

Publications on lead/acid batteries and related phenomena: 10-year compilation 1984-94

D.A.J. Rand

CSIRO, Division of Minerals, PO Box 124, Port Melbourne, Vic. 3207, Australia

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A. Battery components (lead(II) oxides, electrolyte, separators, etc.)

A1.

Quantitative X-ray diffraction analysis of alpha-lead(II) oxide / beta-lead(II) oxide in lead-acid primary oxide.

R. Stillman, R. Robins and M. Skyllas-Kazacos
Sch. Chem. Eng. Ind. Chem., Univ. NSW, Kensington, NSW 2033, Australia.

J. Power Sources, 13 (1984) 171-80.

A2.

Effect of a gelled electrolyte on characteristics of lead-acid battery electrodes.

N.K. Grigalyuk, T.P. Chizhik and I.A. Aguf
USSR.

Zh. Prikl. Khim. (Leningrad), 57 (1984) 432-5.

A3.

Limitations in the design of lead-acid cells with immobilized electrolyte.

S. Atlung and B. Fastrup
Fys.-Kem. Inst., Tech. Univ. Denmark, DK-2800 Lyngby, Denmark.

J. Power Sources, 13 (1984) 39-54.

A4.

A sensor for the specific gravity of the electrolyte of a lead-acid battery.

H. Nitta, M. Tsubota and K. Yonezu
Japan Storage Battery Co., Ltd, Kyoto, Japan.
GS News Tech. Rep., 43 (1984) 12-17.

A5.

An optical-type hydrometer for stationary lead-acid batteries and its application for control system.

Y. Mekino and T. Matsui
Takatsuki Seisakujo, Yuasa Battery Co., Ltd., Japan.
Yuasa Jiho, 57 (1984) 19-25.

A6.

Lead oxide and its impact on battery performance.

T. Blair
Daelco Inc., Los Angeles, USA.
Improvements in Alloys, Oxides and Expanders for Lead Batteries. International Meeting of Battery Technologists and Lead Industry Representatives, 1984, Lead Development Assoc., London, UK, pp. 8-14.

A7.

X-ray diffraction analysis of Barton oxides.

A. de la Torre, M. Torralba, A. Garcia and P. Adeva
CSIC, Madrid, Spain.
J. Power Sources, 15 (1985) 77-92.

A8.

Quantitative analysis of orthorhombic and tetragonal lead monoxide mixtures using internal standard Raman spectroscopy.

G.M. Trischan
Johnson Controls Inc., Milwaukee, USA.
In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 33-43.

A9.

Investigations on acid stratification in lead-acid batteries.

J. Meiwes

RWTH, Aachen, FRG.

7th International Symposium on Electric Vehicles, 26-29 June 1984, Versailles, France, pp. 41-6.

A10.

Simple but informative experiments on a plain separator for lead-acid batteries.

F.L. Tye and A.L.S. Vasanthakumar

Middlesex Polytech., London, UK.

J. Power Sources, 15 (1985) 157-67.

A11.

A study of the phase composition, crystallinity, morphology, porosity and surface area of leady oxides used in lead/acid battery plates.

G.L. Corino, R.J. Hill, A.M. Jessel, D.A.J. Rand and J.A. Wunderlich

CSIRO, Div. Miner. Chem., P.O. Box 124, Port Melbourne, Vic. 3207, Australia.

J. Power Sources, 16 (1985) 141-68.

CA: 104(10) 71742v.

A12.

Battery separators — a worldwide overview — trends to the future.

J.Q. Selsor

USA.

Proc. Battery Council International 1985 Convention, Toronto, Canada (Battery Council International, Chicago, USA, 1985), pp. 52-56.

A13.

Separators and their effect on lead-acid battery performance.

J.B. Doe and P.W. Lemke

GNB Inc., Langhorne, USA.

Conf. Proc. INTELEC '86: International Telecommunications Energy Conference (Cat. No. 86CH2328-3), 19-22 Oct. 1986, Toronto, Canada, IEEE, New York, USA, pp. 67-71.

A14.

Advances in high-efficiency lead-acid rechargeable battery technology.

R. Walk, G. Mayer, P. Howard, R. Blanyer, C. Mathews and B.E. Jay

Tracor Inc., Austin, USA.

Proc. Int. Power Sources Symp., 32 (1986) 368-79.

CA: 107(12) 99659j.

A15.

Current technology of separators for sealed (recombination) lead/acid batteries.

Y. Fujita

Dexter Crop., Windsor Locks, USA.

J. Power Sources, 19 (1987) 175-9.

CA: 107(2) 10309z.

A16.

Separator technology for lead/acid batteries.

J.W. Reitz

Evanite Battery Sep., Inc., Corvallis, USA.

J. Power Sources, 19 (1987) 181-8.

CA: 106(26) 216900y.

A17.

Development of synthetic resin containers for large stationary lead-acid batteries.

T. Iwamura and A. Yokogi

Yuasa Denchi, Japan.

Yuasa Jiho, 62 (1987) 16-22.

CA: 107(4) 26002e.

A18.

Innovations and developments in oxide production for lead/acid batteries.

K.H. Brockmann

Heubach and Lindgens Eng. GmbH, D-3394, Langelsheim 1, Germany.

J. Power Sources, 23 (1988) 87-91.

CA: 109(2) 9305e.

A19.

Update of separator technology for lead/acid batteries.

J.W. Reitz

Evanite Battery Separator, Inc., Corvallis, OR, USA.

J. Power Sources, 23 (1988) 109-11.

CA: 109(2) 9307g.

A20.

A comparison of flooded, gelled and absorptive-separator lead/acid cells.

A.M. Harman

Chloride Tech. Ltd., Swinton, Manchester, UK.

J. Power Sources, 23 (1988) 127-34.

CA: 109(2) 9310c.

A21.

Envelope-separator technology for lead/acid automotive batteries.

J. Schneider

Grace GmbH, D-2000, Norderstedt, Germany.

J. Power Sources, 23 (1988) 113-18.

CA: 109(2) 9308h.

A22.

Volcanized rubber post seal for lead-acid batteries a new generic type.

W.B. Brecht and S.S. Misra

C and D Charter Power Syst., Plymouth Meeting, PA, USA.

Conf. Proc. INTELEC '88: Tenth International Telecommunications Energy Conference (IEEE Cat. No. 88CH2653-4), 30 Oct. - 2 Nov. 1988, San Diego, CA, USA) pp. 104-13.

A23.

Current status of separators for automotive batteries.

K. Kitagawa and T. Shimada

Odawara Plant, Yuasa Battery Co., Ltd., Odawara, Japan.

Yuasa Jiho, 66 (1989) 59-63.

CA: 111(14) 118076t.

A24.

Relating recombination mat separator properties to sealed lead/acid battery performance.

D.A. Crouch Jr. and J.W. Reitz

Battery Sep. Div., Evanite Fiber Corp., Corvallis, OR, USA.

J. Power Sources, 31 (1990) 125-33.

CA: 113(16) 135681v.

A25.

Method and device for testing separators by measuring local transverse electrical resistance.

V.V. Ionov, V.V. Isakevitch, E.E. Katalevsky and A.J. Chernokoz

NPOO 'Polimersintez', Vladimir, USSR.

J. Power Sources, 30 (1990) 321-3.

A26.

The effects of separator design on the discharge performance of a starved lead-acid cell.

T.V. Nguyen, R.E. White and H. Gu

Dep. Chem. Eng., Texas A and M Univ., College Station, TX, 77813-3122, USA.

J. Electrochem. Soc., 137 (1990) 2998-3004.

CA: 114(2) 9598f.

A27.

Water vapor permeability of plastics used for electrolyte immobilized lead-acid battery containers.

F.J. Vaccaro and J.A. Klatte

AT&T Bell Labs., Murray Hill, NJ, USA.

Conf. Proc. INTELEC '89. Eleventh International Telecommunications Energy Conference. Conference Proceedings (Cat. No. 89CH2849-8), 15-18 Oct. 1989, Florence, Italy, pp-6.4/1-5.

A28.

The distribution of voltage losses among components of a battery.

H. Gu

Dept. Phys. Chem., General Motors Res. Lab., Warren, MI, USA.

J. Appl. Electrochem., 19 (1989) 505-11.

A29.

Recent advances in polyethylene separator technology.

M.J. Weighall

Cookson Entek Ltd., Newcastle upon Tyne, UK.

J. Power Sources, 34 (1991) 257-68.

A30.

New developments in control valve-regulated battery separators.

G.C. Zguris, D.W. Klauber and N.L. Lifshutz

Hollingsworth and Vose Co., West Groton, MA, USA.

Symp. Proc. Power Sources 13. Research and Development in Non-Mechanical Electrical Power Sources. The 17th International Power Sources Symposium, 8-11 April 1991, Bournemouth, UK, pp. 45-57.

CA: 117(26) 254797e.

A31.

From leaf-type to pockets: development trends in Western Europe for automotive battery separators.

W. Böhnstedt and A. Weiss

Grace GmbH, Battery Separator Tech. Center, Norderstedt, Germany.

J. Power Sources, 38 (1992) 103-10.

CA: 117(6) 52315k.

A32.

A correlation between porous structure of the separator and barodynamic characteristics of sealed lead/acid accumulators.

B.I. Tsenter, Yu. Popova, R.V. Mustafin, J. Jindra, M. Musilova and J. Mrha

All-Union Sci. Res. Accumulator Inst., Leningrad, Russia.

J. Power Sources, 39 (1992) 179-83.

CA: 117(16) 154460w.

A33.

Worldwide trends in battery separator technology and usage.

M.J. Weighall

Cookson Entek Ltd., Newcastle upon Tyne, UK.

J. Power Sources, 40 (1992) 195-212.

CA: 118(12) 106211q.

A34.

Microporous polyethylene separators — today and tomorrow. Separator development trends for modern automotive batteries.

W. Böhnstedt

Grace GmbH, Battery Separator Tech. Center, Norderstedt, Germany.

J. Power Sources, 42 (1993) 211-20.

CA: 119(4) 31476q.

A35.

Aspects of lead/acid battery technology. 7. Separators.

L. Prout

Corbridge, Northumberland, UK.

J. Power Sources, 46 (1993) 117-38.

A36.

Influence of separator structure on the performance of valve-regulated batteries.

K. Peters

ENTEK Manufacturing Inc., Lebanon, OR, USA.

J. Power Sources, 42 (1993) 155-64.

CA: 118(26) 258048e.

A37.

Performance characteristics of lead oxides in pasted lead/acid battery electrodes.

S.E. Afifi, A.E. Saba and A.Y. Shenouda

Electrometall. La., Central Metall. Res. Dev. Inst., Cairo, Egypt.

J. Power Sources, 46 (1993) 285-96.

CA: 120(8) 81476f.

A38.

Electrolyte stratification in lead/acid batteries: effect of grid antimony and relationship to capacity loss.

L. Apăteanu, A.F. Hollenkamp and M.J. Koop

CSIRO, Div. Miner. Prod., P.O. Box 124, Port Melbourne, Vic. 3207, Australia.

J. Power Sources, 46 (1993) 239-50.

CA: 120(8) 81472b.

A39.

Aspects of lead/acid battery technology. 8. Battery oxide.

L. Prout

Corbridge, Northumberland, UK.

J. Power Sources, 47 (1994) 197-217.

A40.

Phase composition and particle size distribution of lead powders obtained by electro-erosion dispersion and used in battery electrodes.

G.N. Dubrovskaya, A.V. Pukalenko, N.V. Olekseenko, D.P. Semkin and V.T. Khimich

Cherkass. Inzh.-Tekhnol. Inst., Ukraine.

Poroshk. Metall. (Kiev), 9-10 (1994) 116-21.

CA: 122(18) 220241g.

A41.

Glass-fibre separators for valve-regulated batteries.

H. Miura and H. Hosono

Nippon Sheet Glass Co. Ltd., Yokkaichi City, Japan.

J. Power Sources, 48 (1994) 233-9.

A42.

New concept of electrolyte retainer for valve-regulated lead-acid (VRLA) batteries. (Part 4). Traction vehicle.

T. Yoshioka, M. Shiomi, K. Takahashi and K. Nishida

Nippon Denchi K.K., Japan.

GS News Tech. Rep., 53 (1994) 5-9.

CA: 122(16) 192338y.

A43.

Study of protective properties of galvanic coatings of cathode copper leads in lead-acid battery.

M.V. Lushina and G.A. Kolikova

Nauchno-issled. Akkumulyatornyi Inst., St. Petersburg, Russia.

Zh. Prikl. Khim. (St. Petersburg), 67 (1994) 296-9.

CA: 122(18) 218519k.

A44.

Barium metaplumbate for lead/acid batteries.

W.H. Kao, S.L. Haberichter and P. Patel

Johnson Controls Battery Group, Inc., Adv. Battery Res., Milwaukee, WI, 53201, USA.

J. Electrochem. Soc., 141 (1994) 3300-5.

CA: 122(6) 60101f.

B. Lead and lead alloys (including battery recycling)**B1.**

Effect of beryllium, selenium and their compounds on the properties of lead-antimony alloys (for use in batteries).

M. Abdel-Reihim, P. Faber, N. Hess and W. Reif

Inst. Metallforsch. - Metallkd., Tech. Univ. Berlin, FRG.

Metall (Berlin), 38 (1984) 28-32.

B2.

Structure and mechanical properties of lead alloys for expanded metal grids after deformation and recrystallization.

M. Abdel-Reihim, B. Preibisch and W. Reif

Inst. Metallforsch. - Metallkd., Tech. Univ. Berlin, FRG.

Metall (Berlin), 38 (1984) 407-11.

B3.

Effect of thermomechanical treatment on hardness and structure of lead-calcium-bismuth alloys.

F. Haessner, W. Wunderlich and P. Wehr

Inst. Werkstoffe, Tech. Univ. Braunschweig, FRG.

Metall (Berlin), 38 (1984) 411-17.

B4.

A rotating ring-disk electrode study of impurity effects on lead corrosion in sulfuric acid.

M. Skyllas-Kazacos

Sch. Chem. Eng., Univ. NSW, Kensington, NSW 2033, Australia.

J. Power Sources, 13 (1984) 55-64.

B5.

Solid state electro-oxidation processes on lead and lead alloys in the lead(IV) oxide/lead(II) sulfate regions.

E. Hameenoja and N.A. Hampson

Dept. Chem., Univ. Technol. Loughborough, Leics., UK.

J. Appl. Electrochem., 14 (1984) 449-58.

B6.

Polarization behaviour of lead in sulfuric acid and phosphoric acid solutions.

S. Sternberg and A.G. Mateescu

Fac. Utilaje Ing. Process. Chirn. Inst. Politeh. Bucuresti, Bucharest, Romania.

Rev. Chim. (Bucharest), 35 (1984) 510-14.

B7.

Strain softening behaviour of Pb-0.064Ca-0.44Sn wrought sheet.

D.E. Kelly and P. Niessen

Dep. Mech. Eng., Univ. Waterloo, Waterloo, Ontario, Canada.

Met. Sci., 18 (1984) 467-70.

B8.

Battery lead alloys and grid technology.

Battery Society of India

B-6/7 Shopping Centre, Safdarjung Enclave, New Delhi 110029, India.

Battery Society of India, 1984, 86 pp.

B9.

Influence of pressure during solidification on the structure of some Pb-Sn alloys.

N.A. El-Mahallawy and M.A. Taha.

11th Inter. Press. Die Cast. Conf., Lyon, 19-20 June 1984.

B10.

Continuous refining of secondary lead.

J.E. Bowers and R.D. Johnston

BNF Met. Technol. Cent., Wantage, Oxfordshire, UK.

In M.J. Jones and P. Gill (eds.), *Miner. Process Extr. Metall.*, Pap. Int. Conf., 1984, pp. 63-71.

B11.

Atomic absorption spectrometry of lead by suction-flow hydride generation-heated quartz cell atomization.

T. Kumamaru, F. Nakata, S. Hara, H. Matsuo and M. Kiboku
Fac. Integrated Arts Sol., Hiroshima Univ., Hiroshima, 730, Japan.

Bunseki Kagaku, 33 (1984) 624-7.

B12.

Effect of structure on acoustic emission during solidification of lead-antimony alloys.

H.M. Tensi, D. Berndt and B.E. Kallup

Inst. Werkstoff-Verarbeitungswiss., Tech. Univ. München, D-8000/2, Munich, FRG.

Metall (Berlin), 38 (1984) 820-4.

B13.

Intrinsic quality of high-purity leads for use as cathode active material for lead-acid batteries.

K. Miyazaki and M. Sumida

Mitsui Mining and Smelting Co., Ltd., Takehara, Japan.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 78-85.

B14.

Improved lead alloys for battery making.

R.D. Prengaman

RSR Corp., Dallas, USA.

Improvements in Alloys, Oxides and Expanders for Lead Batteries. International Meeting of Battery Technologists and Lead Industry Representatives, 1984, Lead Development Assoc., London, UK, pp. 3-7.

B15.

Advanced battery grid alloys.

R.D. Prengaman

RSR Corp., Dallas, USA.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 201-13.

B16.

Casting behaviour and properties of lead-calcium-(tin)-(aluminium) alloys for storage battery grid plates.

C. Standke and S. Engler

Rhenisch-Westfaelischen Tech. Hochsch., Aachen, FRG.

Giessereiforschung, 36 (1984) 149-59.

B17.

Antimony-free battery alloys.

V.I. Bolotovskii and G.V. Krivchenko

USSR.

Khim. Istochniki Toka, L., (1984) 37-40.

B18.

Effect of alloying additions on the age hardening of lead-antimony alloys for battery grids.

M. Abdel-Reihim, R. Moehler and W. Reif

Tech. Univ., Berlin, FRG.

Metall (Berlin), 39 (1985) 49-53.

B19.

Studies on cadmium addition to lead low-antimony alloy for battery application.

K. Ravi, K. Dakshinamurthy, P. Rao and V. Vasudeva

Cent. Electrochem. Res. Inst., Karaikudi, India.

Trans. Indian Inst. Met., 37 (1984) 263-6.

B20.

Selenium — an important additive for lead-acid battery alloys.

B.E. Kallup and D. Berndt

Varta Batterie AG, Kelkheim, FRG.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 214-23.

B21.

Anodic corrosion of lead in phosphoric acid solutions.

A.G. Mateescu and C.D. Mateescu

Intreprinderea "Accumulatorul", Bucharest, Romania.

Rev. Chim., 35 (1984) 933-6.

B22.

Corrosion of lead and its alloys in mixed sulfuric acid - phosphoric acid solutions.

S. Sternberg, A.G. Mateescu, V. Branzoi and C.D. Mateescu

Inst. Politeh., Bucharest, Romania.

Rev. Chim., 35 (1984) 1108-13.

B23.

Corrosion in lead-acid batteries having no shedding effect.

J. Alzeiu, N. Koechlin, N. Lecaude and J. Robert

Lab. de Genie Electrique de Paris, Gif-sur-Yvette, France.

7th International Symposium on Electric Vehicles, 26-29 June 1984, Versailles, France, pp. 59-62.

B24.

Mechanism of the processes during anodic oxidation of a lead electrode in sulfuric acid solutions.

D. Pavlov

Cent. Lab. Electrochem. Power Sources, Sofia, 1040, Bulgaria.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 110-25.

B25.

Positive-grid corrosion in a deep discharge cycled lead-acid battery. Part I: cycling of bare antimonial grid.

B.K. Mahato and J.L. Strebe

Johnson Controls Inc., Milwaukee, USA.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 154-65.

B26.

Resolution of discrepancies in the electrochemical polarization behaviour of lead anodes positive to the lead dioxide / lead sulfate equilibrium potential.

M.E. Fiorino

AT&T Bell Labs., Murray Hill, NJ, USA.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 166-180.

B27.

The electrochemical and morphological behaviour of lead and its alloys in 5 M sulfuric acid.

S. Webster, P.J. Mitchell, N.A. Hampson and J.I. Dyson
Loughborough Univ., Loughborough, UK.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 181-9.

B28.

Active-passive transition of lead in sulfuric acid solutions.

C.V. D'Alkaine and J.M. Cordeiro

DQ UFSCar, Sao Carlos, Brazil.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 190-200.

B29.

Corrosion and growth of expanded grids for maintenance-free batteries.

E.M.L. Valeriote, J. Sklarchuk and M.S. Ho

Cominco Ltd., Mississauga, Ontario, Canada.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 224-40.

B30.

Electrochemical and photoelectrochemical oxidation of the passive film on Pb containing a preformed PbO layer in H₂SO₄.

R.G. Barradas and D.S. Nadezhdin

Carleton Univ., Ottawa, Canada.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 126-141.

B31.

Photoelectrochemical characterization of lead corrosion films.

G.H. Brilmyer

Johnson Controls Inc., Milwaukee, USA.

In K.R. Bullock and D. Pavlov (eds.), *Advances in Lead-Acid Batteries*, Electrochem. Soc., Proc. Vol. 84-14, 1984, pp. 142-153.

B32.

Research in lead marketing.

J.F. Cole

ILZRO, New York, USA.

Metall (Berlin), 39 (1985) 844-6.

B33.

Metallography of lead-antimony alloys of the battery industry.

B.E. Kallup

VARTA Batterie AG, Kelkheim, FRG.

Sonderb. Prakt. Metallogr., 16 (1985) 222-32.

CA: 103(26) 218238a.

B34.

Metallography of selenium grain refined lead-antimony alloys for battery applications.

B.E. Kallup

VARTA Batterie A.G., Kelkheim, FRG.

Proc. Int. Symp. Ind. Uses Selenium Tellurium, 3rd, Selenium-Tellurium Dev. Assoc., Darien, Conn, USA, 1985, pp. 108-17.

B35.

Corrosion behaviour of lead-antimony battery grid alloys in sulfuric acid solutions.

S. Zhao, W. Gu, Y. Lu, W. Song and Z. Jiang

Changchun Inst. Appl. Chem., Acad. Sin., Peop. Rep. China.

Yingyong Huaxue, 2 (1985) 50-4.

CA: 103(24) 199687c.

B36.

The influence of composition and microstructure on the corrosion behaviour of lead-calcium-tin alloys in sulfuric acid solutions.

D. Kelly, P. Niessen and E.M.L. Valeriotte

Univ. Waterloo, Canada.

J. Electrochem. Soc., 132 (1985) 2533-8.

CA: 104(4) 22982q.

B37.

Some aspects of grid corrosion in lead-acid batteries.

M. Maja and P. Spinelli

Politec. Torino, Turin, Italy.

Werkst. Korros., 36 (1985) 554-60.

CA: 104(10) 71728v.

B38.

Mechanical properties and corrosion behaviour of lead-silicon carbide fiber and lead carbon fiber composites made by electrodeposition.

J.C. Viala, M. El Morabit and J. Bouix

CNRS, Villeurbanne, France.

Mater. Chem. Phys., 13 (1985) 393-408.

B39.

The cycle life of various lead alloys in 5 M sulphuric acid.

S. Webster, P.J. Mitchell, N.A. Hampson and J.I. Dyson

Loughborough Univ., Loughborough, UK.

J. Electrochem. Soc., 133 (1985) 133-6.

CA: 104(10) 77562h.

B40.

Electroreduction processes of lead and lead alloys in 5 M sulphuric acid.

S. Webster, P.J. Mitchell, N.A. Hampson and J.I. Dyson

Loughborough Univ., Loughborough, UK.

J. Electrochem. Soc., 133 (1985) 137-139.

B41.

Electrochemical corrosion measurements on lead grids for the maintenance-free lead-acid battery.

M. Schönborn and R. Aumayer

Robert Bosch GmbH, Stuttgart, FRG.

In L.J. Pearce (ed.), *Power Sources 10*, The Paul Press, London, 1985, pp. 537-554.

B42.

Corrosion of lead in sulphuric acid at high potentials.

K.R. Bullock and M.A. Butler

Johnson Controls, Inc., Milwaukee, USA.

J. Electrochem. Soc., 133 (1986) 1085-90.

CA: 105(4) 31850t.

B43.

Hydrogen evolution on lead-tin alloys.

A. Bickerstaffe, S. Ellis, P.J. Mitchell, M. Johnson and N.A. Hampson

Univ. Loughborough, Loughborough, UK.

J. Power Sources, 17 (1986) 361-7.

CA: 105(12) 100458k.

B44.

An examination of corroded positive grids from a lead-acid battery.

P. Gruber, E. Faschingbauer and J. McGoldrick

Banner Batterien, Linz, Austria.

J. Power Sources, 17 (1986) 369-77.

CA: 105(12) 100459m.

B45.

Grid alloys for lead-acid battery. III. Lead-antimony-arsenic-silver alloy.

S. Zhao, W. Gu, Y. Lu, J. Fang, S. Xu and Z. Jiang

Changchun Inst. Appl. Chem., Acad. Sin., Peop. Rep. China.

Yingyong Huaxue, 3 (1986) 33-6.

CA: 105(14) 118085w.

B46.

Some aspects of corrosion in lead-acid batteries.

K. Peters and N.R. Young

Chloride Tech. Ltd., Manchester, UK.

Inst. Chem. Eng. Symp. Ser., 98 (1986) 203-15.

CA: 105(18) 156096h.

B47.

Metallographic and corrosion studies on titanium reinforced large lead-acid battery grids.

W.A. Ferrando and K.L. Vasanth

Nay. Surf. Weapons Cent., Silver Spring, USA.

Load Levelling Energy Conserv. Ind. Processes, Electrochem. Soc., Proc. Vol. 86-10, 1986, pp. 33-47.

CA: 105(20) 194447f.

B48.

Positive pole corrosion in lead-acid batteries.

T. Take and K. Akuto

NTT Electr. Commun. Labs., Musashino-shi, Japan.

Trans. Inst. Electron. and Commun. Eng. Jpn. Part B (Japan), J69B (1986) 331-9.

B49.

Linear potential sweep voltammetric studies on lead in aqueous sulphuric acid. 1. Effect of acid concentration.

K. Das and K. Bose

Jadavpur Univ., Calcutta, India.

Bull. Electrochem., 2 (1986) 387-90.

CA: 105(24) 211839e.

B50.

Corrosion testing of lead alloys used as cathode grids in batteries.

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VARTA Batterie AG, Res. and Dev. Centre, Kelkheim, Germany.

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Lab. d'Ionique et d'Electrochimie du Solide (LIESG) associee au CNRS (URAD 12 13), ENS d'Electrochimie et d'Electrometallurgie de Grenoble INPG-ENSEEG, 38402, Saint-Martin-d'Herès, France.
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G243.

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*Dept. Mech. Eng. and Mater. Sci., Duke Univ., Durham, NC,
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*Cominco Prod. Technol. Cent., Mississauga, Ontario, LSK
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