Subject Index of Volumes 213/214

Absorption spectroscopy

characterization of the nitrate complexes of Pu(IV) using absorption spectroscopy, ¹⁵N NMR, and EXAFS, 328

Actinide intermetallics

magnetic anisotropy and transport properties of actinide intermetallics, 243

Actinide processing

trends in actinide processing at Hanford, 341

Actinides

accurate determination of the first ionization potential of actinides by laser spectroscopy, 28

resonant magnetic X-ray scattering: a new probe for actinides, 114

thermodynamic database for actinide aqueous inorganic complexes, 125

high-temperature vaporization of transplutonium oxides, 185

density functional theory of spin and orbital magnetization densities in actinide magnets, 238

Actinocenes

electronic structure of actinocenes and actinofullerenes,

Actinofullerenes

electronic structure of actinocenes and actinofullerenes,

Activity coefficients

adjustment of activity coefficients as a function of changes in temperature, using the specific interaction theory, 278

Adsorption

adsorption of actinides on cement compounds, 554 Alkoxides

uranium complexes with amide, alkoxide and thiolate ligands, 15

Alkoxyphosphine

heterobimetallics from uranium or neodymium and d transition metals, 1

Alloys

alloying behavior in selected neptunium binary systems: the role of 5f bonding, 106

Alpha-particle spectrometry

radiochemical methods for the determination of plutonium, americium and curium in typical waste streams, 557 Americium

resistivity and superconductivity of americium metal under pressure up to 25 GPa, 148

probing trivalent actinide ions in heavy metal fluoride glasses via laser excitation, 199

fate of fall-out plutonium and americium in the environment: selected examples, 212

extraction of americium and lanthanides with tributylphosphate from water-deficient nitrate media, 347

separation of plutonium and americium by low-temperature fluorination, 360

on the valency state of americium in (U_{0.5}Am_{0.5})O_{2-x}, 456 dEHP complexes of lanthanides(III) and actinides(III), 523 Amorphous alloy

preparation of actinide compounds in the Oharai facility, 178

Antiferromagnetism

effect of pressure on the electrical resistivity of URu₂Si₂, 387

influence of off-stoichiometry on the properties of the heavy fermion superconductors UNi₂Al₃ and UPd₂Al₃, 509

magnetic phases in UNiGe, 536

Applications

applications of a global nuclear structure model to studies of the heaviest elements, 43

Aqueous phase and gas phase

chemistry of the transactinide elements, 20

Aqueous solutions

actinide phosphonate complexes in aqueous solutions, 300 Atomic nuclei

properties and decay of actinide and transactinide nuclei,

Atomic vibrations

atomic thermal vibrations of the light actinide elements, 426

Binary phase systems

reductive extraction behaviour of actinide and lanthanide elements in molten salt and liquid metal binary phase systems, 354

Biochemistry

biochemistry of the actinides, 318

Bridgman method

preparation of actinide compounds in the Oharai facility, 178

Bulk diffusion

surface reactions and bulk diffusion of U overlayers on Pd, 500

Calculations

calculation of phase diagrams of the actinides, 132 Carbonate complexation

a study of the carbonate complexation of Cm^{III} and Eu^{III} by time-resolved laser fluorescence spectroscopy, 333 Cellulosic materials

effects of cellulosic degradation products on uranium sorption in the geosphere, 475

Ceramics

actinide and rare earth incorporation into zirconolite, 406 Charge-density wave states

twinning as a clue to a CDW-like behavior and to a lack of SME in plutonium metal, 363

Chemical kinetics

oxidation of nuclear fuel (UO₂) by the products of water radiolysis: development of a kinetic model, 93

Chemical properties

chemistry of the transactinide elements, 20

Chemical states

experimental investigations on the chemical state of solid fission-product elements in U₃Si₂, 369

Chernobyl accident

human hair radioactivity in the Chernobyl area, 81

Chromium compounds

basic studies on the kinetics and mechanism of the rapid dissolution reaction of plutonium dioxide under reducing conditions in acidic media, 100

Complex formation

thermodynamic database for actinide aqueous inorganic complexes, 125

Copper oxide

magnetic structure of the uranium-copper double perovskite UBa₂CuO₆, 506

Correlated-electron system

theory of pressure effects and the correlated-electron behavior of uranium monochalcogenides, 120

electrochemical studies of SIMFUELs, 551

Crown ethers

crown ethers as actinide extractants in acidic aqueous biphasic systems: partitioning behavior in solution and crystallographic analyses of the solid state, 305

Crystallographic phase transitions

crystallographic phase transitions in actinide metals as a function of pressure, 268

Crystal structures

magnetic and crystallographic structures in UTX intermetallic compounds, 528

crystal structure of hydride and deuteride of UNiAl, 533 Curie temperature

effect of pressure on the Curie temperature of singlecrystal UGe₂, 383

structure and magnetic properties of U2Co15Ge2 and related compounds, 513

Curium

probing trivalent actinide ions in heavy metal fluoride glasses via laser excitation, 199

luminescence study on determination of the hydration number of Cm(III), 313

a study of the carbonate complexation of Cm^{III} and Eu^{III} by time-resolved laser fluorescence spectroscopy, 333 Czochralski method

preparation of actinide compounds in the Oharai facility, 178

Debye-Waller factors

atomic thermal vibrations of the light actinide elements, 426

 α decay

properties and decay of actinide and transactinide nuclei,

the α -decay of ²³⁶Pu to ²³²U, 433

estimation of neutron radiation damage from actinide decay and fission in the Hanford waste tanks, 560 Decay properties

observation of enhanced nuclear stability near the 162 neutron shell, 61

Decontamination

biochemistry of the actinides, 318

electrolytic decontamination of conductive materials, 450 Defect structure

electrical conductivity and defect structure of lanthanumdoped (U,Pu)O2±x, 378

Density functional theory

density functional theory of spin and orbital magnetization densities in actinide magnets, 238

probing trivalent actinide ions in heavy metal fluoride glasses via laser excitation, 199

Determination

new methods of transplutonium element separation and determination, 290

Deuterides

crystal structure of hydride and deuteride of UNiAl, 533 Differential range method

measurement of kinetic energies of Cs isotopes produced in ¹⁶O+²⁰⁹Bi nuclear fission by differential range method, 420

Differential thermal analysis

alloying behavior in selected neptunium binary systems: the role of 5f bonding, 106

Diffusion

thermodynamic properties and multiphase diffusion paths of the ternary system U-Zr-N, 173

reactions between U-Zr alloys and nitrogen, 366

Diluent paraffin nature

diluent paraffin nature and plutonium(IV) organic solution lamination: new results and new approach, 545

basic studies on the kinetics and mechanism of the rapid dissolution reaction of plutonium dioxide under reducing conditions in acidic media, 100

microbial transformations of radioactive wastes and environmental restoration through bioremediation, 226

Electrical conductivity

electrical conductivity and defect structure of lanthanumdoped (U,Pu)O2±x, 378

Electrical resistivity

effect of pressure on the magnetic phase transitions of UNiGa, 381

effect of pressure on the electrical resistivity of URu₂Si₂, 387

the electrical resistance of PuSb under high pressure, 398 Electrochemical extraction process

spent fuel reprocessing based on electrochemical extraction process (SREEP), 453

Electrochemistry

electrolytic decontamination of conductive materials, 450 electrochemical studies of SIMFUELs, 551

Electrodeposition

electrodeposition of selected alpha-emitting nuclides from ammonium acetate electrolyte, 465

Electrolytic reductions

anion-dependent electron paramagnetic resonance of uranium(V) intermediates in photo- and electrolytic reductions of uranyl complexes in organic solution, 493

Electronic properties

theoretical studies of the structures and electronic properties of U(NH₂)₃ and Np(NH₂)₃, 196

Electronic structure

electronic structure properties of neptunium intermetallics under pressure from Mössbauer spectroscopy, 138 electronic structure of actinocenes and actinofullerenes,

new muffin tin orbital band calculations of equilibrium properties and electronic structure of actinide metals,

electronic structure of excited configurations in uranium,

Electron paramagnetic resonance

anion-dependent electron paramagnetic resonance of uranium(V) intermediates in photo- and electrolytic reductions of uranyl complexes in organic solution, 493

Elements 104 and 105

chemistry of the transactinide elements, 20

Energy distribution

bimodal nature of actinide fission, 423

Enhanced nuclear stability

observation of enhanced nuclear stability near the 162 neutron shell, 61

Enthalpy of formation

thermochemistry of the actinides, 169

Entropy

thermochemistry of the actinides, 169

Environment

fate of fall-out plutonium and americium in the environment: selected examples, 212

Equilibrium

new muffin tin orbital band calculations of equilibrium properties and electronic structure of actinide metals, 410

Equilibrium constants

thermodynamic database for actinide aqueous inorganic complexes, 125

Europium

a study of the carbonate complexation of Cm^{III} and Eu^{III} by time-resolved laser fluorescence spectroscopy, 333

Excitation

thermal lens spectroscopy of plutonium using a laser diode and fiber optics, 481

Excited configurations

electronic structure of excited configurations in uranium, 489

Extraction

new methods of transplutonium element separation and determination, 290

crown ethers as actinide extractants in acidic aqueous biphasic systems: partitioning behavior in solution and crystallographic analyses of the solid state, 305

5f bonding

alloying behavior in selected neptunium binary systems: the role of 5f bonding, 106

Ferromagnetism

structure and magnetic properties of U₂Co₁₅Ge₂ and related compounds, 513

Fiber optics

thermal lens spectroscopy of plutonium using a laser diode and fiber optics, 481

Fine structure

plans to identify heavy elements produced in reactions with cross-sections of 1 pb and below, 74

Fission

fragment mass and kinetic energy distributions from fission of light actinides, 417

estimation of neutron radiation damage from actinide decay and fission in the Hanford waste tanks, 560 Fission-product elements

experimental investigations on the chemical state of solid fission-product elements in U₃Si₂, 369

Fluctuations

giant striction and thermal expansion anomalies in actinide systems with structural instabilities, 486

Fluorescence

probing trivalent actinide ions in heavy metal fluoride glasses via laser excitation, 199

Fluorescence line narrowing

linear and non-linear spectroscopy of tetravalent actinide ions in CeF₄, 207

Fluorescence spectroscopy

a study of the carbonate complexation of Cm^{III} and Eu^{III} by time-resolved laser fluorescence spectroscopy, 333

Fluorides

thermochemistry of the actinides, 169

Fluorination

separation of plutonium and americium by low-temperature fluorination, 360

Fragment angular distribution

mass yield and angular distribution of rare earth elements produced in proton-induced fission of ²⁴⁴Pu, 414

Fusion reactions

production of heavy actinides in incomplete fusion reactions, 460

Gas phase

preparation of nitrogen-rich α -uranium sesquinitride, 444 Germanides

effect of pressure on the Curie temperature of singlecrystal UGe₂, 383

synthesis and characterization of novel ternary uranium germanides with niobium and tantalum, 540

Ground state electronic structure

low temperature absorption spectra and ground state electronic structure of tetrakis(2,6-di-tert-butylphenoxide)-uranium(IV), 497

Hanford waste tanks

estimation of neutron radiation damage from actinide decay and fission in the Hanford waste tanks, 560

Heat capacity

analysis of recent measurements of the heat capacity of uranium dioxide, 159

Heaviest elements

applications of a global nuclear structure model to studies of the heaviest elements, 43

Heavy actinides

spontaneous fission, 67

production of heavy actinides in incomplete fusion reactions, 460

Heavy elements

plans to identify heavy elements produced in reactions with cross-sections of 1 pb and below, 74

Heavy fermions

specific heat of some trans-uranium intermetallic compounds — search for heavy fermions, 111

muon spin relaxation studies of the interplay between magnetism and superconductivity in heavy fermion systems, 232

effect of pressure on the electrical resistivity of URu_2Si_2 , 387

Heavy fermion superconductors

influence of off-stoichiometry on the properties of the heavy fermion superconductors UNi₂Al₃ and UPd₂Al₃, 509

Heavy ion induced fission

measurement of kinetic energies of Cs isotopes produced in ¹⁶O+²⁰⁹Bi nuclear fission by differential range method, 420

Heterobimetallics

heterobimetallics from uranium or neodymium and d transition metals, 1

Heterogeneous kinetics

basic studies on the kinetics and mechanism of the rapid dissolution reaction of plutonium dioxide under reducing conditions in acidic media, 100

High pressure

resistivity and superconductivity of americium metal under pressure up to 25 GPa, 148

structural and physical properties of actinide materials at high pressure, 153

effect of pressure on the magnetic phase transitions of UNiGa, 381

effect of pressure on the electrical resistivity of URu₂Si₂, 387

modeling the high pressure behavior of the actinide monopnictides and monochalcogenides, 391

phase behavior of actinide trihalides under pressure, 394 the electrical resistance of PuSb under high pressure, 398 High-temperature studies

high-temperature vaporization of transplutonium oxides, 185

Human hair

human hair radioactivity in the Chernobyl area, 81 Hydrate melt

extraction of americium and lanthanides with tributylphosphate from water-deficient nitrate media, 347

Hydration number

luminescence study on determination of the hydration number of Cm(III), 313

Hydrides

hydrogen absorption properties of U-Th-Ti-Zr alloys, 467 crystal structure of hydride and deuteride of UNiAl, 533 drogen

preparation of UH₃ by the reaction of U with NH₃ or with a mixture of H₂ and N₂, 447

Hydrolysis

thermodynamic database for actinide aqueous inorganic complexes, 125

Hydroxides

uranium complexes with amide, alkoxide and thiolate ligands, 15

Incorporated radionuclides

the measurement of incorporated radioactive actinides in the body by direct methods, 484

Intermetallic compounds

preparation of actinide compounds in the Oharai facility, 178

Iodine

radiation damage of UO₂ implanted with 100 MeV iodine ions, 351

Ionization potentials

accurate determination of the first ionization potential of actinides by laser spectroscopy, 28

Ion transfer

voltammetric study on the transfer of U, Np, and Pu ions at the aqueous-organic interface facilitated by phosphine oxides, 324

Kinetic energy distributions

spontaneous fission properties of ^{252,254}No and ^{256,258}[104] and the disappearance of the outer fission barrier, 86 fragment mass and kinetic energy distributions from fission of light actinides, 417

Kinetics

measurement of kinetic energies of Cs isotopes produced in ¹⁶O + ²⁰⁹Bi nuclear fission by differential range method, 420

dEHP complexes of lanthanides(III) and actinides(III), 523

Lambda transition

analysis of recent measurements of the heat capacity of uranium dioxide, 159

Lanthanide and actinides

phase behavior of actinide trihalides under pressure, 394 Lanthanides

extraction of americium and lanthanides with tributylphosphate from water-deficient nitrate media, 347

Laser heating

analysis of recent measurements of the heat capacity of uranium dioxide, 159

Laser spectroscopy

accurate determination of the first ionization potential of actinides by laser spectroscopy, 28

linear and non-linear spectroscopy of tetravalent actinide ions in CeF₄, 207

Light actinides

fragment mass and kinetic energy distributions from fission of light actinides, 417

bimodal nature of actinide fission, 423

atomic thermal vibrations of the light actinide elements, 426

Liquid metal

reductive extraction behaviour of actinide and lanthanide elements in molten salt and liquid metal binary phase systems, 354

Liquid scintillation counting

radiochemical methods for the determination of plutonium, americium and curium in typical waste streams, 557

Low-energy fission

mass yield and angular distribution of rare earth elements produced in proton-induced fission of ²⁴⁴Pu, 414

Low-temperature

the electrical resistance of PuSb under high pressure, 398 Low temperature absorption spectra

low temperature absorption spectra and ground state electronic structure of tetrakis(2,6-di-tert-butylphenoxide)-uranium(IV), 497

Luminescence

luminescence study on determination of the hydration number of Cm(III), 313

Magnetic anisotropy

magnetic anisotropy and transport properties of actinide intermetallics, 243

Magnetic phase diagrams

effect of pressure on the magnetic phase transitions of UNiGa, 381

Magnetic phases

magnetic phases in UNiGe, 536

Magnetic structures

magnetic structure of the uranium-copper double perovskite UBa₂CuO₆, 506

magnetic and crystallographic structures in UTX intermetallic compounds, 528

Magnetic superexchange interaction

oxidation states of U and Ti in U-Ti-O ternary mixed oxides, 516

Magnetic susceptibility

specific heat of some trans-uranium intermetallic compounds — search for heavy fermions, 111

oxidation states of U and Ti in U-Ti-O ternary mixed oxides. 516

Magnetism

theory of pressure effects and the correlated-electron behavior of uranium monochalcogenides, 120

muon spin relaxation studies of the interplay between magnetism and superconductivity in heavy fermion systems, 232

magnetic studies of transuranium compounds, 248 Magnetization densities

density functional theory of spin and orbital magnetization densities in actinide magnets, 238

Magnetocrystalline anisotropy

structure and magnetic properties of U₂Co₁₅Ge₂ and related compounds, 513

Mass division

fragment mass and kinetic energy distributions from fission of light actinides, 417

bimodal nature of actinide fission, 423

Mass yield distribution

mass yield and angular distribution of rare earth elements produced in proton-induced fission of ²⁴⁴Pu, 414

Metal columns

thermochromatographic studies of heavy actinides in metal columns, 429

Microorganisms

microbial transformations of radioactive wastes and environmental restoration through bioremediation, 226

Mixed oxide fuel

electrical conductivity and defect structure of lanthanumdoped (U,Pu)O_{2±x}, 378

Molecular orbital calculations

theoretical study of the physicochemical properties of the light transactinides, 33

Molten salt

reductive extraction behaviour of actinide and lanthanide elements in molten salt and liquid metal binary phase systems, 354

Monochalcogenides

modeling the high pressure behavior of the actinide monopnictides and monochalcogenides, 391

Monopnictides

modeling the high pressure behavior of the actinide monopnictides and monochalcogenides, 391

Mössbauer spectroscopy

electronic structure properties of neptunium intermetallics under pressure from Mössbauer spectroscopy, 138 Muon spin relaxation

muon spin relaxation studies of the interplay between magnetism and superconductivity in heavy fermion systems, 232

Neodymium

heterobimetallics from uranium or neodymium and d transition metals, 1

Neptunium

alloying behavior in selected neptunium binary systems: the role of 5f bonding, 106

electronic structure properties of neptunium intermetallics under pressure from Mössbauer spectroscopy, 138

phase relations of the uranium-neptunium-oxygen system, 375

investigation of the neptunium-zirconium system by X-ray diffraction, 402

Neutron diffraction

crystal structure of hydride and deuteride of UNiAl, 533 Neutron radiation damage

estimation of neutron radiation damage from actinide decay and fission in the Hanford waste tanks, 560

Niobium

synthesis and characterization of novel ternary uranium germanides with niobium and tantalum, 540

Nitrates

characterization of the nitrate complexes of Pu(IV) using absorption spectroscopy, ¹⁵N NMR, and EXAFS, 328 Nitric acid

characterization of the nitrate complexes of Pu(IV) using absorption spectroscopy, ¹⁵N NMR, and EXAFS, 328

Nitrides

reactions between U-Zr alloys and nitrogen, 366 Nitrogen

reactions between U-Zr alloys and nitrogen, 366 preparation of UH₃ by the reaction of U with NH₃ or with a mixture of H₂ and N₂, 447

Nitrogen activity

preparation of nitrogen-rich α -uranium sesquinitride, 444 Nuclear fuei

hydrogen absorption properties of U-Th-Ti-Zr alloys, 467 X-ray photoelectron spectra of SIMFUEL, 503

Nuclear waste management

oxidation of nuclear fuel (UO₂) by the products of water radiolysis: development of a kinetic model, 93

Optical response

structural and physical properties of actinide materials at high pressure, 153

Optical spectroscopy

optical spectroscopic studies of uranyl chloride UO₂Cl₂, 471

Organic solution lamination

diluent paraffin nature and plutonium(IV) organic solution lamination: new results and new approach, 545

Organic waste

effects of cellulosic degradation products on uranium sorption in the geosphere, 475

Outer fission barrier

spontaneous fission properties of ^{252,254}No and ^{256,258}[104] and the disappearance of the outer fission barrier, 86 Oxidation

oxidation of nuclear fuel (UO₂) by the products of water radiolysis: development of a kinetic model, 93

Oxidation states

oxidation states of U and Ti in U-Ti-O ternary mixed oxides, 516

Oxides

high-temperature vaporization of transplutonium oxides, 185

on the valency state of americium in $(U_{0.5}Am_{0.5})O_{2-x}$, 456 Dxygen

phase relations of the uranium-neptunium-oxygen system, 375

electrochemical studies of SIMFUELs, 551

Oxygen partial pressure

electrical conductivity and defect structure of lanthanum-doped (U,Pu) $O_{2\pm x}$, 378

Palladium

surface reactions and bulk diffusion of U overlayers on Pd, 500

Partitioning

crown ethers as actinide extractants in acidic aqueous biphasic systems: partitioning behavior in solution and crystallographic analyses of the solid state, 305

Perovskite

magnetic structure of the uranium-copper double perovskite UBa₂CuO₆, 506 Phase diagrams

calculation of phase diagrams of the actinides, 132 thermodynamic properties and multiphase diffusion paths of the ternary system U-Zr-N, 173

Phase relations

alloying behavior in selected neptunium binary systems: the role of 5f bonding, 106

phase relations of the uranium-neptunium-oxygen system, 375

Phase transformations

structure and phase transformations in uranium metal, 262 Phase transitions

structural and physical properties of actinide materials at high pressure, 153

the first 30 years of research on the physical properties of α -U, 254

phase behavior of actinide trihalides under pressure, 394 Phenomenological model

production of heavy actinides in incomplete fusion reactions, 460

Phosphates

speciation of thorium in phosphate-containing solutions, 219

Phosphine oxides

voltammetric study on the transfer of U, Np, and Pu ions at the aqueous-organic interface facilitated by phosphine oxides, 324

Phosphonate complexes

actinide phosphonate complexes in aqueous solutions, 300 Phoswich detectors

simultaneous counting of α , β and γ rays with phoswich detectors, 437

Plutonium

fate of fall-out plutonium and americium in the environment: selected examples, 212

characterization of the nitrate complexes of Pu(IV) using absorption spectroscopy, ¹⁵N NMR, and EXAFS, 328 separation of plutonium and americium by low-temperature

fluorination, 360 twinning as a clue to a CDW-like behavior and to a lack

of SME in plutonium metal, 363

investigation of the Pu-U phase diagram, 372

the α -decay of ²³⁶Pu to ²³²U, 433

electrolytic decontamination of conductive materials, 450 thermal lens spectroscopy of plutonium using a laser diode and fiber optics, 481

Plutonium dioxide

basic studies on the kinetics and mechanism of the rapid dissolution reaction of plutonium dioxide under reducing conditions in acidic media, 100

Polonium

electrodeposition of selected alpha-emitting nuclides from ammonium acetate electrolyte, 465

Polyaza polycarboxylic macrocycles

kinetically and thermodynamically stable isomers of thorium chelates of polyaza polycarboxylic macrocycles, 286

electronic structure properties of neptunium intermetallics under pressure from Mössbauer spectroscopy, 138

crystallographic phase transitions in actinide metals as a function of pressure, 268

effect of pressure on the Curie temperature of singlecrystal UGe₂, 383

Pressure effects

theory of pressure effects and the correlated-electron behavior of uranium monochalcogenides, 120

Profile simulation

optical spectroscopic studies of uranyl chloride UO₂Cl₂, 471

Proton induced fission

bimodal nature of actinide fission, 423

Pulse height

simultaneous counting of α , β and γ rays with phoswich detectors, 437

Pu-U phase diagram

investigation of the Pu-U phase diagram, 372

Pyrazolylborate

synthesis and reactions of U(III) complexes with tripodal nitrogen and oxygen donor ligands, 8

Radiation damage

radiation damage of UO₂ implanted with 100 MeV iodine ions, 351

Radiations

simultaneous counting of α , β and γ rays with phoswich detectors, 437

Radioactive waste

adsorption of actinides on cement compounds, 554

Radioactive wastes characterization

radiochemical methods for the determination of plutonium, americium and curium in typical waste streams, 557 Radioactivity

synthesis reactions and radioactive properties of transactinoid elements, 50

human hair radioactivity in the Chernobyl area, 81 Radioanalysis

electrodeposition of selected alpha-emitting nuclides from ammonium acetate electrolyte, 465

Radiochemical analysis

radiochemical methods for the determination of plutonium, americium and curium in typical waste streams, 557

Radioecology

fate of fall-out plutonium and americium in the environment: selected examples, 212

Radium

electrodeposition of selected alpha-emitting nuclides from ammonium acetate electrolyte, 465

Rare earth elements

mass yield and angular distribution of rare earth elements produced in proton-induced fission of ²⁴⁴Pu, 414

Reaction layer

reactions between U-Zr alloys and nitrogen, 366 Reduction

basic studies on the kinetics and mechanism of the rapid dissolution reaction of plutonium dioxide under reducing conditions in acidic media, 100

electrochemical studies of SIMFUELs, 551

Reductive extraction behaviour

reductive extraction behaviour of actinide and lanthanide elements in molten salt and liquid metal binary phase systems, 354

Relativistic effects

theoretical study of the physicochemical properties of the light transactinides, 33

Relativistic molecular calculations

chemistry of the transactinide elements, 20

Resistivity

resistivity and superconductivity of americium metal under pressure up to 25 GPa, 148

Resonant magnetic scattering

resonant magnetic X-ray scattering: a new probe for actinides, 114

Rise time

simultaneous counting of α , β and γ rays with phoswich detectors, 437

Rydberg series

accurate determination of the first ionization potential of actinides by laser spectroscopy, 28

Salt diapirs

adsorption of actinides on cement compounds, 554

Scanning electron microscopy

radiation damage of UO₂ implanted with 100 MeV iodine ions, 351

Separation

new methods of transplutonium element separation and determination, 290

separation of plutonium and americium by low-temperature fluorination, 360

thermochromatographic studies of heavy actinides in metal columns, 429

Shape memory effect

twinning as a clue to a CDW-like behavior and to a lack of SME in plutonium metal, 363

Shell effects

properties and decay of actinide and transactinide nuclei, 38

SIMFUEL

X-ray photoelectron spectra of SIMFUEL, 503

Simultaneous counting

simultaneous counting of α , β and γ rays with phoswich detectors, 437

Single crystals

the first 30 years of research on the physical properties of α -U, 254

Soft mode

giant striction and thermal expansion anomalies in actinide systems with structural instabilities, 486

Solid solutions

reactions between U-Zr alloys and nitrogen, 366 combility

speciation of thorium in phosphate-containing solutions, 219

Solvent extraction

extraction of americium and lanthanides with tributylphosphate from water-deficient nitrate media, 347

Speciation

adsorption of actinides on cement compounds, 554 Specific heat

specific heat of some trans-uranium intermetallic compounds — search for heavy fermions, 111

Specific interaction theory

adjustment of activity coefficients as a function of changes in temperature, using the specific interaction theory, 278

Spectral hole burning

linear and non-linear spectroscopy of tetravalent actinide ions in CeF₄, 207

Spent fuel reprocessing

spent fuel reprocessing based on electrochemical extraction process (SREEP), 453

Spontaneous fission

properties and decay of actinide and transactinide nuclei, 38

spontaneous fission, 67

Spontaneous fission properties

spontaneous fission properties of ^{252,254}No and ^{256,258}[104] and the disappearance of the outer fission barrier, 86

Stability

applications of a global nuclear structure model to studies of the heaviest elements, 43

plans to identify heavy elements produced in reactions with cross-sections of 1 pb and below, 74

thermodynamic properties and multiphase diffusion paths of the ternary system U-Zr-N, 173

Stabilization

microbial transformations of radioactive wastes and environmental restoration through bioremediation, 226

Stable isomers

kinetically and thermodynamically stable isomers of thorium chelates of polyaza polycarboxylic macrocycles, 286

Stainless steel

electrolytic decontamination of conductive materials, 450 Stoichiometry

influence of off-stoichiometry on the properties of the heavy fermion superconductors UNi₂Al₃ and UPd₂Al₃, 509

Striction

giant striction and thermal expansion anomalies in actinide systems with structural instabilities, 486

Structural transitions

giant striction and thermal expansion anomalies in actinide systems with structural instabilities, 486

Structure

synthesis and reactions of U(III) complexes with tripodal nitrogen and oxygen donor ligands, 8

structure and phase transformations in uranium metal, 262 Sublimation

thermochemistry of the actinides, 169

Superconductivity

resistivity and superconductivity of americium metal under pressure up to 25 GPa, 148

muon spin relaxation studies of the interplay between magnetism and superconductivity in heavy fermion systems. 232

the first 30 years of research on the physical properties of α -U, 254

Surface reactions

surface reactions and bulk diffusion of U overlayers on Pd, 500

Synthesis

synthesis and reactions of U(III) complexes with tripodal nitrogen and oxygen donor ligands, 8

synthesis reactions and radioactive properties of transactinoid elements, 50

Synthetic utility

preparation and synthetic utility of

 $MCl_4(Me_2NCH_2CH_2NMe_2)_2$, where M is uranium or thorium, 11

Tantalum

synthesis and characterization of novel ternary uranium germanides with niobium and tantalum, 540

Temperature effects

adjustment of activity coefficients as a function of changes in temperature, using the specific interaction theory, 278

Tetravalent actinide ions

linear and non-linear spectroscopy of tetravalent actinide ions in CeF₄, 207

Theoretical studies

theoretical studies of the structures and electronic properties of U(NH₂)₃ and Np(NH₂)₃, 196

Thermal expansion

effect of pressure on the Curie temperature of singlecrystal UGe₂, 383

giant striction and thermal expansion anomalies in actinide systems with structural instabilities, 486

Thermal lens spectroscopy

thermal lens spectroscopy of plutonium using a laser diode and fiber optics, 481

Thermochemistry

organo-f-element thermochemistry, 344

Thermochromatographic studies

thermochromatographic studies of heavy actinides in metal columns, 429

Thermodynamic database

thermodynamic database for actinide aqueous inorganic complexes, 125

Thermodynamics

thermochemistry of the actinides, 169

thermodynamic properties and multiphase diffusion paths of the ternary system U-Zr-N, 173

preparation of UH₃ by the reaction of U with NH₃ or with a mixture of H₂ and N₂, 447

dEHP complexes of lanthanides(III) and actinides(III), 523 $ThMn_{12}$ type

microscopic investigations of the $ThMn_{12}$ -type uranium ternaries, 520

Thorium

preparation and synthetic utility of

MCl₄(Me₂NCH₂CH₂NMe₂)₂, where M is uranium or thorium, 11

speciation of thorium in phosphate-containing solutions, 219

Thorium chelates

kinetically and thermodynamically stable isomers of thorium chelates of polyaza polycarboxylic macrocycles, 286

Titrants

organo-f-element thermochemistry, 344

Toxic metals

microbial transformations of radioactive wastes and environmental restoration through bioremediation, 226

Trace elements

biochemistry of the actinides, 318

Transactinides

theoretical study of the physicochemical properties of the light transactinides, 33

Transactinoids

synthesis reactions and radioactive properties of transactinoid elements, 50

Transition metals

density functional theory of spin and orbital magnetization densities in actinide magnets, 238

Transplutonium elements

new methods of transplutonium element separation and determination, 290

Transport properties

magnetic anisotropy and transport properties of actinide intermetallics, 243

Transuranium compounds

magnetic studies of transuranium compounds, 248 Tribalides

phase behavior of actinide trihalides under pressure, 394 Tripodal oxygen donor

synthesis and reactions of U(III) complexes with tripodal nitrogen and oxygen donor ligands, 8

Uranium

heterobimetallics from uranium or neodymium and d transition metals, 1

preparation and synthetic utility of

MCl₄(Me₂NCH₂CH₂NMe₂)₂, where M is uranium or thorium, 11

specific heat of some trans-uranium intermetallic compounds — search for heavy fermions, 111

preparation of actinide compounds in the Oharai facility, 178

microbial transformations of radioactive wastes and environmental restoration through bioremediation, 226

the first 30 years of research on the physical properties of α -U, 254

investigation of the Pu-U phase diagram, 372

phase relations of the uranium-neptunium-oxygen system, 375

the α -decay of ²³⁶Pu to ²³²U, 433

with a mixture of H₂ and N₂, 447

the role of unstable NH_3 in the formation of nitrogen-rich α - U_2N_{3+x} by the reaction of UC or U with NH_3 , 440 preparation of UH_3 by the reaction of U with NH_3 or

electrolytic decontamination of conductive materials, 450 on the valency state of americium in (U_{0.5}Am_{0.5})O_{2-x}, 456 electronic structure of excited configurations in uranium, 480

low temperature absorption spectra and ground state electronic structure of tetrakis(2,6-di-tert-butylphenoxide)-uranium(IV), 497

surface reactions and bulk diffusion of U overlayers on Pd, 500

synthesis and characterization of novel ternary uranium germanides with niobium and tantalum, 540

Uranium complexes

uranium complexes with amide, alkoxide and thiolate ligands, 15

Uranium compounds

theory of pressure effects and the correlated-electron behavior of uranium monochalcogenides, 120 structure and magnetic properties of U₂Co₁₅Ge₂ and related compounds, 513

Uranium dioxide

analysis of recent measurements of the heat capacity of uranium dioxide, 159

Uranium metal

structure and phase transformations in uranium metal, 262 Uranium nickel aluminium

crystal structure of hydride and deuteride of UNiAl, 533 Uranium oxide

magnetic structure of the uranium-copper double perovskite UBa₂CuO₆, 506

Uranium sesquinitride

preparation of nitrogen-rich α -uranium sesquinitride, 444 Uranium sorption

effects of cellulosic degradation products on uranium sorption in the geosphere, 475

Uranyl complexes

anion-dependent electron paramagnetic resonance of uranium(V) intermediates in photo- and electrolytic reductions of uranyl complexes in organic solution, 493

Uranyl ion

optical spectroscopic studies of uranyl chloride UO₂Cl₂, 471

U ternaries

microscopic investigations of the ThMn₁₂-type uranium ternaries, 520

UTX intermetallics

magnetic and crystallographic structures in UTX intermetallic compounds, 528

Valence state

on the valency state of americium in $(U_{0.5}Am_{0.5})O_{2-x}$, 456 Vaporization

high-temperature vaporization of transplutonium oxides, 185

Voltammetry

voltammetric study on the transfer of U, Np, and Pu ions at the aqueous-organic interface facilitated by phosphine oxides, 324

Waste minimization

trends in actinide processing at Hanford, 341

Water radiolysis

oxidation of nuclear fuel (UO₂) by the products of water radiolysis: development of a kinetic model, 93

X-ray diffraction

investigation of the neptunium-zirconium system by X-ray diffraction, 402

X-ray photoelectron spectroscopy

X-ray photoelectron spectra of SIMFUEL, 503

oxidation states of U and Ti in U-Ti-O ternary mixed oxides, 516

X-ray scattering

resonant magnetic X-ray scattering: a new probe for actinides, 114

Zirconium

investigation of the neptunium-zirconium system by X-ray diffraction, 402

Zirconolite

actinide and rare earth incorporation into zirconolite, 406