

## Recent Publications on Lead/Acid Batteries and Related Phenomena: 1994, Nos. 1 and 2, B1–B22

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The aim of this abstracting service is to provide workers with a review of paper titles in the area of lead/acid batteries, and in particular to assist those workers who do not have ready access to citation facilities. The intention is to publish the compilation half-yearly and an author index for a given year will be provided when citations for that year are complete.

The publications are grouped under broad titles and, where possible, are numbered in chronological sequences that will be continued in each succeeding issue. Due to the unavoidable delay between the appearance and the citation of papers, the two issues of each year will necessarily include items published both during that year and during the previous year.

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

- 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. Dubrovskaja, 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. (S.-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)**

- B206. An *in situ* study of the effect of tin on the passivation of lead-tin alloys.

P. Simon, N. Bui and F. Dabosi  
Ecole Nationale Supérieure de Chimie de Toulouse, Laboratoire de Metallurgie Physique, URA 445, 118 Route de Narbonne, 31077, Toulouse, France.

J. Power Sources, 50 (1994) 141-52.

CA: 121(2) 13857b.

- B207. Use of low antimony alloys in storage battery for automobiles.

T. Li  
State-run Fact. No. 481, Shandong, 255056, Peop. Rep. China.

Dianchi, 24 (1994) 61-4.

CA: 121(6) 61368t.

- B208. Effect of magnetic field on the microstructure and macrosegregation in directionally solidified Pb-Sn alloys.
- S.N. Tewari, R. Shah and S. Hui  
*Dept. Chem. Eng., Cleveland State Univ., OH, USA.*
- Metallurgical and Materials Transactions A (Physical Metallurgy and Materials Science), 25A (1994) 1535-44.
- INSPEC: A9419-8130M-003.
- B209. Selection of method for monitoring antimony content in products of secondary lead raw material processing.
- Anon  
*St. Petersburg Gos. Tekh. Univ., Russia.*
- Zh. Prikl. Khim. (S.-Petersburg), 67 (1994) 1104-6.
- CA: 122(18) 229577d.
- B210. Aspects of lead/acid battery technology. 9. Grids.
- L. Prout  
*Aydon Road, Corbridge Northumberland, UK.*
- J. Power Sources, 50 (1994) 193-257.
- CA: 121(2) 13766w.
- B211. Minor elements in lead materials used for lead/acid batteries. I. Hydrogen and oxygen-gassing characteristics.
- L.T. Lam, J.D. Douglas, R. Pillig and D.A.J. Rand  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*
- J. Power Sources, 48 (1994) 219-32.
- B212. Kinetics of hydrogen-evolution reaction on lead and lead-alloy electrodes in sulfuric acid electrolyte with phosphoric acid and antimony additives.
- S. Venugopalan  
*Batteries Div., ISRO Satellite Centre, Bangalore, India.*
- J. Power Sources, 48 (1994) 371-84.
- B213. Corrosion behaviour of low-antimony lead alloy in sulfuric acid solution.
- Z.W. Chen, J.B. See and W.F. Gillian  
*Pasminco Res. Centre, Bolaroo, NSW, Australia.*
- J. Power Sources, 50 (1994) 47-55.
- INSPEC: A9417-8630F-002, B9409-8410E-002.
- B214. Electrochemical kinetics of anodic layer formation and reduction on antimony and antimonial lead.
- M. Metikos-Hukovic, R. Babic and S. Omanovic  
*Dept. Electrochem., Fac. Chem. Eng. and Technol., Univ. Zagreb, Savska 16, Zagreb, 41000, Croatia.*
- J. Electroanal. Chem., 374 (1994) 199-206.
- CA: 121(18) 215762c.
- B215. The effect of alloying with antimony on the electrochemical properties of lead.
- R. Babic, M. Metikos-Hukovic, N. Lajqy and S. Brinic  
*Dept. Electrochem., Fac. Chem. Eng. and Technol., Univ. Zagreb, Savska 16, Zagreb, 41000, Croatia.*
- J. Power Sources, 52 (1994) 17-24.
- CA: 122(4) 35097b.

- B216. Electrochemical behaviour of lead electrode in sulfuric acid solution containing citric acid.  
G-L. Wei and J-R. Wang  
*Dept. Chem., Shanghai Univ., Science and Technol., Jiading, 201800, Peop. Rep. China.*  
J. Power Sources, 52 (1994) 25-9.  
CA: 122(4) 35098c.
- B217. X-ray photoelectron spectroscopy study of passive layers formed on lead-tin alloys.  
P. Simon, N. Bui, F. Dabosi, G. Chatainier and M. Provincial  
*Lab. de Metallurgie Physique, URA 445, 118 Route de Narbonne, 31077, Toulouse, France.*  
J. Power Sources, 52 (1994) 31-9.  
CA: 122(4) 35099d.
- B218. Simple electrochemical method for the preparation of a highly oriented and highly photoactive  $\alpha$ -PbO film.  
P. Veluchamy and H. Minoura  
*Dep. Appl. Chem., Gifu Univ., Gifu, Japan.*  
Appl. Phys. Lett., 65 (1994) 2431-3.  
CA: 121 (26) 304592g.
- B219. Reduction of the slag from processing of lead-acid battery scrap.  
L. Blacha, J. Pawlowski, R. Jurowski and R. Sosnowski  
*Tech. Univ., Katowice, Poland.*  
Rudy Met. Niezelaz., 39 (1994) 96-8.  
CA: 121(8) 88067c.
- B220. Processing of spent lead battery waste.  
A. Mahalik  
*Hungary.*  
Kohaszat, 127 (1994) 426-32.  
CA: 122(16) 193032f.
- B221. An investigation of the reduction of battery paste ( $\text{Al}_2\text{O}_3$ - $\text{As}_2\text{O}_3$ - $\text{CaO}$ - $\text{FeO}$ - $\text{Fe}_2\text{O}_3$ - $\text{PbO}$ - $\text{Sb}_2\text{O}_3$ - $\text{SiO}_2$ ) slags with graphite.  
S. Wright, S. Jahanshahi and W.J. Errington  
*CSIRO Div. Miner. and Process. Eng., Clayton, Vic., 3169, Australia.*  
Proc. Int. Symp., Extr. Process. Treat. Minimization Wastes, 1994, pp. 11-12.  
CA: 121(6) 62154d.
- C. Positive plate (lead(IV) oxides)**
- C150. Conversion of tribasic lead sulfate to lead dioxide in lead/acid battery plates. 1. Relationship between the phase composition of plates in the cured and formed states.  
L. Zerroual, N. Chelali, F. Tedjar and J. Guitton  
*Lab. d'Energetique et d'Electrochimie du Solide, Univ. de Setif, Setif, 19000, Algeria.*  
J. Power Sources, 51 (1994) 425-31.  
CA: 122(2) 13685q.
- C151. Kinetics of the formation process of  $\text{PbO}_2$  on lead-antimony electrodes.  
G-L. Wei and J-R. Wang  
*Dept. Chem., Shanghai Univ. Science and Technol., Jiading, Shanghai, 201800, Peop. Rep. China.*  
Dianchi, 24 (1994) 280-3.  
CA: 122(12) 138055r.
- C152. Effect of plate preparation on active-material utilization and cycleability of positive plates in automotive lead/acid batteries.  
H. Ozgun, L.T. Lam, D.A.J. Rand and S.K. Bhargava  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*  
J. Power Sources, 52 (1994) 159-71.  
CA: 122(10) 110551a.

- C153. Changes in the morphology and structure of positive active material of starter batteries as a consequence of their use in vehicles.
- J.K. Vilhunen and J. Tommavuori  
*Sci. Services, Neste Oy, Porvoo, Finland.*
- J. Power Sources*, 47 (1994) 189-95.
- C154. Prolong the cycle life of positive electrode in lead acid storage batteries.
- S. Zhang  
*Applied Chem., Dep., Harbin Inst. Technol., Helongjiang, 150006, Peop. Rep. China.*
- Dianchi*, 24 (1994) 276-9.
- CA: 122(10) 110514r.
- C155. Solution to pasted positive plate buckling of lead-acid battery.
- S. Zhao  
*Zibo Storage Battery Factory, Shandong, 255056, Peop. Rep. China.*
- Dianchi*, 24 (1994) 119-20.
- CA: 121(16) 183481s.
- C156. Electrochemical behaviour of  $\alpha$ - and  $\beta$ -PbO<sub>2</sub>. Part I: Proton diffusion from 'all solid-state' protonic electrolyte.
- N. Chelali and J. Guittou  
*Lab. d'Ionique et d'Electrochimie du Solide (LIESG) associe au CNRS (URAD 12 13), ENS d'Electrochimie et d'Electrometallurgie de Grenoble INPG-ENSEEG, 38402, Saint-Martin-d'Herès, France.*
- Solid State Ionics*, 73 (1994) 227-32.
- CA: 121(26) 304589u.
- C157. Effects of grid alloy on the properties of positive-plate corrosion layers in lead/acid batteries. Implications for premature capacity loss under repetitive deep-discharge cycling service.
- A.F. Hollenkamp, K.K. Constanti, M.J. Koop, L. Apateanu, M. Kalabek and K. Micka  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*
- J. Power Sources*, 48 (1994) 195-215.
- C158. Effect of oxidation potential on PbSO<sub>4</sub>/PbO<sub>2</sub> transformation.
- G. Wei  
*Dep. Chem., Shanghai Univ. Sci. Technol., Shanghai, 201800, Peop. Rep. China.*
- Dianchi*, 24 (1994) 157-9.
- CA: 121(20) 234620w.
- C159. Kinetics of the formation process of PbO<sub>2</sub> on lead-antimony electrodes.
- G-L. Wei and J-R. Wang  
*Dept. Chem., Shanghai Univ. Sci. & Technol., China.*
- J. Power Sources*, 52 (1994) 193-6.
- INSPEC: A9507-8630F-004, B9504-8410E-007.
- D. Negative plates**
- D49. Investigations of the negative plate of lead/acid cells. 1. Selection of additives.
- M. Saakes, P.J. van Duin, A.C.P. Ligtoet and D. Schmal  
*TNO Environ. & Energy Res., Delft, Netherlands.*
- J. Power Sources*, 47 (1994) 129-47.

- D50. Investigations of the negative plate of the lead/acid cells. 2. Verification with 2 V cells.
- M. Saakes, P.J. van Duin, A.C.P. Ligtoet and D. Schmal  
*TNO Environ. & Energy Res., Delft, Netherlands.*
- J. Power Sources*, 47 (1994) 149-58.
- D51. Investigations of the negative plate of lead/acid cells. 2. Verification with 2 V cells. (Corrigendum).
- M. Saakes, P.J. van Duin, A.C.P. Ligtoet and D. Schmal  
*Energy Res., TNO, 2600 JA, Delft, Netherlands.*
- J. Power Sources*, 50 (1994) 395.
- CA: 121(14) 160756w.
- D52. Investigations of the negative plate of lead/acid cells. 3. Model calculations of the impedance of self-similar porous electrodes.
- M. Saakes and W.H. Mulder  
*TNO Environmental and Energy Research, P.O. Box 6011, 2600, JA Delft, Netherlands.*
- J. Power Sources*, 50 (1994) 89-96.
- CA: 121(2) 13852w.
- D53. Efficiency of lignosulfonates and humic-related substances as expanders in negative electrodes of the lead/acid system.
- D. von Borstel, G. Hoogstraat and W. Ziechmann  
*Akkumulatorenwerk GmbH, Bad Lauterberg, 37431, Germany.*
- J. Power Sources*, 50 (1994) 131-40.
- CA: 121(2) 13856a.
- D54. Failure mode of the negative plate in recombinant lead/acid batteries.
- S. Atlung and B. Zachau-Christiansen  
*Dept. Physical Chem., Technical Univ. Lyngby, 2800, Denmark.*
- J. Power Sources*, 52 (1994) 201-9.
- CA: 122(10) 110557g.
- E. Aspects of manufacture**
- E178. Adjustment of lead oxide mill.
- A. Yang and Z. You  
*Fujian Storage Battery Factory, Fujian, 354200, Peop. Rep. China.*
- Dianchi*, 24 (1994) 217-18.
- CA: 122(12) 138042j.
- E179. Fabrication of plates of sealed lead/acid battery.
- S. Wu  
*Wanli Storage Battery Co., Ltd., Sichuan, 630054, Peop. Rep. China.*
- Dianchi*, 24 (1994) 65-6.
- CA: 121(6) 61386u.
- E180. Modern technology for the preparation of battery paste.
- H.-J. Vogel  
*Maschinenfabrik Gustav Eirich, Hardheim, Germany.*
- J. Power Sources*, 48 (1994) 71-6.

- E181. Characteristic straight lines for paste-mixing in sealed lead/acid batteries.  
T. Chen, J. Zheng and X. Lin  
*Dep. Chem., Xiamen Univ., Fujian, 361005, Peop. Rep. China.*  
Dianchi, 24 (1994) 101-3.  
CA: 121(16) 183477v.
- E182. Improvement of washing process of dry-charged plates in lead-acid battery.  
S. Zhao  
*Zibo Storage Battery Factory, Shandong, Peop. Rep. China.*  
Dianchi, 24 (1994) 170-1.  
CA: 121(20) 234625b.
- E183. Aspects of lead/acid battery manufacture and performance.  
L.T. Lam  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*  
I.G. Mawston  
*Yuasa JRA Batteries Ltd., Auckland, New Zealand.*  
D. Pavlov  
*Central Lab. Electrochem. Power Sources, Bulgarian Acad. Sci., Sofia, Bulgaria.*  
D.A.J. Rand  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*  
J. Power Sources, 48 (1994) 257-270.
- E184. Changes in external and internal lead load in different working areas of a starter battery production plant in the period 1982 to 1991.  
M. Kentner, T. Fischer and G. Richter  
*Occupational Medical Service, Robert Bosch GmbH, Hildesheim, Germany, D-31139.*  
Int. Arch. Occup. Environ. Health, 66 (1994) 23-31.  
CA: 121(12) 140589r.
- E185. Bi-monitoring of occupational effects of lead-exposure and contamination situation in a battery manufacturing plant over the period 1982-1991.  
M. Kentner, T. Fischer and A. Wilken  
*Aus dem Institute für Arbeits- und Sozialmedizin, Universität Göttingen, Germany.*  
Zentralbl. Arbeitsmed., Arbeitsschutz Ergon., 44 (1994) 163-84.  
CA: 122(12) 141190m.
- E186. Lead exposure in starter battery production: investigation of the correlation between air lead and blood lead levels.  
M. Kentner and T. Fischer  
*Inst. Occupational and Social Medicine, Univ. Göttingen, Göttingen, Germany.*  
Int. Arch. Occup. Environ. Health, 66 (1994) 223-8.  
CA: 122(8) 88108n.
- E187. Health and safety considerations in the specification of battery systems.  
D.H. Wilson  
*Health & Safety Executive, London, UK.*  
Conf. Proc. The 8th Battery Conf. and Exhibition, 11 May 1994, Solihull, UK, pp. 3.1/1-5.  
INSPEC: A9416-8630F-009, B9408-8410E-010.
- E188. Air and blood lead levels in a battery factory.  
D.D. Ibiebele  
*Environ. Toxicology Project, Center for Resource Management and Environ. Studies, Univ. West Indies, Cave Hill Campus. P.O. Box 64, Bridgetown, Barbados.*  
Sci. Total Environ., 152 (1994) 269-73.  
CA: 121(16) 186088e.

**F. Charging and discharging**

- F104. Battery charging assisted by forced electrolyte circulation.

H.J. Rusch  
Germany.

ETZ, 115 (1994) 34-8.

- F105. Fast charging of lead-acid batteries.

E.M. Valeriote, T.G. Chang and D.M. Jochim  
*Product Technol. Centre, Cominco Ltd.,  
Mississauga, Ont., Canada.*

Conf. Proc. The 9th Annual Battery Conference  
on Applications and Advances, 11-13 Jan. 1994,  
Long Beach, CA, USA, pp. 33-8.

CA: 122(18) 218374j.

- F106. Effects of fast charging on hybrid lead/acid battery temperature.

T.G. Chang, E.M. Valeriote and D.M. Jochim  
*Product Technol. Centre, Cominco Ltd.,  
Mississauga, Ont., Canada.*

J. Power Sources, 48 (1994) 163-75.

- F107. New techniques for battery charger and SOC estimation in photovoltaic hybrid power systems.

M. Bayoumy, S. El-Hefnaw, O. Mahgoub and A. El-Tobshy  
*Electron Res. Inst., Giza, Egypt.*

Solar Energy Materials and Solar Cells, 35  
(1994) 509-14.

INSPEC: B9412-8250-050, C9412-3340H-187.

**G. Testing and performance**

- G291. Updated status of conductance/capacity correlation studies to determine the state-of-health of automotive and stand-by lead/acid batteries.

D.O. Feder, M.J. Hlavac and S.J. McShane  
*Electrochemical Energy Storage Syst. Inc.,  
Madison, NJ, USA.*

J. Power Sources, 48 (1994) 135-61.

- G292. Field experience of testing VRLA batteries by measuring conductance.

M.W. Kniveton  
*British Telecommunications plc, Bristol, UK.*

Conf. Proc. The 8th Battery Conf. and Exhibition,  
11 May 1994, Solihull, UK, pp. 4.2/1-7.

INSPEC: A9416-8630F-013, B9408-8410E-014.

- G293. Capacity effects on the determination of the state-of-charge in lead-acid batteries.

C. Armenta-Deu  
*Fac. Fis., Univ. Complutense, Madrid, Spain,  
28040.*

Renewable Energy, 4 (1994) 249-56.

CA: 121(16) 183432b.

- G294. A novel, non-destructive method for the prediction of the state-of-charge of maintenance-free lead/acid batteries from galvanostatic transients.

M.P. Vinod and K. Vijayamohan  
*Materials Chemistry Div., National Chem. Lab.,  
Poona, 411 088, India.*

J. Power Sources, 52 (1994) 135-9.

CA: 122(4) 35110a.



- G295. A state-of-charge indicator for valve-regulated lead-acid (VRLA) batteries.
- D. Makino, M. Naito, H. Fujimoto, T. Tadakuma, H. Nitta, K. Takahashi, M. Tsubota, Y. Iwanami, H. Kudo and Y. Fujita  
*Nippon Denchi K.K., Japan.*
- GS News Tech. Rep., 53 (1994) 10-16.
- CA: 122(16) 192339z.
- G296. Effect of corrosion layer on phenomena that cause the premature capacity loss in lead/acid batteries.
- D. Pavlov  
*Central Lab. Electrochem. Power Sources, Bulgarian Acad. Sci., Sofia, Bulgaria.*
- J. Power Sources, 48 (1994) 179-93.
- G297. Investigations of the factors causing performance losses of the lead/acid traction batteries.
- H. Kronberger, Ch. Fabjan and N. Gofas  
*Institut für Technische Elektrochemie, Technische Universität Wien, Getreidemarkt 9/158. 1060, Wien, Austria.*
- J. Power Sources, 50 (1994) 153-62.
- CA: 121(2) 13858c.
- G298. Solution to early capacity loss of lead-calcium grids for secondary battery.
- G. Zhang, Z. Jiang and Y. Cai  
*Yueyang Storage Battery, Factory, Hunan, 414000, Peop. Rep. China.*
- Dianchi, 24 (1994) 219-20.
- CA: 122(2) 13659j.
- G299. Superiority and failure mode of automotive batteries insulated with polyethylene separators.
- J. Kung  
*Conn. Grace Battery Separators, W.R. Grace & Co., Cambridge, MA, USA.*
- J. Power Sources, 48 (1994) 129-34.
- G300. Aspects of lead/acid battery technology. 10. Cold-start performance.
- L. Prout  
*Aydon Road, Corbridge Northumberland, UK.*
- J. Power Sources, 51 (1994) 463-87.
- CA: 122(2) 13688t.
- G301. Failure mode of lead-acid batteries in photo-voltaic power generation systems.
- T. Funato, M. Shiomi, K. Takahashi and M. Tsubota  
*Nippon Denchi K.K., Kyoto, Japan.*
- GS News Tech. Rep., 53 (1994) 6-13.
- CA: 121(16) 183495z.
- G302. Failure mechanisms in VRLA batteries.
- M.L. Whitehead  
*ERA Technol., Leatherhead, UK.*
- Conf. Proc. The 8th Battery Conf. and Exhibition, 11 May 1994, Solihull, UK, pp. 2.1/1-10.
- INSPEC: A9416-8630F-005, B9408-8410E-006.
- G303. Deterioration estimation method for 200 Ah sealed lead-acid batteries.
- K. Yamamoto, T. Ogata, K. Takano and Y. Konya  
*NTT Interdisciplinary Res. Labs., Japan.*
- NTT R & D, 43 (1994) 1143-8.
- INSPEC: A9505-8630F-005, B9503-8410E-011.

- G304. Method of estimating deterioration of lead-acid batteries using pulse discharge and charge characteristics.
- T. Ogata, K. Takano, M. Kohno and K. Yoshida  
*Interdisciplinary Res. Lab., NTT Corp., Musashino, Japan.*
- Electronics and Commun. in Japan, Part 1 (Communications), 77 (1994) 1-10.
- INSPEC: B9503-8410E-006.
- G305. Technology implementation of stationary battery failure prediction.
- M.R. Laidig and J.W. Wurst  
*BTECH Inc., Whippany, NJ, USA.*
- Conf. Proc. The 9th Annual Battery Conference on Applications and Advances, 11-13 Jan. 1994, Long Beach, CA, USA, pp. 168-72.
- G306. A diagnostic testing program for large lead/acid storage battery banks.
- R.D. Soileau  
*Dow Chem. Co., Plaquermine, LA, USA.*
- IEEE Transactions on Industry Applications, 30 (1994) 193-200.
- G307. Choosing the best battery backup for cable networks: A performance comparison.
- G. Tallackson and L. Roper.
- CED, 20 (1994) 40, 42-3.
- INSPEC: B9412-8360-145.
- G308. Experiences from accelerated testing methods for stationary lead-acid batteries.
- P. Selanger.
- Conf. Proc. The 8th Battery Conf. and Exhibition, 11 May 1994, Solihull, UK, pp. 3.3/1-9.
- INSPEC: A9416-8630F-011, B9408-8410E-012.
- G309. Prediction of remaining battery discharge time in telecommunications power systems.
- T. Matsushima and S. Ishizuka  
*NTT Interdisciplinary Res. Lab., Japan.*
- Transactions of the Inst. of Electrical Engineers of Japan, Part B, 114-B (1994) 211-19.
- INSPEC: A9424-8630F-003, B9412-8410E-004.
- G310. Cycle life test of lead dioxide electrodes in compressed lead/acid cells.
- J. Lanfors  
*Dept. Chem. Eng., Div. Applied Electrochem., The Royal Institute Technol., 100 44, Stockholm, Sweden.*
- J. Power Sources, 52 (1994) 99-108.
- CA: 122(8) 85386r.
- G311. Thermal analysis of active materials for the lead/acid battery.
- I.G. Mawston, P.G. Buchanan and G.A. Wright  
*Yuasa JRA Batteries Ltd., Auckland, New Zealand.*
- J. Power Sources, 48 (1994) 77-82.
- G312. Seeking enhanced lead/acid battery performance through the use of conductive tin-dioxide-coated glass-flakes.
- L.T. Lam, O. Lim, H. Ozgun and D.A.J. Rand  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*
- J. Power Sources, 48 (1994) 83-111.

- G313. Battery performance enhancement with additions of bismuth.
- J.E. Manders  
*Pasminco Metals, Melbourne, Vic., 3001, Australia.*
- L.T. Lam, R. De Marco, J.D. Douglas, R. Pillig and D.A.J. Rand  
*CSIRO Div. Mineral Products, Port Melbourne, Vic., 3207, Australia.*
- J. Power Sources, 48 (1994) 113-28.
- G314. Effect of gelling on the electrode kinetics of the Pb/PbSO<sub>4</sub> and hydrogen-electrode reactions in maintenance-free lead/acid batteries.
- M.P. Vinod and K. Vijayamohan  
*Materials Chemistry Division, National Chem. Lab., Pune-411 008, India.*
- J. Power Sources, 50 (1994) 67-79.
- CA: 121(12) 13850u.
- G315. The influence of graphite on the capacity and gas recombination in stationary lead-acid battery.
- J. Kwasnik, J.D. Milewski, T. Pukacka and P. Szczesniak  
*Central Lab. Batteries and Cells, 61-362, Poznan, Poland.*
- Prog. Batteries Battery Mater., 13 (1994) 219-24.
- CA: 121(16) 183499d.
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