



dronepicr

# Workshop on Liquid Metal Battery Fluid Dynamics

## LMBFD2017

### Dresden

### May 16 – 17, 2017



LIMTECH Alliance

**HZDR**

HELMHOLTZ  
ZENTRUM DRESDEN  
ROSSENDORF



## Scope

Liquid metal batteries (LMBs) are promising candidates for cheap grid scale energy storage, a key ingredient of future energy systems based mainly on volatile renewable sources as wind and solar power. Based on a stable density stratification of two liquid metals and a molten salt, LMBs offer several unique advantages as huge current densities, simple construction, easy scalability on the cell level, and potentially near infinity cycle life. To realize these promises, challenging problems in high-temperature electrochemistry, materials science, and metallurgy have to be addressed. Fluid mechanics enters the field since we are dealing with cells having a completely liquid interior. Recently, this aspect has been addressed by a number of researchers and interest in this topic is on the rise. This workshop aims to support the trend, to offer a platform for discussion, and to facilitate future collaborations. While the focus shall be on fluid dynamics, talks on other aspects of liquid metal batteries and related devices (e.g., aluminum reduction cells) are equally welcome and clearly do belong to the scope of the workshop.

## Topics

- mixing and mass transfer
- natural convection
- magnetohydrodynamic instabilities (e.g., metal pad roll, Tayler)
- electro-vortex flows
- electrochemistry of LMBs (experiments as well as modeling)
- cell design, materials selection, corrosion
- scale-up, dimensioning and grid integration of LMBs
- stack design and heat management

## Important dates

15 February 2017	online registration opens
5 March 2017	deadline for abstract submission
12 March 2017	notification of acceptance
26 March 2017	closing of special rate hotel reservation and online registration

## Abstracts

Please use the LaTeX-template provided on the workshop web-page to prepare your abstract. Should you prefer a different word processor, please follow closely the layout of the file **abstract\_template.pdf** (included in the package). Submit the abstract as a pdf-file to [lmbfd2017@hzdr.de](mailto:lmbfd2017@hzdr.de).

## Workshop Venue

LMBFD2017 will be held in the QF Hotel, a downtown hotel in Dresden in the direct vicinity of the Frauenkirche (Church of Our Lady), Brühl's Terrace and the river Elbe. Dresden, the capital of Saxony, is well known for its cultural and historical highlights. Depending on the workshop program and interest, a visit to the Liquid Metal Laboratory of the Helmholtz-Zentrum Dresden - Rossendorf as well as a city tour is planned to be offered.

## Accommodation

A limited amount of rooms for a special rate are reserved in QF Hotel and ibis Hotel Bastei

hotel	single room	double room
QF Hotel	96 €/night	116 €/night
ibis Hotel Bastei	59 €/night	79 €/night

Prices include breakfast and VAT. Room booking will be possible together with online registration and shall be available from February 15 on.

## Workshop fee

The workshop fee will be 200 € including a welcome reception on May 15 and the workshop dinner on May 16.

## Contact and News

Up to date information and further details can be found on the workshop web-page:

[www.hzdr.de/lmbfd2017](http://www.hzdr.de/lmbfd2017)

Any questions related to the workshop should be addressed by e-mail to:

[lmbfd2017@hzdr.de](mailto:lmbfd2017@hzdr.de)

Do not hesitate to contact us if you need further information.

We are looking forward to seeing you in Dresden!

Tom Weier	Norbert Weber
<a href="mailto:t.weier@hzdr.de">t.weier@hzdr.de</a>	<a href="mailto:norbert.weber@hzdr.de">norbert.weber@hzdr.de</a>