

LABAT'2014 PROGRAMME

Tuesday, 10 June, 2014

Conference Hall 1

Opening ceremony (08:30 - 09:00)

08:30		Welcome to delegates <i>D. Pavlov</i> , Chairman of LABAT'2014
08:40		Welcoming addresses

Morning session (09:10 - 12:40)

Chairmen: Dr. D. Prengaman, Dr. E. Meissner

Secretary: Dr. A. Aleksandrova

LEAD-CARBON ELECTRODES

09:10	1	Lead-carbon batteries for automotive and energy storage applications <i>B. Monahov</i> , ILZRO, ALABC, USA
09:35	2	Carbon additives for deep cycling lead-acid battery applications (1) <i>P. Atanassova</i> , <i>A. Du Pasquier</i> , <i>M. Oljaca</i> , Cabot Corporation, USA <i>P. Nikolov</i> , <i>M. Matrakova</i> , <i>D. Pavlov</i> , IEES – BAS, Bulgaria
10:00	4	High performance hybrid carbon materials for advanced lead-acid batteries <i>D. Cericola</i> , <i>T. Hucke</i> , <i>M. Spahr</i> , IMERYS Graphite & Carbon, Switzerland
10:25		Sovema PunchPlus, the innovative punching machine <i>A. Avesani</i> , Sovema SpA, Italy (Exhibitor presentation)
10:30		<i>Coffee break</i>
11:00	5	A novel lead-carbon grid material for possible applications in lead-acid batteries <i>L.A. Yolshina</i> , Institute of High-Temperature Electrochemistry, Russia <i>V.A. Yolshina</i> , <i>A.N. Yolshin</i> , Leader-Lab Ltd., Russia
11:25	6	Study of interaction between lead and carbon by electrolytic deposition experiments <i>J. Settelein</i> , <i>G. Sextl</i> , University of Wuerzburg, Germany <i>S. Hartmann</i> , <i>V. Trapp</i> , Fraunhofer-Institute for Silicate Research, Germany <i>F. Guthlein</i> , <i>M. Gelbke</i> , <i>R. Wagner</i> , Moll GmbH, Germany
11:50	8	Carbon additives in negative active material of lead-acid batteries <i>M. Dimitrov</i> , <i>B. Drenchev</i> , IEES – BAS, Bulgaria
12:15		<i>Lunch</i>

Afternoon session (14:00 – 17:40)		
Chairmen: Prof. C. D'Alkaine, Prof. N. Hirai		
Secretary: Dr. A. Aleksandrova		
14:00	9	Reuse and prolongation of lifetime of lead-acid batteries by hydrophilic carbon nanoparticles <i>Sh. Ikeda</i> , Malaysia-Japan International Institute of Technology, Malaysia <i>Sh. Kawasaki</i> , Nagoya Institute of Technology, Japan <i>A. Nobumoto, S. Kita, H. Ono, S. Ono</i> , Shion Co.,Ltd, Japan
14:25	10	New high capacity lead-acid battery with carbon matrix. Carbon lead-acid battery (CLAB) <i>A. Czerwinski, J. Wrobel, P. Podsadni, M. Bystrzejewski</i> , Warsaw University, Poland <i>Z. Rogulski, J. Lach, K. Wrobel</i> , Industrial Chemistry Institute, Poland
14:50	11	AGM-VRLA batteries with carbon honeycomb grids for deep cycling applications <i>A. Kirchev, L. Serra, S. Dumenil, A. de Mascarel, G. Brichard, M. Alias, L. Vinit, M. Perrin</i> , CEA-LITEN, France
15:15	12	Synthesis of a novel-structured carbon/lead composite and its application lead-carbon batteries <i>G. Shi, X. Fu, H. Chen</i> , South China Normal University, China
15:40	<i>Coffee break</i>	
16:00	13	Effect of nano-structured carbon additives in lead-acid batteries operating under the HRPSoC duty cycle <i>S. Mayavan, M. Kumar, S. Ambalavanan, V.M.K. Pilai</i> , CSIR-CECRI, India
16:25	14	Design and experimental validation of substrate-integrated lead-carbon hybrid ultracapacitors <i>A. Banerjee, R. Srinivasan, A.K. Shukla</i> , Indian Institute of Science, India
16:50	15	Lead-carbon hybrid ultracapacitors with substrate-integrated-positive and pasted-positive configurations <i>A. Banerjee, A.K. Shukla</i> , Indian Institute of Science, India
17:15	16	The effect of additives (carbon and TiO₂) on the performance of the lead-acid batteries <i>L. Rekha, M. Venkateswarlu, K.S.N. Murthy, M. Jagadish</i> , R&D Amara Raja Batteries Ltd., India
09:00 – 17:40	17	Activated carbon materials for electrochemical supercapacitors and battery applications - Poster <i>B. Tsyntsarski, N. Petrov</i> , Institute of Organic Chemistry, BAS, Bulgaria <i>L. Stoyanov, M. Mladenov, R. Raicheff</i> , IEES-BAS, Bulgaria
	18	Investigation of the mutual interaction of carbon and organic expander on the performance of negative lead accumulator electrodes during PSoC operation – part 1 - Poster <i>P. Toser, P. Baca, P. Cudek, M. Frk</i> , Brno University of Technology, Czech Republic <i>K. Micka</i> , Heyrovsky Institute of Physical Chemistry, Czech Republic
17:40	Panel Discussion	
18:15	<i>End of session</i>	

Wednesday, 11 June, 2014

Morning session (08:30 - 12:40)

Chairmen: Dr. B. Monahov, Dr. K. Smith

Secretary: Dr. V. Boev

LEAD-ACID BATTERY TECHNOLOGY

08:30	19	<p>Development of VRLA 6V modules with optimized negative formulas and increased charge acceptance for mild hybrid applications</p> <p><i>F. Trinidad, J. Valenciano, C. Gimeno, M. Martin-Zarco</i>, Exide Technologies, Spain</p>
08:55	20	<p>The quantification and crystal size determination of tetrabasic lead sulphate used in the cured active material of positive plates in lead-acid batteries</p> <p><i>E.E. Ferg, N. Mambasa</i>, Nelson Mandela Metropolitan University, South Africa <i>L. Geyer</i>, Powertech Batteries, South Africa</p>
09:20	21	<p>Paste mixing and curing, part 2</p> <p><i>G.E. Mayer</i>, Battery Technology Center Inc., USA</p>
09:45	22	<p>Study on energy demands for curing process and reduction of CO₂ emission for lead-acid battery plant</p> <p><i>C. Catelli</i>, P.C. di Pompeo Catelli, Italy</p>
10:10	23	<p>Supersoft ultra highly refined secondary lead for critical applications</p> <p><i>D. Prengaman, T. Ellis</i>, RSR Technologies, USA <i>F. Fleming</i>, NorthStar Batteries, USA</p>
10:35	<i>Coffee break, sponsored by IMERYS Graphite & Carbon, Switzerland</i>	
11:00	24	<p>The influence of tin on excursion peak in lead-tin alloys</p> <p><i>J. Lach, S. Obrebowski, A. Czerwinski</i>, Industrial Chemistry Institute, Poland</p>
11:25	25	<p>Recent development on formation with acid recirculation for LAB</p> <p><i>C. Papmahl</i>, Inbatec, Germany</p>
11:50	26	<p>Innovative containers and lids for OPzS - OPzV batteries</p> <p><i>A. Saoudi, T. Kaspar</i>, Accumalux Group, Luxembourg</p>
12:15	27	<p>Does it is possible to produce lead-acid battery without waste emission?</p> <p><i>M. Zhang</i>, Tiger Industrial R&D Center, China</p>
<i>09:00 - 17:40</i>	28	<p>Effect of mineral additive on the electrical performance of lead-acid battery positive plate - <i>Poster</i></p> <p><i>M. Foudia, L. Zerroual</i>, Université de Setif, Algeria. <i>M. Matrakova</i>, IEES-BAS, Bulgaria</p>
	29	<p>Physicochemical and electrochemical study of positive active mass modified by the addition of bismuth. - <i>Poster</i></p> <p><i>N. Chahmana, L. Zerroual</i>, Université de Setif, Algeria <i>M. Matrakova</i>, IEES-BAS, Bulgaria</p>
12:40	<i>Lunch</i>	

Afternoon session (14:00 – 18:50):**Chairmen: Prof. A. Czerwinski, Dr. R. Wagner****Secretary: Dr. V. Boev****LEAD-ACID BATTERY OPERATION**

14:00	30	Analysis of interaction between lead sulfate and lead electrode during charging process by using Electrochemical Atomic Force Microscopy <i>Y. Araj, T. Tsutsumi, Y. Yamaguchi, GS Yuasa International Ltd., Japan</i>
14:25	31	Characterizing AGM battery performance based on negative plate behavior <i>A. Hammouche, J.Bauer, S.Goertler, B.Ehrlich, S. Gerner, Johnson Controls Power Solutions EMEA, Germany</i>
14:50	32	Thermal runaway in AGM VRLA and separator design. <i>M. Dimitrov, B. Drenchev, A.Aleksandrova, IEES-BAS, Bulgaria</i>
15:15	69	Pb/PbO mixtures production: new STC process for direct lead-acid battery paste recycling <i>G. Fusillo, F. Scura, G. La Sala, R. Guerriero, STC s.r.l., Italy</i>
15:40	Coffee break, sponsored by IMERYS Graphite & Carbon, Switzerland	
16:00	35	Operation strategies for VRLA batteries in PV-Home solar systems <i>G. Langer, B. Riegel, E. Cattaneo, HOPPECKE Batterien GmbH, Germany</i>
16:25	36	Development of lead-acid batteries for ISS use <i>K. Kogure, M. Tozuka, T. Shibahara, S. Minoura, M. Sakai, Hitachi Chemical Co.,Ltd., Japan</i>
16:50	38	High quality safety valve for AGM lead-acid automotive batteries in Start/Stop operation <i>K.D. Merz, A. Farrugia, J. Pule, A. Cassar, G. Schembri, Abertax Technologies & Marketing, Malta</i>
09:00 – 17:40	39	"State of health" of electrodes of starter lead-acid batteries operated at zero temperatures. - Poster <i>M. Matrakova, V.Naidenov, IEES-BAS, Bulgaria</i>
17:40		Panel Discussion
18:50	End of session	

Thursday, 12 June, 2014

Morning session (08:30 – 12:40):

Chairmen: Dr. A. Cooper, Prof. L. Yolshina

Secretary: Ms. D. Ivanova

LEAD-ACID BATTERY OPERATION

08:30	40	CFD simulation of lead-acid batteries: Effect of temperature variation <i>V. Esfahanian, N. Narjabadifam, P. Olad, A.B. Ansari, S. Hasanpour, University of Tehran, Iran</i>
08:55	41	The optimization of lead-acid battery electrode thickness using PSO algorithm by using Neural networks <i>V. Esfahanian, S. Hasanpour, A.B. Ansari, N. Narjabadifam, P. Olad, University of Tehran, Iran</i>
09:20	45	Invertibility in electrochemical reaction. The case of discharge/charges at non-porous PbO₂/H₂SO₄ electrodes <i>C. D'Alkaine, F.F. Plut, Federal University of São Carlos, Brazil</i>
09:45	43	Comprehensive study of relaxation behaviour of lead-acid batteries for State-of-Charge estimation in automotive applications <i>G. Pilatowicz, J. Badeda, H. Budde-Meiwes, J. Kowal, Ch. Sarfert, E. Schoch, M. Koenigsmann, D.U. Sauer, ISEA, RWTH, Germany</i>
10:10	44	Storage of photovoltaic energy in lead-acid batteries <i>N. Achaibou, A. Harikenchikh, D. Ghribi, USTHB, Algeria</i>
10:35		<i>Coffee break</i>
11:00		Gaston Plante Medal ceremony
12:40		<i>Lunch</i>

Afternoon session (14:00 – 18:50):

Chairmen: Dr. J. Devitt, Prof. E. Ferg

Secretary: Ms. D. Ivanova

Pb/PbO₂/PbSO₄ ELECTRODES

14:00	46	Effect of various alkaline metal ions on electrochemical behavior of lead electrode in sulfuric acid solution <i>N. Hirai, Y. Yamamoto, Suzuka National College of Technology, Japan</i>
14:25	47	Correlation between the electrochemical activity and the crystallite size of PbO₂: a comparative study between the chemical and electrochemical routes <i>L. Zerroual, University Ferhat Abbas, Algeria</i> <i>M. Matrakova, IEES-BAS, Bulgaria</i>
14:50	48	Nano-structured PbO₂ electrode for lead-acid battery. <i>A. Moncada, R. Inguanta, S. Piazza, C. Sunseri, University of Palermo, Italy</i>

15:15	50	Efficient use of lead-acid battery <i>E. Nefedov, R. Tenno, Aalto University, Finland</i>
15:40	<i>Coffee break</i>	
16:00	42	Integrated supervisory and control system for backup power and traction batteries <i>S. Voutetakis, Ch. Ziogou, D. Giaouris, F. Stergiopoulos, Chemical Process & Energy Resources Institute, Greece</i> <i>C. Elmasides, Systems Sunlight S.A., Greece</i> <i>S. Papadopoulou, Alexander Technological Educational Institute of Thessaloniki, Greece</i>
16:25	51	Methods and programming equipment for management, control and registration of battery monitoring <i>S. Gishin, S. Zahariev, K. Kirilov, Technical University, Bulgaria</i>
16:50	53	State-of-the-art solutions in the field of pressure sealed stationary batteries <i>A. Rusin, A. Kudryavtsev, L. Khegay, G. Demin, The Istochnik, Russia</i>
17:15	74	Use of polymers study in the battery industry <i>R.Rane, Electrocoating and Insulation Technologies Pvt. Ltd, India</i>
17:40	62	A hybrid methodology to predict SOC and SOH of lead-acid batteries based on EIS techniques <i>C. Aksakal, Inci Aku, Turkey</i> <i>A. Sisman, ITU/Energy Institute, Turkey</i>
09:00 – 17:40	54	Study of the electrochemical performance of PbO₂ prepared from the intermediate oxides PbO_x (1.33<x<1.66) - Poster <i>L. Rahmani, Pr.R. Fitas, L. Zerroual, University Ferhat Abbas, Algeria</i>
	55	Analysis on the deterioration mechanism of lead-acid batteries (1) - Poster <i>K. Sumiya, H. Hirano, T. Hidaka, Hitachi Chemical Co.,Ltd., Japan</i>
	56	Analysis on the deterioration mechanism of lead-acid battery (2) Poster <i>T. Hidaka, H. Hirano, K. Sumiya, Hitachi Chemical Co.,Ltd., Japan</i>
	57	Method of real time diagnostics for the basic performance parameters in lead acid batteries - Poster <i>A.A. Aleshkin, Y.I. Bubnov, O.G. Ruzhnikov, AC Buster, Russia</i> <i>V.M. Yagnyatinskiy, NIISTA, Russia</i>
	58	Evaluation of physical properties of sulfuric acid-water mixtures - Poster <i>L. Oca, J.M. Campillo-Robles, M.M. Bou-Ali, Mondragon Unibertsitatea, Spain</i> <i>B. Ballesteros, Energy Revival S.L., Spain</i>
18:05		Panel Discussion
18:50	<i>End of session</i>	
20:00	<i>Banquet</i>	

Friday, 13 June, 2014

Morning session (08:300 – 12:40):

Chairmen: Dr. P. Nikolov, Dr. P. Atanassova

Secretary: O. Dimitrov

LEAD-ACID BATTERY MODELLING

08:30	59	Simulation of lead-acid battery using model order reduction <i>V. Esfahanian, A.B. Ansari, University of Tehran, Iran</i>
08:55	61	Modeling the crystal distribution of lead sulfate in lead-acid batteries with 3D spatial resolution <i>M. Huck, J. Badeda, D.U. Sauer, ISEA, RWTH, Germany</i>
09:20	63	Experimental evaluation of equalizing exchange currents in lead-acid batteries due to acid stratification for 3D simulation <i>J. Badeda, M. Huck, D.U. Sauer, ISEA, RWTH, Germany</i> <i>G. Langer, E. Cattaneo, Hoppecke Batterien GmbH, Germany</i>
09:45	64	Electrochemical impedance spectroscopy and internal resistance as methods of estimation of lead acid batteries condition <i>W. Majchrzycki, M. Baraniak, E. Jankowska, Central Laboratory of Batteries and Cells, Poland</i> <i>P. Handzlik, University of science and Technology, Poland</i> <i>A. Lazar, Telzas Ltd., Poland</i> <i>R. Samborski, The National Institute of Telecommunications, Poland</i>
10:10	65	Modeling the impact of paste additives and pellet geometry on paste utilization within lead-acid batteries during low rate discharges <i>M. Vargonen, Exide Technologies, USA</i>
10:35	<i>Coffee break</i>	
11:00	67	Dynamic charge acceptance measurements and modeling in Ultra batteries <i>K. Fewing, D. Stone, J. Green, M. Foster, University of Sheffield, UK</i>
11:25	70	Study on a novel paste desulfurization process of the recycling of lead-acid batteries <i>Y. Shu, Q. Gao, H. Chen, South China Normal University, China</i>
11:50	71	Study on recovery of lead from waste slag of secondary lead smelting <i>Y. Shu, L. Zhu, H. Chen, South China Normal University, China</i>
09:00 - 12:15	68	Experimental study of lead-acid battery regeneration. Performances modelling in time - Poster <i>F. Astier, P. Mandin, University Bretagne-Sud, France</i> <i>G. Boyer, Batteries Global Services, France</i>
	72	Manufacture of novel fibre based electrodes for lead-acid batteries - Poster <i>M. Mrovcak, N. Ludford, A. Rexach, TWI Ltd., UK</i> <i>L. Marston, FibreTechnology Ltd., UK</i>

09:00 - 12:15	73	Deposition of protective coatings on lightweight metallic substrate for lead-acid electrodes - <i>Poster</i> <u>M. Mrovcak</u> , N. Ludford, TWI Ltd., UK C. Mellors, MIRA Ltd., UK
	75	Citric acid based hydrometallurgy recycling of lead-acid battery paste <i>Poster</i> <u>X. He</u> , <u>Y. Liu</u> , R.Kumar, University of Cambridge, UK J. Yang, Huazhong University of Science and Technology, China
12:15		Panel Discussion
12:45	Closing ceremony	
13:00	<i>Lunch</i>	