# SUBJECT INDEX

- Abusive testing of large Li/SOCl<sub>2</sub> cells, 73 Accumulators alkaline, soluble Zn electrode as anode in, 235 Ni-Cd, plastic-bonded electrodes for; IV. Specific problems of positive active layer, 207 Active masses battery, electronic conductivity of limiting factor?, 255 Ageing of C-air electrodes in alkaline electrolytes, problem of, 189 Air -C electrodes, problem of ageing of, in alkaline electrolytes, 189 metal-, batteries, U.S. Government sponsored battery research, 343 Alkali ions both mobile and immobile, solid electrolytes containing, 137 Alkaline accumulators soluble Zn electrode as anode in, 235 Alkaline electrolytes problem of ageing of C-air electrodes in, 189 Alkaline solutions influence of electrolyte additives on anodic dissolution of aluminum in, 245Aluminum influence of electrolyte additives on anodic dissolution of, in alkaline solutions, 245 Anode soluble Zn electrode as, in alkaline accumulators, 235 Anodic dissolution of aluminum in alkaline solutions. influence of electrolyte additives on, 245 Applications characteristics, performance and, of Li-S dioxide primary battery, 35 medical and commercial, Li-I cell for, 15 solar, U.S. Government sponsored battery research, 337
- Battery(ies)
  - button-type Li, using Cu oxide as a cathode, 99
  - cardiac pacemaker, capacity rating system for, 25
  - Li, with voltage compatibility with conventional systems, 83
  - Li/carbonmonofluoride, evaluation of cathode materials for, 111
  - Li/I, performance and reliability of, 3
  - Li-metal sulphide, U.S. Government sponsored battery research, 365
  - Li-S dioxide primary characteristics, performance and applications, 35
  - Li-sulfuryl chloride: discharge behaviour, 263
  - metal-air, U.S. Government sponsored battery research, 343
  - Na-S, U.S. Government sponsored battery research, 355
  - Ni-Fe, U.S. Government sponsored battery research, 323
  - Ni-Zn, U.S. Government sponsored battery research, 327
  - nonaqueous-Li, preparation of iron sulfides and study of their electrochemical characteristics for use in, 89
  - Pb-acid traction, for electric road vehicle propulsion — directions for research and development, 221
  - Pb-acid, U.S. Government sponsored battery research, 309
  - redox, U.S. Government sponsored battery research, 381
  - Zn-Br, performance analysis of, in vehicle and utility applications, 173
  - Zn-halogen, U.S. Government sponsored battery research, 351
- Battery active masses
  - electronic conductivity of limiting factor?, 255

Battery industry

- Li metal for, 127
- Battery programs
  - near-term, overview, U.S. Government sponsored battery research, 303

Battery research U.S. Government sponsored Li-metal sulphide batteries, 365 metal-air batteries, 343 Na-S batteries, 355 Ni-Fe batteries, 323 Ni-Zn batteries, 327 overview, near-term battery programs, 303 Pb-acid batteries, 309 redox batteries, 381 regenerative H-halogen energy storage systems, 377 solar applications, 337 supporting studies and research, 389 Zn-halogen batteries, 351 Bromine performance analysis of Zn-Br batteries in vehicle and utility applications, 173 **Button-type lithium battery** using Cu oxide as a cathode, 99 Cadmium plastic-bonded electrodes for Ni-Cd accumulators; IV. Specific problems of positive active layer, 207 Capacity rating system for cardiac pacemaker batteries, 25 Carbon -air electrodes, problem of ageing of, in alkaline electrolytes, 189 Carbonmonofluoride Li/, battery, evaluation of cathode materials for, 111 Cardiac pacemaker batteries capacity rating system for, 25 Catalytic activity effect of method of preparation on corrosion resistance and, during corrosion of W carbide; II. Changes in catalytic activity of W carbides during corrosion process, 283, of W carbide for H evolution, effect of method of preparation on, 197 Cathode button-type Li battery using Cu oxide as, 99 Cathode materials for Li/carbonmonofluoride battery, evaluation of, 111 Cell(s) D, optimization of, with respect to energy density, storability and safety; primary Li/SOCl<sub>2</sub> cells, 57

large  $Li/SOCl_2$ , abusive testing of, 73 Li-I, for medical and commercial applications, 15 primary Li/SOCl<sub>2</sub>; X. Optimization of D cells with respect to energy density, storability and safety, 57 Characteristics electrochemical, of iron sulfides, and their preparation, for use in a nonaqueous-Li battery, 89 performance and applications of Li-S dioxide primary battery, 35 Chloride battery Li-sulfuryl: discharge behaviour, 263 **Commercial applications** medical and, Li-I cell for, 15 Conductivity electronic, of battery active masses limiting factor?, 255 **Conventional systems** Li batteries with voltage compatibility with.83 Copper oxide button-type Li battery using, as a cathode, 99 **Corrosion resistance** and catalytic activity during corrosion of W carbide, effect of method of preparation on; I. Corrosion resistance of W carbide in sulfuric acid, 273; II. Changes in catalytic activity of W carbides during corrosion process, 283

Development research and, directions for - Pbacid traction batteries for electric road vehicle propulsion, 221 Discharge behaviour

Li-sulfuryl chloride battery, 263 Dissolution

anodic, of aluminum in alkaline solutions, influence of electrolyte additives on, 245

Electric road vehicle propulsion Pb-acid traction batteries for directions for research and development, 221

Electrochemical characteristics of iron sulfides, and their preparation, for use in a nonaqueous-Li battery, 89

Electrochemistry power sources and energy science, 145 Electrode(s) C-air, problem of ageing of, in alkaline electrolytes, 189 plastic-bonded, for Ni-Cd accumulators; IV. Specific problems of positive active layer, 207 soluble Zn, as anode in alkaline accumulators, 235 Electrolytes alkaline, problem of ageing of C-air electrodes in, 189 solid, containing both mobile and immobile alkali ions, 137 **Electrolyte additives** influence of, on anodic dissolution of aluminum in alkaline solutions, 245 **Electronic conductivity** of battery active masses - limiting factor?, 255 **Energy density** storability and safety, optimization of D cells with respect to; primary Li/SOCl<sub>2</sub> cells, 57 Energy science electrochemistry, power sources and, 145 **Energy storage systems** regenerative H-halogen, U.S. Government sponsored battery research, 377 Evaluation of cathode materials for Li/carbonmonofluoride battery, 111 Halogen regenerative H-, energy storage systems, U.S. Government sponsored battery research, 377 Zn-, batteries, U.S. Government sponsored battery research, 351 Hydrogen evolution effect of method of preparation on catalytic activity of W carbide for, 197 Hydrogen-halogen regenerative, energy storage systems, U.S. Government sponsored battery research, 377 Immobile and mobile alkali ions solid electrolytes containing both, 137

Iodine

-Li cell for medical and commercial applications, 15

performance and reliability of Li/I battery, 3

```
Ions
```

alkali, both mobile and immobile, solid electrolytes containing, 137

Iron

Ni-Fe batteries, U.S. Government

sponsored battery research, 323 Iron sulfides

- preparation of, and study of their electrochemical characteristics for use in a nonaqueous-Li battery, 89
- Lead-acid batteries, U.S. Government sponsored battery research, 309

traction batteries for electric road vehicle propulsion — directions for research and development, 221

## Lithium

- abusive testing of large Li/SOCl<sub>2</sub> cells, 73
- batteries with voltage compatibility with conventional systems, 83
- battery, button-type, using Cu oxide as a cathode, 99
- evaluation of cathode materials for Li/carbonmonofluoride battery, 111
- -iodine cell for medical and commercial applications, 15
- -S dioxide primary battery characteristics, performance and applications, 35
- metal, for battery industry, 127
- performance and reliability of Li/I battery, 3
- preparation of iron sulfides and study of their electrochemical characteristics for use in a nonaqueous-Li battery, 89

primary Li/SOCl<sub>2</sub> cells; X. Optimization of D cells with respect to energy density, storability and safety, 57

- Lithium metal
- for battery industry, 127
- Lithium-metal sulphide batteries U.S. government sponsored battery research, 365
- Lithium-sulfuryl chloride battery discharge behaviour, 263

427

Medical applications commercial and, Li-I cell for, 15 Metal-air batteries U.S. Government sponsored battery research, 343 Metal sulphide Li-, batteries, U.S. Government sponsored battery research, 365 Mobile and immobile alkali ions solid electrolytes containing both, 137

### Nickel

plastic-bonded electrodes for Ni–Cd accumulators; IV. Specific problems of positive active layer, 207

Nickel-iron batteries

U.S. Government sponsored battery research, 323

Nickel-zinc batteries

U.S. Government sponsored battery research, 327

Nonaqueous-lithium battery

preparation of iron sulfides and study of their electrochemical characteristics for use in, 89

Optimization

of D cells with respect to energy density, storability and safety; primary Li/SOCl<sub>2</sub> cells, 57

Overview

near term battery programs, U.S. Government sponsored battery research, 303

**Pacemaker batteries** 

cardiac, capacity rating system for, 25 Performance

analysis of Zn-Br batteries in vehicle and utility applications, 173

characteristics and applications of Li-S dioxide primary battery, 35

and reliability of Li/I battery, 3

Plastic-bonded electrodes

for Ni-Cd accumulators; IV. Specific problems of positive active layer, 207

**Positive active layer** 

specific problems of; plastic-bonded electrodes for Ni–Cd accumulators, 207

Power sources electrochemistry, and energy science, 145 Preparation

effect of method of

- on catalytic activity of W carbide for H evolution, 197 on corrosion resistance and catalytic activity during corrosion of W carbide, 273
- of Fe sulfides and study of their electrochemical characteristics for use in a nonaqueous-Li battery, 89

Propulsion

electric road vehicle, Pb-acid traction batteries for — directions for research and development, 221

Redox batteries

U.S. Government sponsored battery research, 381

Regenerative hydrogen-halogen energy storage systems

U.S. Government sponsored battery research, 377

Reliability

performance and, of Li/I battery, 3 Research and development

directions for — Pb-acid traction batteries for electric road vehicle propulsion, 221

Safety energy density, storability and, optimization of D cells with respect to; primary Li/SOCl<sub>2</sub> cells, 57 Sodium-sulfur batteries U.S. Government sponsored battery research, 355 Solar applications U.S. Government sponsored battery research, 337 Solid electrolytes containing both mobile and immobile alkali ions, 137 Storability energy density and safety, optimization of D cells with respect to; primary Li/SOCl<sub>2</sub> cells, 57 Storage systems regenerative H-halogen energy, U.S. Government sponsored battery research, 377 Sulfur Na-, batteries, U.S. Government sponsored battery research, 355

Sulfur dioxide

-Li primary battery — characteristics, performance and applications, 35 Sulfuric acid

- corrosion resistance of W carbide in; effect of method of preparation on corrosion resistance and catalytic activity during corrosion of W carbide, 273
- Sulfuryl chloride battery Li-: discharge behaviour, 263
- Supporting studies and research
  - U.S. Government sponsored battery research, 389
- Testing
- abusive, of large Li/SOCl<sub>2</sub> cells, 73 Thionyl chloride
  - abusive testing of large  $Li/SOCl_2$  cells, 73
  - primary Li/SOCl<sub>2</sub> cells; X. Optimization of D cells with respect to energy density, storability and safety, 57
- **Traction** batteries
  - Pb-acid, for electric road vehicle propulsion — directions for research and development, 221

## Tungsten carbide(s)

- effect of method of preparation on catalytic activity of, for H evolution, 197
  - corrosion resistance and catalytic activity during corrosion of; I. Corrosion resistance of, in sulfuric acid, 273; II. Changes in catalytic activity of, during corrosion process, 283

U.S. Government sponsored battery research

Li-metal sulphide batteries, 365

metal-air batteries, 343 Na-S batteries, 355 Ni-Fe batteries, 323 Ni-Zn batteries, 327 overview, near term battery programs, 303 Pb-acid batteries, 309 redox batteries, 381 regenerative H-halogen energy, storage systems, 377 solar applications, 337 supporting studies and research, 389 Zn-halogen batteries, 351 Utility applications performance analysis of Zn-Br batteries in vehicle and, 173

Vehicle applications utility and, performance analysis of Zn-Br batteries in, 173
Vehicle propulsion road, electric, Ph-acid traction bat-

teries for — directions for research and development, 221 Voltage compatibility

with conventional systems, Li batteries with, 83

#### Zinc

Ni-Zn batteries, U.S. Government sponsored battery research, 327 performance analysis of Zn-Br bat-

teries in vehicle and utility applications, 173

- Zinc electrode
  - soluble, as anode in alkaline accumulators, 235

Zinc-halogen batteries

U.S. Government sponsored battery research, 351