

LABAT'2008,

9-13 June 2008, Varna, Bulgaria

Presented papers

HEV BATTERIES. PROBLEMS AND SOLUTIONS

The function of carbon in the negative plates of VRLA batteries exposed to high-rate partial-state-of-charge operation

P.T. Moseley, International Lead Zinc Research Organization, Durham, North Carolina, USA

Negative plate additives for improving HRPSoC operation of lead-acid batteries

P. Nikolov, G. Petkova, T. Rogachev, D. Pavlov, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

Study of graphite addition to negative active material of VRLA batteries to improve life under high-rate partial-state-of-charge working conditions

M. Fernandez, J. Valenciano, J.M. Lacadena, L. Sanz, F. Trinidad, R&D Centre, Exide Technologies Transportation Europe, Azuqueca de Henares, Spain

Lead-acid batteries for partial-state-of-charge applications

B. Hariprakash, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, India
S.A. Gaffoor, NED Energy Ltd., Hyderabad, India
A.K. Shukla, Central Electrochemical Research Institute, Karaikudi, India

Thin plate pure lead VRLA designs for fast charge motive power and HEV applications

R. Kurian, EnerSys, Newport, UK

Influence of graphite and carbon foams used in Firefly Energy 3D® negative plates on the charge-discharge processes

B. Monahov, K. Kelley, R. McDuff, Firefly Energy Inc., Peoria, IL, USA

Simulation of the current distribution in lead-acid batteries to investigate the dynamic charge acceptance in SLI batteries

J. Kowal, E. Karden, D.U. Sauer, ISEA, RWTH, Aachen, Germany

NEW TECHNOLOGY FOR LEAD-ACID BATTERY GRID PRODUCTION

New continuous processes and alloys for production of positive grids

R.D. Prengaman, T. Ellis, RSR Technologies, Inc. Dallas, TX USA

Electrochemical behavior of thin layer of lead deposited on neutral matrix

A. Czerwiński, I. Paleska, M. Bodziachowska, J. Kotowski, Sz. Obrębowski, Warsaw University, Department of Chemistry, Warsaw, Poland
Z. Rogulski, Industrial Chemistry Research Institute, Warsaw, Poland

Cutting lead cost by direct use of scrap for grid making

T. Hofmann, H. Warlimont, DSL Dresden Material-Innovation GmbH, Dresden, Germany

High corrosion resistance and electrochemical characteristics of film lead negative electrode of lead-acid battery

L. Yolshina, Institute of High-Temperature Electrochemistry, Urals Branch of Russian Academy of Sciences, Yekaterinburg, Russia
A.N. Yolshin, Leader-LAB. Ltd, Yekaterinburg, Russia

Study on the microstructure of different sites of cast ingot of lead calcium alloys

W. Guo, H. Chen, School of Chemistry and Environment, South China Normal University, Guangzhou, China

M. Tang, H. Zhou, H. Wang, S. Peng, W. Wei, Zhuzhou Smelter Group Co. Ltd, Zhuzhou Hunan, China

A study on corrosion of cast-on-strap alloy

A. Li, H. Chen, School of Chemistry and Environment, South China Normal University, Guangzhou, China

C. Dou, G. Xiao, S. Peng, W. Wei, H. Wang, W. Zhang, S. Chen, Zhuzhou Smelter Group Co. ,Ltd. , Zhuzhou, Hunan, China

Y. Zhao, Shenyang Jugu Equipment Manufacturing Co. , Ltd. , Shenyang, Liaoning, China

Anodic behavior of lead alloys in sulphate electrolytes

Ts. Dobrev, Y. Stefanov, Rostislav Kaishev Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria

Iv. Valchanova, Sn. Magaeva, University of Plovdiv „Paisii Hilendarski”, Plovdiv, Bulgaria

New methods of lead and lead-antimony alloys refining

A.I. Rusin, L. D. Khegay, MUP „RUMA”, Komsomolsk-na-Amure, Russia

NEW TECHNOLOGICAL PROCESSES FOR LEAD-ACID BATTERY PRODUCTION

Influence of H₂SO₄/(Pb₃O₄ + leady oxide) ratio on the phase composition, structure and performance parameters of lead-acid battery positive plates

G. Papazov, D. Pavlov, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

Plates soaking prior formation and its influence on PAM phase composition and battery performance

M. Foudia, L. Zerroual, Laboratoire d’Énergétique et Electrochimie du Solide, Université Ferhat ABBAS Sétif, Algeria

M. Matrakova, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

Preparation and characterization of thin electrodes using nanometric materials for VRLA prototype batteries

A. Caballero, M. Cruz, L. Hernan, J. Morales, Dpto Quimicalnorganica e Ingenieria Quimica, Edificio Marie Curie, Universidad de Córdoba, Cordoba, Spain

J. Valenciano, Exide Technologies, Research and Innovation, Azuqueca de Henares, Spain

Tetrabasic crystal seeding – a successful and maturing technology

D. Hardy, Penox GmbH, Engineering Dept., Cologne, Germany

Mechanism of micro/nanoporosity formation in lead acid negative plates

C.V. D’Alkaine, G.A. de O. Brito, Group of Electrochemistry and Polymers, DQ-UFSCar, Sao Carlos, Brazil

Formation systems with acid recirculation technology – the Inbatec design

C. Papmahl, Inbatec GmbH, Hagen, Germany

Charge tracking, complete process control

R. Jonach, BM Battery Machines, Austria

Reliability of the lead acid batteries: impact of the manufacturing process

J.M. Lasserre, Serma Technologies, Pessac, France

Small to medium sized lead-acid battery recycling plants: Tilting Rotary Furnaces as reduction units

J. Simpson, Dross Engineering, France

Numerical simulation of electrolyte particle trajectory to investigate battery cover design characteristics

V. Esfahanian, H.M. Darian, H. Babazadeh, Vehicle, Fuel and Environment Research Institute, University of Tehran, Iran

Pro-Ox curing technology

C. Catelli, Roma, Italy

Development of China's lead and lead-acid battery industry

H. Chen, School of Chemistry and Environment, South China Normal University, Guangzhou

CHARGE AND DISCHARGE PROCESSES. SOC AND SOH. BATTERY TESTS

New fast charging methods based on real time battery acceptance measurements allowing charge and destratification simultaneously

K. Mamadou, P. N'Guyen, Ch. Glaize, Institut d'Électronique du Sud – GEM, Université Montpellier II, Montpellier, France

J. Alzieu, Électricité De France R&D, Moret-sur-Loing, France

Study of the “coup de fouet” phenomena occurring in the start of discharges and charges of lead-acid batteries. Experimental analysis

A. Delaille, M. Perin, INES Research, Development and Innovation, Laboratoire of Solar Energy, Le Bourget-du-Lac, France

F. Huet, UPRIS du CNRS, Pierre and Marie University, Paris, France

Automatic device for continuous measurement of current distribution and acid stratification in flooded lead-acid batteries

D. Schulte, T. Sanders, W. Waag, J. Schiffer, D.U. Sauer, ISEA, RWTH, Aachen, Germany

VRLA battery float service life estimation using a Kalman filter

W.L. Burgess, Eaton Powerware, Raleigh, USA

Advancements In Power Storage Testing For HEV Development

R. Schaefer, Bitrode Corporation, Fenton, USA

Development of battery health monitoring system for standby lead-acid batteries

S. Joshi, Lalit Consulting Services, Bangalore, India

R. Jakkli, Y. Kulkarni, Associated Powercon Equipment India Pvt. Ltd. , Pune, India

12V Battery – SOH degradation in the field. Analysis of 300 samples coming from Renault Clio II.

C. Hiron, W. Bogel, T. Vu Mai, Electrical and Electric Systems Engineering – Electrical Energy Storage Group, Renault Technocentre, Guyancourt, France

Recovery of discharged sulfated lead-acid batteries

H. Karami, Payame-Noor University, Abhar, Iran

Thermal behaviour of small battery during closed oxygen cycle

D. Valkovska, T. Todorov, M. Dimitrov, D. Pavlov, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

Critical analysis of experimental plate impedance

P.R. Impinnisi, C. M. Garcia, P. Mengarda, Battery Laboratory, Institute of Technology for Development - LACTEC, Curitiba (PR)-Brazil.

C.V. D'Alkaine, Group of Electrochemistry and Polymers, Chemistry Department, Federal University of Sao Carlos, Sao Carlos (SP) Brazil

Macroporosity and impedance in lead-acid plates

C.M.Garcia, P.R. Impinnisi, Battery Laboratory, Institute of Technology for Development - LACTEC, Curitiba, (PR)-Brazil

C.V. D'Alkaine, G.A.O. Brito, Group of Electrochemistry and Polymers, Chemistry Department, Federal University of Sao Carlos, Sao Carlos, (SP) Brazil

Kinetics of PbO₂ electrodeposition from methanesulfonic solutions

A.B.Velichenko, R. Amadelli, E.V. Gruzdeva, T.V. Luk'yanenko, F.I. Danilov, Department of Physical Chemistry, Ukrainian State University of Chemical Technology, Dnepropetrovsk, Ukraine

PbO₂ electrodeposition from methanesulfonic electrolytes and physicochemical properties of the resulting oxides

R. Amadelli, E.V. Gruzdeva, T.V. Luk'yanenko, A.B. Velichenko, Department of Physical Chemistry, Ukrainian State University of Chemical Technology, Dnepropetrovsk, Ukraine

Electrochemical study of the mechanism of the pulse charge of the lead acid battery negative plates for PV applications

A. Kirchev, F. Mattera, E. Lemaire, A. Delaille, Laboratoire des Systemes Solaires, INES, DRI, Le Bourget du Lac, France

Failure modes of valve-regulated lead-acid batteries in electric bicycle application

Y. Guo, College of Chemistry and Chemical Engineering, Fuzhou University, Fuzhou, China

Influence of Mg, Al, Co, Sn and Sb on the electrical performance of doped β -PbO₂

N. Chahmana, L. Zerroual, Laboratoire d'Energétique et Electrochimie du Solide (LEES), Université Ferhat ABBAS, Sétif, Algeria

M. Matrakova, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

Influence of Mg, Al, Co, Sn and Sb on the structure of doped β -PbO₂

M. Matrakova, D. Pavlov, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

N. Chahmana, L. Zerroual, Laboratoire d'Energétique et Electrochimie du Solide (LEES), Université Ferhat ABBAS Sétif, Algeria

Behavior of lignosulfonate on electrochemical reaction on lead electrode in sulfuric acid solution

N. Hirai, Department of Material and Manufacturing Science, Osaka University, Osaka, Japan

Lead-acid battery industry in China

Z. Wang, Beijing University of Science and Technology, Beijing, China

MODELING OF LAB PROCESSES

Prediction of starter lead-acid battery performance using Artificial Neural Network

S.M. Rezaeiniya, M. Hejabi, Research and Development Center, Niru Battery Manufacturing Company, Tehran, Iran

Visual modeling of electrochemical processes

M. Semenenko, Bauman Moscow State Technical University, Kaluga Branch, Kaluga, Russia

Mixed model of lead-acid battery

K. Untener, Institute for Engineering and Materials Science, University of Szeged, Szeged, Hungary

Numerical simulation of acid stratification in lead-acid batteries

V. Esfahanian, F. Torabi, Vehicle, Fuel and Environment Research Institute, University of Tehran, Iran

SOME NEW IDEAS FOR LEAD-ACID BATTERIES

New sources of energy on the base of polyelectrolyte hydrogels

I.E. Suleimenov, E.N. Suleimenov, Institute of Ionosphere, Almaty, Kazakhstan

Flexible hybrid supercapacitor power system

M. Mladenov, Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria

D. Kovacheva, Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria

K. Belov, V. Trenev, Central Laboratory of Mechatronics and Instrumentation, Bulgarian Academy of Sciences, Sofia, Bulgaria

Advanced car battery design based on aesthetic elements

A. Faraji, Department of Industrial Design, University College of Fine Arts, University of Tehran, Tehran, Iran

A. H. Tehrani, Department of Industrial Design, University College of Fine Arts, University of Tehran, Tehran, Iran

Transport ion battery in the present of current

F. Coupan, Renewable energy research laboratory, Cayenne, French Guiana