

## Subject Index of Volume 36

---

- Activation studies**  
 fabrication and activation studies of conducting plastic composite electrodes for redox cells, 29
- Alkaline fuel cells**  
 oxygen electrodes for rechargeable alkaline fuel cells, 323  
 pyrolyzed macrocycles on high surface area carbons for reduction of oxygen in alkaline fuel cells, 547
- Alloy**  
 analysis of conditions that promote passivation on Ca-alloy grids in lead/acid batteries, 451
- Aluminum**  
 experimental studies of transition metal chloride electrodes in undivided cells using molten NaAlCl<sub>4</sub> electrolyte, 537  
 pulse power characteristics of poly(3-methylthiophene) cathodes in Li(SO<sub>2</sub>)<sub>2</sub>AlCl<sub>4</sub> electrolyte, 175
- Anode**  
 performance of dual anode Ni-H<sub>2</sub> cell, 363
- Antimony**  
 premature capacity loss in lead/acid batteries, Sb-free effect and related phenomena, 567
- Arsenic**  
 Li rechargeable cell with poly 3-methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561
- Battery research**  
 Na-metal chloride battery research at JPL, 385
- Bismuth**  
 effect of Bi on corrosion behaviour of Pb in sulphuric acid, 57
- Calcium**  
 analysis of conditions that promote passivation on Ca-alloy grids in lead/acid batteries, 451
- Capacitor**  
 new solid-state electric double-layer capacitor using poly(vinyl alcohol)-based polymer solid electrolyte, 87  
 solid-ionomer electrochemical capacitor, 341
- Capacity loss**  
 premature capacity loss in lead/acid batteries, Sb-free effect and related phenomena, 567
- Carbon dioxide**  
 Au cathode in system Li<sub>2</sub>CO<sub>3</sub>-CO<sub>2</sub>-CO at 800 to 900 °C, 205
- Cathode(s)**  
 Au cathode in system Li<sub>2</sub>CO<sub>3</sub>-CO<sub>2</sub>-CO at 800 to 900 °C, 205  
 influence of macrocyclic compounds on electrochemical reduction of thionyl chloride at glassy carbon cathodes, 127  
 Li rechargeable cell with poly 3-methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561  
 overcharge protection of MnO<sub>2</sub> cathodes, 45  
 pulse power characteristics of poly(3-methylthiophene) cathodes in Li(SO<sub>2</sub>)<sub>2</sub>AlCl<sub>4</sub> electrolyte, 175
- Cobalt**  
 electrochemical behaviour of α-cobalated Ni hydroxide electrodes, 497  
 IR characterization of turbostratic α- and well crystallized α\*-cobalated Ni hydroxides, 113
- Cobalt hydroxide**  
 cyclic voltammetric studies of pure and doped films of Co hydroxide in 1 M KOH, 507
- Common pressure vessel**  
 multiple CPV Ni-H<sub>2</sub> battery, 375
- Computer aided design**  
 of bipolar lead/acid battery, 155
- Computer simulation**  
 of thermal modelling of alkaline hydrogen/oxygen fuel cells, 185
- Corrosion behaviour**  
 effect of Bi on corrosion behaviour of Pb in sulphuric acid, 57

- Current-conducting components  
 new materials for current-conducting components in lead/acid batteries 473
- Cyclability  
 effects of physical constraints on Li cyclability, 517
- Cyclic voltammetric studies  
 of pure and doped films of Co hydroxide in 1 M KOH, 507
- Dimethyl carbonate  
 Li rechargeable cell with poly 3-methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561
- Electric double-layer capacitor  
 new solid-state electric double-layer capacitor using poly(vinyl alcohol)-based polymer solid electrolyte, 87
- Electrochemical behaviour  
 of  $\alpha$ -cobaltd Ni hydroxide electrodes, 497
- Electrochemical capacitor  
 solid-ionomer electrochemical capacitor, 341
- Electrochemical oxidation  
 of methanol on Pt in phosphoric acid solution, 11
- Electrochemical reduction  
 influence of macrocyclic compounds on electrochemical reduction of thionyl chloride at glassy carbon cathodes, 127
- Electrode(s)  
 behaviour of Fe polythiophene positive electrodes in Li cells, 557  
 effects of Pt on Ni electrodes in Ni-H<sub>2</sub> cell, 253  
 electrochemical behaviour of  $\alpha$ -cobaltd Ni hydroxide electrodes, 497  
 experimental device for investigations of formation process of Ni(OH)<sub>2</sub>/NiOOH electrode, 167  
 experimental studies of transition metal chloride electrodes in undivided cells using molten NaAlCl<sub>4</sub> electrolyte, 537  
 fabrication and activation studies of conducting plastic composite electrodes for redox cells, 29  
 impedances of Ni electrodes cycled in various KOH concentrations, 285  
 oxygen electrodes for rechargeable alkaline fuel cells, 323  
 physicochemical properties and performance characteristics of PbO<sub>2</sub> electrode, 439  
 Raman spectral observation of new phase observed in Ni electrodes cycled to failure 279
- Electrode kinetics  
 high energy efficiency and high power density PEM fuel cells, electrode kinetics and mass transport, 299
- Electrolyte(s)  
 experimental studies of transition metal chloride electrodes in undivided cells using molten NaAlCl<sub>4</sub> electrolyte, 537  
 Li batteries utilizing SOCl<sub>2</sub>-SO<sub>2</sub>Cl<sub>2</sub> mixed electrolytes, 1  
 Li rechargeable cell with poly 3 methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561  
 new solid-state electric double-layer capacitor using poly(vinyl alcohol)-based polymer solid electrolyte, 87  
 pulse power characteristics of poly(3-methylthiophene) cathodes in Li(SO<sub>2</sub>)<sub>2</sub>AlCl<sub>4</sub> electrolyte 175
- Electrolyte management  
 of molten-carbonate fuel cells, 529
- Electrolyte solutions  
 ion solvation in Li battery electrolyte solutions, solvent effects on Li ion intercalation in Nb triselenide 17
- Energy efficiency  
 high energy efficiency and high power density PEM fuel cells, electrode kinetics and mass transport, 299
- Fabrication  
 and activation studies of conducting plastic composite electrodes for redox cells, 29
- Failure modes  
 failure modes of lead/acid batteries, 415
- Formation process  
 experimental device for investigations of formation process of Ni(OH)<sub>2</sub>/NiOOH electrode, 167
- Gold  
 Au cathode in system Li<sub>2</sub>CO<sub>3</sub>-CO<sub>2</sub>-CO at 800 to 900 °C, 205

- Hydrogen**  
 effects of Pt on Ni electrodes in Ni-H<sub>2</sub> cell, 253  
 performance of dual anode Ni-H<sub>2</sub> cell, 363  
 physical and chemical analysis of Ni-H<sub>2</sub> cell, 269  
 multiple cell common pressure vessel (CPV) Ni-H<sub>2</sub> battery, 375
- Hydrogen/oxygen fuel cells**  
 computer simulation of thermal modeling of alkaline hydrogen/oxygen fuel cells, 185
- Hydrothermal curing**  
 of lead/acid battery positive plates, 95
- Impedances**  
 of Ni electrodes cycled in various KOH concentrations, 285
- Infrared characterization**  
 of turbostratic  $\alpha$ - and well crystallized  $\alpha^*$ -cobalted Ni hydroxides, 113
- Ion solvation**  
 in Li battery electrolyte solutions, solvent effects on Li ion intercalation in Nb triselenide, 17
- Iron polythiophene**  
 behaviour of Fe polythiophene positive electrodes in Li cells, 557
- Jet Propulsion Laboratory**  
 Na-metal chloride battery research at JPL, 385
- Lead**  
 effect of Bi on corrosion behaviour of Pb in sulphuric acid, 57
- Lead/acid battery(ies)**  
 analysis of conditions that promote passivation on Ca-alloy grids in lead/acid batteries, 451  
 computer aided design of bipolar lead/acid battery, 155  
 failure modes of lead/acid batteries, 415  
 hydrothermal curing of lead/acid battery positive plates, 95  
 new materials for current-conducting components in lead/acid batteries, 473  
 premature capacity loss in lead/acid batteries, Sb-free effect and related phenomena, 567  
 technological progress in sealed lead/acid batteries, 479
- Lead/acid battery technology**  
 modern lead/acid battery technology, new materials, 461
- Lead/acid system**  
 UNESCO expert workshop, theory and practice of lead/acid system, Gaus-sig, F R G , Apr 2-5, 1991, 405
- Lead dioxide electrode**  
 physicochemical properties and performance characteristics of PbO<sub>2</sub> electrode, 439
- Lithium**  
 advances in Li-TiS<sub>2</sub> cell technology, 395  
 Au cathode in system Li<sub>2</sub>CO<sub>3</sub>-CO<sub>2</sub>-CO at 800 to 900 °C, 205  
 behaviour of Fe polythiophene positive electrodes in Li cells, 557  
 Li rechargeable cell with poly 3-methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561  
 pulse power characteristics of poly(3-methylthiophene) cathodes in Li(SO<sub>2</sub>)<sub>2</sub>AlCl<sub>4</sub> electrolyte, 175
- Lithium battery(ies)**  
 ion solvation in Li battery electrolyte solutions, solvent effects on Li ion intercalation in Nb triselenide, 17  
 Li batteries utilizing SOCl<sub>2</sub>-SO<sub>2</sub>Cl<sub>2</sub> mixed electrolytes, 1
- Lithium cyclability**  
 effects of physical constraints on Li cyclability, 517
- Lithium ion intercalation**  
 solvent effects on Li ion intercalation in Nb triselenide, Li battery electrolyte solutions, 17
- Macrocyclic compounds**  
 influence of macrocyclic compounds on electrochemical reduction of thionyl chloride at glassy carbon cathodes, 127
- Manganese dioxide**  
 overcharge protection of MnO<sub>2</sub> cathodes, 45
- Mass transport**  
 high energy efficiency and high power density PEM fuel cells, electrode kinetics and mass transport, 299

## Metal chloride

Na-metal chloride battery research at JPL, 385

## Methanol

electrochemical oxidation of methanol on Pt in phosphoric acid solution, 11

## Mission from Planet Earth

SPE<sup>®</sup> water electrolyzers in support of Mission from Planet Earth, 219

## Molten-carbonate fuel cells

effect of operating temperature on performance of MCFs, 69  
electrolyte management of MCFs, 529

## Nickel

effects of Pt on Ni electrodes in Ni-H<sub>2</sub> cell, 253

experimental device for investigations of formation process of Ni(OH)<sub>2</sub>/NiOOH electrode, 167

impedances of Ni electrodes cycled in various KOH concentrations, 285  
multiple cell common pressure vessel Ni-H<sub>2</sub> battery, 375

performance of dual anode Ni-H<sub>2</sub> cell, 363

physical and chemical analysis of Ni-H<sub>2</sub> cell, 269

Raman spectral observation of new phase' observed in Ni electrodes cycled to failure, 279

## Nickel hydroxide

electrochemical behaviour of  $\alpha$ -cobalated Ni hydroxide electrodes, 497

IR characterization of turbostratic  $\alpha$ - and well crystallized  $\alpha^*$ -cobalated Ni hydroxides, 113

## Niobium triselenide

solvent effects on Li ion intercalation in Nb triselenide, Li battery electrolyte solutions, 17

## Overcharge protection

of MnO<sub>2</sub> cathodes, 45

## Oxygen

computer simulation of thermal modelling of alkaline hydrogen/oxygen fuel cells, 185

pyrolyzed macrocycles on high surface area carbons for reduction of oxygen in alkaline fuel cells, 547

## Oxygen electrodes

for rechargeable alkaline fuel cells, 323

## Passivation

analysis of conditions that promote passivation on Ca-alloy grids in lead/acid batteries, 451

## Performance characteristics

physicochemical properties and performance characteristics of PbO<sub>2</sub> electrode, 439

## Phosphoric acid

electrochemical oxidation of methanol on Pt in phosphoric acid solution, 11

## Phosphoric acid fuel cell assemblies

physical and chemical state of phosphoric acid fuel cell assemblies after long term operation, surface and near-surface analysis, 137

## Physical and chemical analysis

of Ni-H<sub>2</sub> cell, 269

## Physical and chemical state

of phosphoric acid fuel cell assemblies after long term operation, surface and near-surface analysis, 137

## Physical constraints

effects of physical constraints on Li cyclability, 517

## Physicochemical properties

and performance characteristics of PbO<sub>2</sub> electrode, 439

## Plastic composite electrodes

fabrication and activation studies of conducting plastic composite electrodes for redox cells, 29

## Platinum

effects of Pt on Ni electrodes in Ni-H<sub>2</sub> cell, 253

electrochemical oxidation of methanol on Pt in phosphoric acid solution, 11

## Poly(3-methylthiophene)

Li rechargeable cell with poly 3-methylthiophene cathode and LiAsF<sub>6</sub>-dimethyl carbonate electrolyte, 561  
pulse power characteristics of poly(3-methylthiophene) cathodes in Li(SO<sub>2</sub>)<sub>2</sub>AlCl<sub>4</sub> electrolyte, 175

## Poly(vinyl alcohol)

new solid-state electric double-layer capacitor using poly(vinyl alcohol)-based polymer solid electrolyte, 87

## Positive plates

hydrothermal curing of lead/acid battery positive plates, 95

- Power density
  - high energy efficiency and high power density PEM fuel cells, electrode kinetics and mass transport, 299
- Proton exchange membrane fuel cells
  - high energy efficiency and high power density PEM fuel cells, electrode kinetics and mass transport, 299
- Pulse power characteristics
  - of poly(3-methylthiophene) cathodes in  $\text{Li}(\text{SO}_2)_3\text{AlCl}_4$  electrolyte 175
- Pyrolyzed macrocycles
  - on high surface area carbons for reduction of oxygen in alkaline fuel cells, 547
  
- Raman spectral observation
  - of 'new phase' observed in  $\text{Ni}$  electrodes cycled to failure, 279
- Rechargeable alkaline fuel cells
  - oxygen electrodes for rechargeable alkaline fuel cells, 323
- Redox cells
  - fabrication and activation studies of conducting plastic composite electrodes for redox cells, 29
  
- Sodium
  - experimental studies of transition metal chloride electrodes in undivided cells using molten  $\text{NaAlCl}_4$  electrolyte, 537
  - $\text{Na}$ -metal chloride battery research at JPL, 385
- Solvent effects
  - on  $\text{Li}$  ion intercalation in  $\text{Nb}$  triselenide,  $\text{Li}$  battery electrolyte solutions, 17
- Space station
  - space water electrolysis, space station through advanced missions, 235
- Space water electrolysis
  - space station through advanced missions, 235
- SPE® water electrolyzers
  - in support of Mission from Planet Earth, 219
- Sulfur
  - $\text{Li}$  batteries utilizing  $\text{SOCl}_2$ - $\text{SO}_2\text{Cl}_2$  mixed electrolytes, 1
- Sulfuric acid
  - effect of  $\text{Bi}$  on corrosion behaviour of  $\text{Pb}$  in sulphuric acid, 57
  
- Technological progress
  - in sealed lead/acid batteries, 479
- Temperature
  - effect of operating temperature on performance of molten-carbonate fuel cells, 69
- Thermal battery
  - optimization of externally heated thermal battery, 7
- Thermal modelling
  - computer simulation of thermal modelling of alkaline hydrogen/oxygen fuel cells, 185
- Thionyl chloride
  - influence of macrocyclic compounds on electrochemical reduction of thionyl chloride at glassy carbon cathodes, 127
- Titanium
  - advances in  $\text{Li-TiS}_2$  cell technology, 395
- Transition metal chloride electrodes
  - experimental studies of transition metal chloride electrodes in undivided cells using molten  $\text{NaAlCl}_4$  electrolyte, 537
  
- Water electrolysis
  - space water electrolysis, space station through advanced missions, 235
- Water electrolyzers
  - SPE® water electrolyzers in support of Mission from Planet Earth, 219