O₃, a	213	FePd ₃ , superlattice formation, a	91
production from toluene, on Pt electrodes, a	211	PdCl ₂ , in In ₂ O ₃ gas sensor, a	37
Methylcyclopentane, reactions, on Pt catalysts, a	38, 154, 214	YbPdSb, YbPdBi, low temperature properties, a	149
Methylene, compounds, allylation, a	156	crystals, growth, a	213
Monoacetate Propylene Glycols, synthesis, on propylene		electroplated, tribology, effect of N ₂ ⁺ , a	148
acetoxylation, by PdCl ₂ , a	157	H solubility and diffusivity in, a	32
Naphthoic Acid, adsorption, on platinised Pt electrode, a	93	in electrical crossover systems, a	100
Nitrate, electrochemical reduction, a	211	in Pd-Sn-Si MIS device, for O ₂ detection, a	38
Nitric Acid, manufacture	11	in Schottky diodes, a	41
Nitriles, formation, from CO, H₂O, aldioximes, a	157	ions, implantation in TiO ₂ films, a	32
Nitrite, electrochemical reduction, a	211	implanted into Ti, corrosion resistance, a	35
Nitrobenzene, reactions, a	34, 158	metallised poly(ethylene terephthalate), for gas	
Nitrogen, C-N catalytic bond cleavage, a	215	permeation, a	151
electroproduction from nitrate, at Pt, Ni, a	211	Pd(111), photochemistry of dichloroethene on, a	212
ion implantation, effect on Pd, Pd alloys tribology, a	148	Pd(III)-O-dosed surfaces, reactions of alcohols on, a	148
Nitrogen Oxides, automotive emission control	123	Pd-Au system, electrochemical properties, a	151
NO, reaction with CO, on Rh, Pt catalysts, a	149, 215	Pd-MOS detectors, a	37
Norbornadiene, production, from quadricyclane, a	98	Pd-Si tunnel MIS diode, for H ₂ detection, a	95
Nuclear Implants, in body, book review	27	Pd-WO ₂ -W system, FEM study, a	91
Nuclear Waste, ¹⁰³Ru, ¹⁰⁶Ru recovery from	170	Pd/Pd-Zn/p-type GaP contacts, characteristics, a	100
n-Octane, dehydrocyclisation, on Pt/Al₂O₃, a	38	systems, phase formation, a	32
Oil, rigs, corrosion protection in the Arctic	119	thin films, H ₂ permeation through, a	213
Olefins, dihydroxylation with OsO₄, a	158	synthesis, for electronics, a	159
		Palladium Alloys, H diffusion in tubular membranes	22
		Palladium + Platinum, formic acid oxidation, a	211
		Palladium-Carbon-Silver, composites, for motors, a	159
		Palladium-Cobalt, electrodeposited, properties, a	36
		Palladium-Copper, D₂ diffusion in, a	91
		Palladium-Copper-Hydrogen, effect of Ar ion, a	32

Palladium Alloys (contd.)	Page	Platinum (contd.)	Page
Palladium-Copper-Silicon , amorphous, <i>a</i>	32, 149	Pt/poly-Si/SiO ₂ /Si(100), preparation, annealing, <i>a</i>	209
Palladium-Europium, Palladium-Europium-Hydrogen , H solubility, pressure-composition isotherms, <i>a</i>	148	Pt/SiC, support in phosphoric acid fuel cell, <i>a</i>	158
Palladium-Gadolinium-Hydrogen , amorphous, <i>a</i>	209	radioisotopes, for labelling chloroplatinic acid, <i>a</i>	159
Palladium-Gold-Silver-Tin , N ₂ ⁺ effect, <i>a</i>	148	resistance thermometer, using Ga triple point, <i>a</i>	100
Palladium-Hydrogen , Ar ion bombardment, <i>a</i>	32	spongy, H adsorption/desorption tests, <i>a</i>	31
Palladium-Hydrogen-Iron , magnetic state, <i>a</i>	32	structure on fluoride supports, <i>a</i>	31
Palladium-Indium , diffusion coatings, properties, <i>a</i>	36	thin films, synthesis, for electronics, <i>a</i>	159
Palladium-Iron , annealing effects, on properties, <i>a</i>	148	wettability by In, <i>a</i>	148
FePd, superlattice formation on metal additions, <i>a</i>	91	"Platinum 1988"	118
Palladium-Manganese , PdMn ₃ , ordering in, H solubility, <i>a</i>	151, 210	Platinum Alloys , electrolytic deposition of, review	188
Palladium-Nickel , CO adsorption on, <i>a</i>	91	in phosphate laser glass production, <i>a</i>	41
pulse and reverse current plating, <i>a</i>	36	Platinum-Palladium , for formic acid oxidation, <i>a</i>	211
Palladium-Rare Earths , ordering transformations	130	Platinum-Chromium , in fuel cells, <i>a</i>	216
Palladium-Rhodium , foils, oxidation, <i>a</i>	209	Platinum-Cobalt , thin films, magnetic properties, <i>a</i>	209
Palladium-Ruthenium , CO adsorption on, <i>a</i>	91	Platinum-Copper , order in, <i>a</i>	209
membrane catalysts, corrosion, H permeability, <i>a</i>	151	Platinum-Copper-Nickel , disordering, <i>a</i>	209
Palladium-Silicon , electro-oxidation, <i>a</i>	93	Platinum-Iron , shape memory effects in	110
H properties in	83	Platinum-Palladium-Rhodium , foils, oxidation, <i>a</i>	209
Palladium-Silicon-Uranium , properties, <i>a</i>	210	Platinum-Rhenium(III) , structure, <i>a</i>	31
Palladium-Silver , electrodeposition, <i>a</i>	37	Platinum-Rhodium , foils, oxidation, <i>a</i>	209
pulse plated, <i>a</i>	36	gauzes for HNO ₃ manufacture, surface structure	11
thick-film crossover properties, <i>a</i>	100	surface effects, <i>a</i>	31
wiring for glass-ceramic materials, <i>a</i>	159	thermocouples, European calibrations	72
Palladium-Silver, Palladium-Yttrium , H diffusion membranes, <i>a</i>	97	Platinum-Silver , for methanol oxidation, <i>a</i>	154
Palladium-Steel , surface protection on alloying, <i>a</i>	159	Platinum-Tungsten, Platinum-Rhenium-Tungsten , wires, in high temperature strain gauges, <i>a</i>	213
Palladium-Titanium , corrosion behaviour, <i>a</i>	35, 100	Platinum-Vanadium , reactions with Si, <i>a</i>	148
Palladium-Vanadium , after irradiation, <i>a</i>	210	Pt ₃ Ni _{1-x} , photoemission of adsorbed Xe, <i>a</i>	91
Palladium Complexes , <i>a</i>	33, 34, 92, 155, 213	Platinum Aluminide , on superalloys	18, 94, 95
Palladium Membrane Reactor	10	Platinum Complexes , with biological molecules	170
Palladium Oxide , in thick film resistors, <i>a</i>	209	Na ₂ PdH ₂ , synthesis, structure, <i>a</i>	150
Palladium Silicides , Pd ₂ Si, growth, <i>a</i>	149	PdPtCl ₂ (μ ₂ -CO)(PPh ₃) ₂ , redox reactions, <i>a</i>	33
polycrystalline reordering on epitaxial, <i>a</i>	149	production, from (C ₂ H ₅) ₂ Pt(PPh ₃) ₂ , structure, <i>a</i>	150
Pd ₃ Si ₅ , amorphous, crystallisation, <i>a</i>	210	Platinum Metals , geology of Bushveld	63
Permeability , through Pd/poly(ethylene terephthalate), <i>a</i>	151	Platinum Metals Alloys , welding, <i>a</i>	95
H, in Pd-Ru membranes, <i>a</i>	151	Platinum Silicides , contacts with As-doped Si, <i>a</i>	100
Phase Changes , in thin film Pd systems, <i>a</i>	32	formation at a-Si:H, <i>a</i>	91
Phase Diagrams , Ir-Cu, <i>a</i>	33	in Schottky diodes, formation, <i>a</i>	216
PdO-RuO ₂ , PdO-Bi ₂ O ₃ , RuO ₂ -Bi ₂ O ₃ , <i>a</i>	209	layers, on polycrystalline Si, growth, <i>a</i>	209
RuO ₂ -Bi ₂ O ₃ -PdO, <i>a</i>	209	Pollution Control , automotive, in lean burn engines	123
Ru-Cu-Ni-S, <i>a</i>	33	automotive exhaust, <i>a</i>	96
Ru-Mo, at 900-2000°C, <i>a</i>	92	catalytic, 9th Int. Congress on Catalysis	204
Ru-Si-N, Ru-Si, <i>a</i>	149	CO-NO reaction, on Rh catalysts, <i>a</i>	215
Phenol , oxidation, on Ru/Ce(IV) oxide, <i>a</i>	156	CO ₂ in the atmosphere, review of ACS symposium	187
Phenylacetylene , hydroxylation, <i>a</i>	98	destruction of polychlorinated biphenyls	186
Phosphates , effect on corrosion, Ru-Ti, RuO ₂ , <i>a</i>	212	exhaust emissions, by three-way catalysts	73
Phosphoric Acid , fuel cells, <i>a</i>	158, 159	of generator exhaust gas	61
Photocatalysis , <i>a</i>	35, 36, 94, 152, 153, 212	waste water, by oxidation on Ru/Ce(IV) oxide, <i>a</i>	156
Plating , pulse, Pd, Pd alloys, <i>a</i>	36	water, monitoring, by Pt	129
pulse reverse current, Pd, Pd-Ni, <i>a</i>	36	Polychlorinated Biphenyls , destruction of	186
Platinum , box, for waveguide production	10	Polymers , organometallic, synthesis	64
catalysts, early industrial work by Kuhlmann, history	84	Polysaccharides , conversion to H ₂ , <i>a</i>	155
cermet, for steam reduction, <i>a</i>	211	Polysilazanes , synthesis	64
colloids, in electron transfer reactions, <i>a</i>	151	Propane , hydrogenolysis, on Rh wire, <i>a</i>	97
compounds, <i>a</i>	32, 33, 60, 91, 92, 148, 150	isotopic exchange, with D ₂ , on Pt/TiO ₂ , <i>a</i>	94
crystals, growth, <i>a</i>	213	Propargylic Acetates , alcohol production, <i>a</i>	98
dispersion strengthened	2, 159	Propene , D ₂ addition, exchange, on Pt/SiO ₂ , <i>a</i>	39
electrochemical nucleation, of Hg and Ag on, <i>a</i>	93	Propylene , acetoxylation, by PdCl ₂ , <i>a</i>	157
electrodes, adsorption, <i>a</i>	93	dimerisation, by Pd complexes, <i>a</i>	215
in cell, for O ₂ detection, <i>a</i>	37	hydroformylation, by [HRu ₃ (CO) ₁₁] ⁻ , for aldehydes, <i>a</i>	41
in fuel cells, <i>a</i>	216	oxidation, on Pd clusters, to allyl acetate, <i>a</i>	98
thin film, pretreatment of, <i>a</i>	92	Prostheses , neurological, microbrazing for	118
electrolytic deposition of, review	188	Quadracyclane , isomerisation, by trans-Cl ₂ Pd(CP)(Py-X), <i>a</i>	98
for water pollution monitoring	129	Reduction , electro, acetone, on Rh, Rh-Ni catalysts, <i>a</i>	93
hot water detector, for longchain hydrocarbons, <i>a</i>	95	CO, CH ₃ OH, to CH ₄ , at Ru electrodes, <i>a</i>	93
implantation to prevent Ta embrittlement, <i>a</i>	31	nitrate, nitrite, on Pt, Ni electrodes, <i>a</i>	211
in aluminide coatings, on Ni superalloy, surface tests	18	O ₂ , on Pt-SPE membrane, <i>a</i>	35
in composite electrodes, in O ₂ sensors, <i>a</i>	153	toluene, on porous Pt electrodes, <i>a</i>	211
in MOS gas detectors, <i>a</i>	37	O ₂ , at Pt-Cr electrodes, <i>a</i>	216
in SnO ₂ /Pt, CO sensors, <i>a</i>	37	photo, CO ₂ /HCO ₃ ⁻ , to formate, <i>a</i>	94
particles, size on thermal cycling in O ₂ and H ₂ , <i>a</i>	31	Reforming , catalysts, S effect on, <i>a</i>	154, 213
powder polymer composites, coatings on steel, <i>a</i>	94	Pt/γ-Al ₂ O ₃ , regeneration of, <i>a</i>	213
Pt particles/α-Al ₂ O ₃ {0001}, CO desorption from, <i>a</i>	149	C, hydrocarbons, on sulphided Pt/Al ₂ O ₃ , <i>a</i>	96
Pt(111), photochemistry of dichloroethene on, <i>a</i>	212	methylcyclopentane on Pt, Ir/, Pt-Ir/Al ₂ O ₃ , <i>a</i>	38
Pt-MOS, thin film capacitors, as NH ₃ sensors, <i>a</i>	213	Resistance Thermometer , Pt, using Ga triple point, <i>a</i>	100
Pt-SnO ₂ , interdiffusion, <i>a</i>	209	Resistojets , for propulsion in space	2
Pt-yttria, Pt-zirconia, in space resistojets	2	Resistors , RuO ₂ , thick films, <i>a</i>	41, 159, 216
Pt/C, in SPE fuel cells, <i>a</i>	158		

Resistors (contd.)	<i>Page</i>	Steel (contd.)	<i>Page</i>
thick film, Ru-Bi-Pd oxides, <i>a</i>	209	low alloy, Pd in surface, H embrittlement prevention	21
Reviews , annual survey "Platinum 1988"	118	Pt-polymer composite coatings on, <i>a</i>	94
carbonylation, of organic compounds, <i>a</i>	157	stainless, surface alloyed with Pd, <i>a</i>	159
catalytic preparation of organic compounds, <i>a</i>	96	Strain Gauges , high temperature, Pt alloy wires for, <i>a</i>	213
Congress on Catalysis, 9th Int., Calgary	204	Structure , changes in Pd-Fe alloy, on annealing, <i>a</i>	148
electrical contact fretting, <i>a</i>	95	1,2-dichloroethenes, on Pd(111), Pt(111), <i>a</i>	212
H in Pd-Si alloys	83	Ir dppm μ -oxo complexes, <i>a</i>	34
heterogeneous catalytic oxidation of organics, <i>a</i>	39	Pd-Mn, <i>a</i>	210
metallocenes, in electrocatalytic systems, <i>a</i>	92	Pd-Rare Earth alloys, ordering transformations, H behaviour	130
Pt, Pt alloy electrolytic deposition	188	Pd-U-Si, amorphous, <i>a</i>	210
Pt(II) compounds with purine and pyrimidine bases, <i>a</i>	33	Pd-V, after irradiation, <i>a</i>	210
superconductivity conference	60	Pt-Cu alloys, <i>a</i>	209
thermocouples in the glass industry, <i>a</i>	159	Pt-Fe alloys, shape memory effects	110
water gas shift reaction, <i>a</i>	156	Rh dppm μ -oxo complexes, <i>a</i>	34
Rhodium , coatings, deposition, properties, <i>a</i>	153	Rh ₂ Cl ₂ (CO) ₂ (ETM) ₂ , Rh ₂ Cl ₂ (μ -CO)(ETM) ₂ , <i>a</i>	34
compounds, RhNa-Y, RhNa-X, paramagnetic, <i>a</i>	149	[Co _{1-x} Pt _x] ₃ Ta ₆ PtSe ₁₆ , <i>a</i>	33
Rh ₃ Ti, RhTi, bonding in, <i>a</i>	92	Sulphur , adsorbed, effect on Rh/SiO ₂ activity, <i>a</i>	97
electrodeposition, effect of additives, <i>a</i>	37	pretreatment effects, on reforming catalysts, <i>a</i>	154, 213
electrodes, in molten carbonate fuel cells	200	Superalloys , Pt aluminate coatings on	18, 94
history, of V. V. Lebedinskii	141	Superconductivity	32, 60, 92
Rh particles/ α -Al ₂ O ₃ {0001}, CO desorption from, <i>a</i>	149	Supports , fluoride, Pt structure on, <i>a</i>	31
Rh(111), Rh(100) single crystals, CO oxidation on, <i>a</i>	149	Surface Science	11, 19, 32
Rhodium Alloys, Rhodium-Arsenic-Manganese , effect of pressure on magnetism, <i>a</i>	33	Synthesis Gas	40, 96, 99, 154, 155, 156, 204, 214
Rhodium-Platinum , gauzes for HNO ₃ manufacture	11	Tantalum , H embrittlement, Pt ⁺ ions implantation, <i>a</i>	31
Rhodium-Platinum, Rhodium-Palladium , foils, high temperature oxidation, <i>a</i>	209	Temperature Measurement , <i>a</i>	26, 100
Rhodium Complexes , <i>a</i>	34, 35, 210	Tetramethylbenzidine , electrolysis, using Pt, <i>a</i>	153
Rhodium Iodides , characterisation, <i>a</i>	212	Thermocouples , <i>a</i>	72, 159
Ruthenium , compounds, <i>a</i>	92, 150, 159, 200	Thick Films , <i>a</i>	37, 41, 95, 159, 209, 216
Ruthenium Alloys, Ruthenium-Copper-Nickel-Sulphur , phase diagram, <i>a</i>	33	Thin Films , acrylonitrile on Pt electrodes, electrocatalytic properties, <i>a</i>	34
Ruthenium-Molybdenum , constitution, <i>a</i>	92	M/GaAs, stable contacts, <i>a</i>	41
Ruthenium-Osmium-Vanadium , properties, <i>a</i>	92	Pd, for Pd ₂ Si growth on <100>Si, <i>a</i>	149
Ruthenium-Palladium , membrane catalysts, <i>a</i>	151	H ₂ permeation through, in Pd-MOS sensors, <i>a</i>	213
Ruthenium-Silicon, Ruthenium-Nitrogen-Silicon , <i>a</i>	149	low temperature deposition, <i>a</i>	213
Ruthenium Complexes , anti-cancer treatment reaction with biological molecules	198	phase formation, <i>a</i>	32
Ru(bipy) ₂ Cl ₂ , luminescence, in optical detectors, <i>a</i>	213	Pd, Pt, synthesis, by CVD, from organometallic precursors, <i>a</i>	159
Ru(bpy) ₂ DIP ²⁺ , Ru(bpy) ₂ phen ²⁺ , excitation spectra, <i>a</i>	153	Pt, electrodes, pretreatment, <i>a</i>	92
Ru(bpy) ₂ ²⁺ -viologen-oxidant, electron transfer, <i>a</i>	94	in MOS structures, for NH ₃ , HC, ethylene detectors, <i>a</i>	37
Ru(DIP) ₂ Macro ^{RT} , for DNA cleavage, <i>a</i>	100	PtSi, on polycrystalline Si, growth, <i>a</i>	209
Ru(II) α -diimine + Ag(I), luminescent exciplexes, <i>a</i>	152	Pt-Co, effects of Cr, W on magnetic properties, <i>a</i>	209
[Ru(phi) ₃]Cl ₂ , synthesis, spectroscopic properties, <i>a</i>	34	Pt-gate MOS, as NH ₃ sensors, <i>a</i>	213
[Ru ₂ Os ₂ (bpy) ₄](PF ₆) ₂ , emission properties, <i>a</i>	150	Pt-Re(III) alloys, spectroscopic studies, <i>a</i>	31
Ruthenium Oxides , RuO ₂ , cathode, for H ₂ evolution, <i>a</i>	93	Pt-SnO ₂ , interdiffusion, <i>a</i>	209
in resistors, <i>a</i>	41, 159, 216	Pt/glass, conductance changes on H ₂ , O ₂ chemisorption, <i>a</i>	31
phase equilibria, for resistors, <i>a</i>	209	RhI ₃ , RhI ₂ , photoelectrochemical properties, <i>a</i>	212
thin films, optical properties, <i>a</i>	33	RuO ₂ , optical properties, <i>a</i>	33
RuO ₂ , Bi ₂ Ru ₂ O ₇ , thick film, sensors, <i>a</i>	95	Tin , adatoms to Pt electrode, for ethylene glycol, methanol, formic acid oxidation, <i>a</i>	150, 210
RuO ₂ .xH ₂ O, corrosion and catalytic activity, <i>a</i>	33	Tin Chloride , effect on Pd complexes, <i>a</i>	40
RuO ₂ /TiO ₂ , coatings, surface study, <i>a</i>	153	Tin Oxide , interdiffusion in Pt films, <i>a</i>	209
RuO ₄ , in CCl ₄ , for staining polymers, <i>a</i>	153	Titanium , implanted with Pd ions, corrosion resistance, <i>a</i>	35, 100
Ruthenium Tetroxide , oxidation of PCBs	186	TiO ₂ /Ti electrodes, Pd ion implanted, <i>a</i>	32
Schottky Diodes , Pd/SiO ₂ /n-Si, C-V characteristics, <i>a</i>	41	Toluene , electrochemistry, on porous Pt electrodes, <i>a</i>	211
Pt silicides in, production, <i>a</i>	216	1-Triethylsilylhex-1-yne , formation by Ir complex, <i>a</i>	157
Semiconductors , In ₂ O ₃ + PdCl ₂ , <i>a</i>	37	Tungsten , Pd-WO _x -W system, FEM study, <i>a</i>	91
Pd-MOS, Pt-MOS, for gas detection, <i>a</i>	37, 38	Vanadium Alloys, Vanadium-Ruthenium-Osmium , low temperature properties, <i>a</i>	91
Rh iodides, photoelectrochemical properties, <i>a</i>	212	Vinyl Acetate , formation from C ₂ H ₄ , <i>a</i>	155
Shape Memory , effect in Pt-Fe alloys	110	Vinyl Halides , for vinyl silane synthesis, <i>a</i>	41
Ships , corrosion protection in the Arctic	119	Vinyl Silane , synthesis, on promoted Pd(PPh ₃) ₄ , <i>a</i>	41
Silicon , amorphous hydrogenated, PtSi formation, <i>a</i>	91	Water , electrolysis, at Pt cermet/zirconia, <i>a</i>	211
polycrystalline, As doped, contacts with PtSi, <i>a</i>	100	monitoring pollution in	129
reactions with Pt-V, Pt-Ti, <i>a</i>	148	oxidation, to O ₂ , by Ru complexes, <i>a</i>	158, 212
Silicon Nitride , ceramics	64	photochemical splitting, <i>a</i>	35, 36, 152, 153
Silylation , vinyl halides, on promoted Pd(PPh ₃) ₄ , <i>a</i>	41	purification, on Ru/Ce(IV) oxide, <i>a</i>	156
SMSI , in Pt/Al ₂ O ₃ , in methanation, <i>a</i>	154	Water Gas Shift Reaction , <i>a</i>	97, 156
Sodium Bromate , production by electrolysis, using RuO ₂ /TiO ₂ /Ti anode, <i>a</i>	152	Waveguides , Ti-diffused LiNbO ₃ , made in Pt box	10
Solar Cells , photoelectrochemical, with a discontinuous Pt/n-Si electrode, <i>a</i>	152	Wear , of electrical contacts, <i>a</i>	95
Solid Polymer Electrolytes , fuel cells, <i>a</i>	158	Welding , platinum metals alloys, <i>a</i>	95
Solubility , H ₂ in Pd, Pd alloys, <i>a</i>	32, 148, 151, 210	Wires , Pt-W, Pt-Re-W, for strain gauges, <i>a</i>	213
Space , Ir oxidation resistant alloys for propulsion by resistojets	2	Xenon , adsorbed, photoemission, on Pt ₃ Ni _{1-x} (III), <i>a</i>	91
Spectroscopy , history	28	m-Xylene , isomerisation, on Pt/ Pd/zeolites, <i>a</i>	214
Spirocyclopropanes , production, <i>a</i>	215		
Steel , AISI 4130, effect of Pd addition, <i>a</i>	211		
corrosion prevention in Arctic conditions	119		