BRNO UNIVERSITY OF TECHNOLOGY

19th ABAF
BRNO 2018
Advanced Batteries, Accumulators and Fuel Cells

LITHIUM BATTERIES SUMMER SCHOOL BRNO University of Technology

25th – 26th August 2018

PROGRAM BROCHURE

A workshop supported by Metrohm Czech Republic.

Metrohm

Li-Batteries Summer School

Dear participants and batteries fans,

our **Li-Batteries Summer School** is an unique opportunity for people having an interest in the field of lithium power sources to get to know the modern investigation techniques that are mostly used for research and investigation of new advanced material. The Workshop of the Summer School consists of theoretical lectures but even more practical hands-on laboratory experiments. Both parts are lead by experts from the Centre for Utilization of Renewable Energy and also by invited specialist from cooperating foreign institutions.

The previous year of the workshop showed a strong interest in this growing field of energy storage and especially in the practically oriented laboratory part. Therefore we decided to extend the workshop to a two-day event. The workshop thus will also include the time for individual consultations and finally for not less important networking.

We believe that the workshop will be a good option how to deeply understand electrochemical processes inside batteries, how to obtain skills to measure and evaluate material performance and how to effectively begin your research career.

WHEN: 25th – 26th August 2018

WHERE: Brno University of Technology, Department of Electrical and Electronic Technology, Technicka 10, Brno, Czech Republic 4th floor, Meeting room - N 4.38

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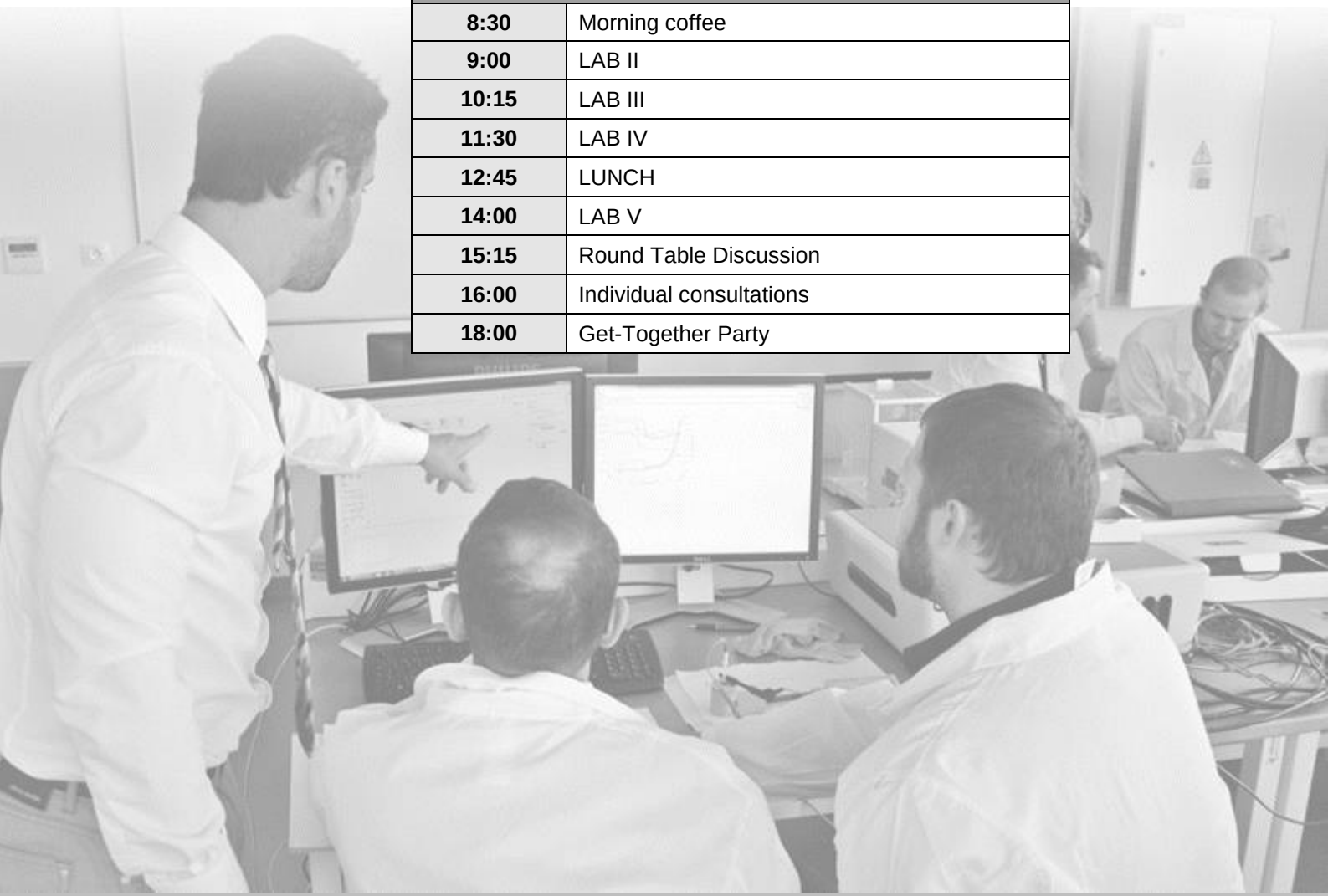
PROGRAM:

Saturday - 25th August	
10:00	Registration
10:30	BUT and the LiBSS workshop Introduction
10:45	Introduction of the Participants
11:00	Lithium batteries - overview lecture
11:40	DC Techniques in Battery Research
12:20	AC Techniques in Battery Research
13:00	LUNCH
14:30	XRD – possibilities of material evaluation
15:00	EQCM in Battery Research
15:30	Coffee break
16:00	LAB I
17:30	Conclusion of the first day
19:00	Social program
Sunday - 26th August	
8:30	Morning coffee
9:00	LAB II
10:15	LAB III
11:30	LAB IV
12:45	LUNCH
14:00	LAB V
15:15	Round Table Discussion
16:00	Individual consultations
18:00	Get-Together Party



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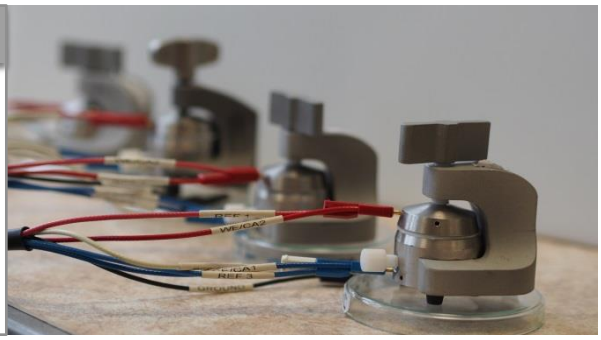
WORKSTATIONS:

Setup Your Li-Cell

- Work in a glove box under argon atmosphere
- Assembling the experimental Li-cell
- Preparation of electrodes
- Confirmation of the cell function

DC Techniques

- Cyclic voltammetry
- Galvanostatic cycling
- Determination of specific capacity
- Rate capability test
- Effect of pseudocapacitance

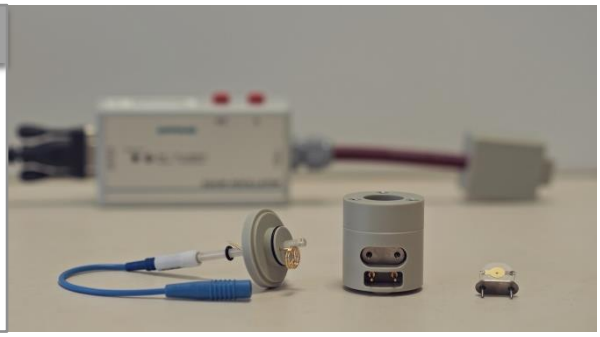


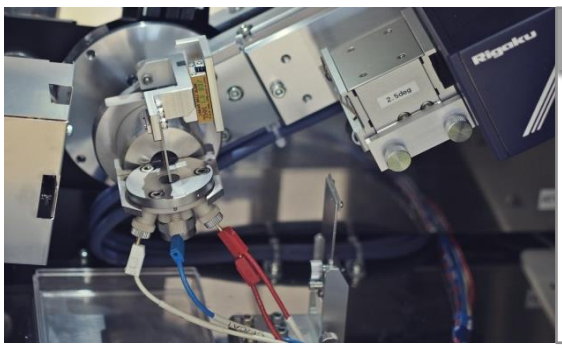
Impedance Spectroscopy

- Measurement of the Nyquist diagram
- Validation of the system response
- Selection of the equivalent circuit
- Capacity and diffusion behavior

Quartz Crystal Microbalance

- Deposition of the electrode material
- Cycling of material
- Detection of mass changes
- Data evaluation
- Stripping of the active mass





XRD Structural Analysis

- Sample preparation
- Set-up measurement
- Data evaluation using PDXL
- Determination of the phase composition
- Concept of In-situ measurement

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WORKSHOP FEE:

THE WORKSHOP REGULAR COST: EUR 360.-

EARLY REGISTRATION*: EUR 330.-

The workshop price includes:
All included - Printed materials, Coffee breaks, Lunch
*Early registration requires payment before 1st August 2018

REGISTRATION:

For registration, please fill the following **FORM** or contact us at libss@gmail.com

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