



**The 9<sup>th</sup> International Conference Advanced batteries and accumulators will be co-sponsored by:**

*The Electrochemical society*



*in conjunction with The ECS student membership (Czech section).*



**The Electrochemical society**

Electrochemical student membership  
Czech section



**SIGMA-ALDRICH**



**Bochemie** 

**H/test** 

**AUTOLAB** *Electrochemical  
Instruments*

## Sunday, June 29<sup>th</sup>

16:00 ÷ 20:00      **Welcome party - Registration**

## Monday, June 30<sup>th</sup>

8:00 ÷ 10:00      **Registration**

10:00 ÷ 11:00      **Opening conference**

*Prof. Ing. Radimír Vrba, CSc.*

Dean of BUT FEEC

*Prof. Ing. Jiří Kazelle, CSc.*

Head of Department of Electrical and Electronic Technology

*Prof. Ing. Jiří Vondrák, DrSc.*

Organisation committee

*Ass. Prof. Ing. Marie Sedlaříková, CSc.*

Organisation committee

11:00 ÷ 12:00

**Owen, J. R.**

THE FUTURE OF LITHIUM BATTERIES: WHY WE NEED  
3-D STRUCTURES

12:00 ÷ 13:00

**Lunch time**

13:00 ÷ 13:30

**Vondrák, J.**

APROTIC GEL POLYMER ELECTROLYTES

13:30 ÷ 14:00

**Vanýsek, P.**

VOLTAMMETRY AND IMPEDANCE AS ELECTROCHEMICAL  
DIAGNOSIS TOOLS: WHERE DO THEY MEET AND WHERE  
DO THEY DIFFER.

14:00 ÷ 14:30

**Coffee break**

14:30

**Nanosized and layered materials**

14:30

*Shlyakhtin, O. A., Skundin, A. M., Ahn, J.-H., Lee, J.-K., Oh, Y.-J.*

SYNTHESIS AND SUPERCAPACITOR BEHAVIOUR  
OF Ni-Mn HYDROXOCARBONATES

15:00

*Skatkov, L., Gomozov, V.*

ABOUT THE FORMATION OF ANODIC NANOCOATINGS ON Nb  
IN THE POTASSIUM NITRATE MELT

# Monday, June 30<sup>th</sup>

15:30	<b>Methods</b>
15:30÷16:30	<i>O.A. Shlyakhtin, A.M. Skundin, Jung-Ho Ahn, Jeon-Kook Lee, Young-Jei Oh</i> SYNTHESIS AND SUPERCAPACITOR BEHAVIOUR OF NI-MN HYDROXOCARBONATES
16:30÷17:00	<i>Mañas, K., Svoboda, E., Sukáč, J., Kusmič, D.</i> EVALUATION OF SURFACE TEXTURE WITH CONFOCAL LASER SCANNING MICROSCOPE OLS 3000
18:00 ÷ 20:00	<b>Ceremonious conference opening + Reception</b>

## Tuesday, July 1<sup>st</sup>

- 9:30 ÷ 11:30      **Accumulators**
- 9:30                      *Choi, N.-S., Profatilova, I. A., Roh, S., Song, E.-H.*  
POSSIBILITY OF USING IONIC LIQUIDS WITH GRAPHITE ANODE:  
CORRELATION BETWEEN ELECTROCHEMICAL AND THERMAL  
PROPERTIES
- 10:00                      *Fedorková, A., Wiemhöfer, H.-D., Oriňáková, R., Oriňák, A., Majerník, A.,  
D. Kaniansky*  
IMPROVING LITHIUM BATTERIES BY CONDUCTING  
POLYPYRROLE
- 10:30                      *Jiráček, T., Vondrák, J., Sedlaříková, M.*  
NANOCOMPOSITE ELECTRODE MATERIALS WITH SPINEL  
STRUCTURE FOR LITHIUM-ION BATTERIES
- 11:00                      *Walkowiak, M., Waszak, D., Gierczyk, B., Schroeder, G.*  
NOVEL FUNCTIONAL CO-SOLVENTS/ADDITIVES FOR LI-ION  
BATTERIES BASED ON SILANE COMPOUNDS
- 11:30 ÷ 12:00      **Discussion**
- 12:00 ÷ 13:00      **Lunch time**
- 13:00 ÷ 13:30      **Accumulators**
- 13:00                      *Vrbický, J., Špičák, P., Svoboda, V., Sedlaříková, M., Vondrák, J., Kazelle, J.*  
COBALT ADITIVES IN NICKEL HYDROXIDE
- 14:30                      **Discussion**
- 15:30                      **Departure for castle Milotice (sightseeing)**
- 17:30                      **Wine cellar Milotice (wine gustation, dinner)**

## Wednesday, July 2<sup>nd</sup>

- 9:00 ÷ 10:30      **Poster section + Discussion**  
(Nanosized or layered materials, Solid and polymeric conductors,  
Fuel cells)
- 10:30 ÷ 11:00      **Coffee break**
- 11:00 ÷ 11:30      **Solid and polymer conductors**
- 11:00              *Chervakov, O., Andriianova, M., Apostolova, R., Shembel, E., Neduzko, L.,  
Ryabenko, V.*  
CATHIONIC POLYMER ELECTROLYTES FOR LITHIUM-ION POWER  
SOURCES
- 11:30 ÷ 12:00      **Discussion**
- 12:00 ÷ 13:00      **Lunch time**
- 13:00 ÷ 14:00      **Fuell cells**
- 13:00              *Berezovska, A. V., Pirsky, Yu. K., Kublanovsky, V. S.*  
COMPLEXES OF 3D METALS WITH  
HEXAMETHYLENEDIAMINETETRAACETATE AS PRECURSORS  
FOR OXYGEN REDUCTION ELECTROCATALYSTS
- 13:30              *David, J.*  
RECYCLATION OF BATTERIES AND ACCUMULATORS
- 14:00 ÷ 16:30      **Poster section + Discussion**  
(Special electrochemical components, Accumulators, Methods)
- 16:30 ÷ 18:00      **Sightseeing – City of Brno**
- 18:00 ÷ 20:00      **Visitation brewery PEGAS Brno**

# List of posters

## Nanosized or layered materials

*Kadlec, J., Hrubý, V.*

DUPLEX SURFACE TREATMENT OF TITANIUM BASED MATERIALS

*Ferrara, G., Inguanta, R., Piazza, S., Sunseri, C.*

ELECTROCHEMICAL FABRICATION OF Sn-Co NANOWIRES IN ANODIC ALUMINA TEMPLATES

*Lota, K., Lota, G., Sierczyńska, A.*

SYNTHESIS OF CARBON NANOSTRUCTURES BY PYROLYSIS OF ACETYLENE USING ALLOY AB5

*Makovička, J., Sedlaříková, M., Vondrák, J.*

NATURAL GRAPHITE AFTER OXIDATIVE TREATMENT FOR LI-ION BATTERIES

*Kadlec, J., Jelínek, M., Kocourek, T., Dvořák, M., Joska, Z.*

HYBRID LASER-MAGNETRON DEPOSITION OF TiC AND TiCN THIN FILMS

*Macalík, M., Sedlaříková, M., Vondrák, J.*

PRESENCE OF HYDROGEN PEROXIDE IN SnO<sub>2</sub> THIN FILMS PREPARATION

## Solid and polymeric conductors

*Reiter, J., Michálek, J., Přádny, M., Chmelíková, D., Širc, J.*

Li<sup>+</sup> AND H<sup>+</sup> SINGLE-ION CONDUCTING POLYMER ELECTROLYTES

*Reiter, J., Dominko, R., Jakubec, I., Michálek, J.*

POLYMER ELECTROLYTES FOR LITHIUM-ION BATTERIES OPERATING AT ELEVATED TEMPERATURES

*Osińska, M., Walkowiak, M., Rusinek, M.*

EFFECT OF HIGH FILLER CONTENT ON THE CHARACTERISTICS OF GEL POLYMER ELECTROLYTES BASED ON PVdF/HFP AND FUNCTIONALIZED SILICAS

*J. Vognar, M. Macalík, P. Špičák, J. Vondrák, V. Novák, O. Krejza, K. Bartušek*

A STUDY OF PMMA BASED GEL ELECTROLYTES CONTAINING NA<sup>+</sup> IONS BY NUCLEAR MAGNETIC RESONANCE

*Ondřej Krejza, Petr Špičák, Marie Sedlaříková, Jiří Vognar, Jiří Vondrák*

HETEROGENEITY OF PMMA-PC BASED GEL ELECTROLYTES

*J. Vognar, M. Macalík, P. Špičák, K. Bartušek, V. Novák, J. Vondrák*

DETERMINATION OF DIFFERENCE OF T<sub>2</sub> RELAXATION TIME MEASUREMENT WITH PMMA BASED GEL ELECTROLYTES

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## Fuel cells

*Danilov, M. O., Ivanova, N. D., Melezhyk, A. V., Boldyrev, E. I., Stadnik, O. A.*  
MOLYBDENUM OXIDE-CARBON NANOTUBES NANOCOMPOSITES

*Pirsky, Y. K., Kublanovsky, V. S.*  
MODIFICATION OF CARBON BY PYROLYSIS PRODUCTS OF HETEROBIMETALLIC  
MnII/MII AND ZnII/MII COMPLEXES (M=Cu, Ni) FOR THE ELECTROREDUCTION OF  
OXYGEN

*Furuya, N., Mohri, R.*  
PREPARATION OF GAS DIFFUSION ELECTRODES BY ELECTROPHORETIC  
DEPOSITION

*Kopczyk, M., Kowal, A., Sierczyńska, A., Lota, K., Lota, G.*  
HYDROGEN STORAGE ALLOYS AS ANODE MATERIALS FOR THE ALKALINE FUEL  
CELL

*J. Vognar, P. Dvořák, P. Černoš, V. Novák, J. Vondrák, M. Sedlaříková*  
ELECTROCHEMICAL CARBON STUDY PART I. ENVIRONMENTAL SEM VIEW

## Special electrochemical components

*Lota, K., Lota, G., Sierczyńska, A.*  
SUPERCAPACITORS BASED ON NICKEL OXIDE/CARBON MATERIALS COMPOSITES

*Dvořák, P., Vondrák, J., Sedlaříková, M.*  
CARBON BASED ELECTRODE MATERIALS FOR SUPERCAPACITORS

*Knotek, T., Kunovjánek, M., Barath, P., Vondrák, J.*  
GALVANIC DEPOSITION OF METALS WITH ELECTROCATALYTIC PROPERTIES

## Accumulators

*Apostolova, R., Neduzhko, L., Samoylov, S., Shembel, E.*  
ELECTROLYTIC IRON SULFIDES IN LITHIUM POWER SOURCE MODEL WITH PVdF  
ELECTROLYTES

*Tsyachny, V., Apostolova, R., Shembel, E.*  
MODELING THE PROCESSES OF Li<sup>+</sup> INTERCALATION WITH THE PHASE TRANSITIONS  
IN THE MATERIALS OF LITHIUM POWER SOURCES

## List of posters

*Shembel, E., Nosenko I, A., Tron, A.*

CHEMICAL AND ELECTROCHEMICAL STABILITY OF SOLID STATE GLASSY INORGANIC ELECTROLYTE BASED ON THE SYSTEM  $\text{Li}_2\text{O-LiF-P}_2\text{O}_5$

*Micka, K., Calábek, M., Bača, P., Křivík, P., Lábus, R., Bilko, R.*

STUDIES OF DOPED NEGATIVE VRLA BATTERY ELECTRODES

*Bača, P.*

MODIFIED CONDUCTOMETRIC METHOD

*Křivík, P.*

CELL VOLTAGE AND ELECTRODE POTENTIAL COURSES OF LEAD ACID BATTERY IN PSoC REGIME

*Abraham, P.*

MEASUREMENT OF THE CORROSIVE LAYER RESISTANCE OF LEAD ALLOYS USING MODIFIED CONDUCTOMETRIC METHOD

*Lábus, R.*

THE DISTRIBUTION INTERNAL RESISTANCE AND TOTAL CHARGE PASSED ON THE SURFACE OF LEAD-ACID ACCUMULATOR ELECTRODES DURING DISCHARGE

*Schmuck, M., Balducci, A., Rupp, B., Lux, S., Passerini, S., Winter, M.*

ALLOYING OF ELECTRODEPOSITED SILICON WITH LITHIUM FOR THE USE AS ANODE MATERIAL IN LITHIUM ION BATTERIES

*Lux, S. F., Schmuck, M., Balducci, A., Passerini, S., Winter, M.*

THE ELECTRODEPOSITION OF TIN IN ROOM TEMPERATURE MOLTEN SALTS

*Fuchsbichler, B., Kren, H., Schmuck, M., Sternad, M., Bayer, C., God, C., Lux, S., Stangl, C., Koller, S.*

INFLUENCE OF PRESSURE ON THE CYCLING STABILITY OF SILICON-ELECTRODES

*Koller, S., Fuchsbichler, B., Schmuck, M., Bayer, C., God, C., Lux, S., Stangl, C., Kren, H., Sternad, M.*

COMPREHENSION AND TAILORING OF CELLULOSE BASED BINDERS AS FUNDAMENT FOR APPLICABLE SILICON/GRAPHITE COMPOSITE ANODES

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## Methods

*Tarnopolsky, V. A., Kulova, T. L., Skundin, A. M.*  
IMPEDANCE OF LITHIUM-ION BATTERIES

*Nádherná, M., Reiter, J.*  
THE ELECTROCHEMICAL REDOX PROCESSES IN METHACRYLATE-BASED POLYMER  
ELECTROLYTES – STUDY ON MICROELECTRODES

*Jandová, K., Dolenský, J., Vaněk, J., Chobola, Z.*  
MICROPLASMA NOISE SOURCES IN SOLAR CELLS

*Stejskal, P., Barath, P., Starý, J.*  
DEPOSITING OF THIN LAYERS AND POSSIBILITIES OF TESTING THE QUALITY OF  
THEIR SURFACE

*Vaněk J., Jandová K., Sládek F.*  
LIGHT BEAM INDUCED VOLTAGE IN DYNAMIC MODE

## Information

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## Notes

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