

Programme LMBFD2017

as of May 5 2017

Monday, May 15 2017

18:00-20:00 Welcome reception

Tuesday, May 16 2017

9:00-10:30 Opening Session/Electrochemistry I

session chair: G. Gerbeth

9:00 Opening Address
Roland Sauerbrey

9:10 An overview of liquid metal batteries
Donald Sadoway (invited)

10:00 Sodium-Zinc liquid metal battery
K.S. Osen, O. Kjos, O.E. Kongstein, C. Sommerseth, A.M. Martinez, A. Solheim, A. Støre, G.M. Haarberg, J. Xu

10:30-11:00 Coffee

11:00-12:00 Electrochemistry II

session chair: G. Mutschke

11:00 On the importance of ionic conduction in the molten salt confined between liquid electrodes
E. Karimi-Sibaki, A. Kharicha, M. Wu, A. Ludwig

11:30 Ionic mixtures with volume constraints: models and numerical approaches
J. Fuhrmann, A. Linke, Ch. Merdon

12:00-13:30 Lunch

13:30-15:00 Electrochemistry III

session chair: F. Stefani

13:30 Liquid metal batteries: activities at HZDR
T. Weier, V. Galindo, G.M. Horstmann, S. Landgraf, M. Nimtz, A. Salas, M. Starace, F. Stefani, N. Weber

14:00 Study of the electrochemical and thermal stabilities of different ionic liquids as electrolytes for low temperature liquid metal batteries
W. El Mofid, C. Lalau, A. Ispas, A. Bund

14:30 Visual observation and charge/discharge behaviour of liquid metal cells
M. Nimtz, S. Landgraf

15:00-15:30 Coffee

15:30-17:30 Thermal convection

session chair: D. Kelley

15:30 Numerical studies in liquid metal Rayleigh-Bénard convection
J. Schumacher, J.D. Scheel

16:00 Assessment of thermal phenomena in Li-Bi liquid metal batteries through analytical and numerical models
P. Personnetaz, T. Köllner, M. Nimtz, N. Weber, T. Weier

16:30 Thermal Rayleigh-Marangoni convection in a liquid-metal-battery model
T. Köllner, T. Boeck, J. Schumacher

17:00 Investigation of instabilities of a liquid metal/electrolyte interface caused by thermal convection
A. Wiederhold, A. Cordes, C. Resagk

19:30-22:00 Dinner

Wednesday, May 17 2017

8:30-10:00 Interface instabilities I

session chair: O. Zikanov

- 8:30 Magnetically stabilised large scale liquid metal batteries
V. Bojarevics, A. Tucs, K. Pericleous
- 9:00 Metal pad roll in cylinders: perturbation theory vs. DNS
W. Herreman, C. Nore, J.-L. Guermond, L. Cappanera, N. Weber
- 9:30 Stability of fluid layers carrying a normal electric current revisited
J. Priede

10:00-10:30 Coffee

10:30-12:00 Interface instabilities II

session chair: V. Bojarevics

- 10:30 Shallow-water modeling of metal pad instabilities
O. Zikanov
- 11:00 Coupling and stability of interfacial waves in liquid metal batteries
G. M. Horstmann, N. Weber, T. Weier
- 11:30 MHD stability of liquid metal batteries
A. Tucs, V. Bojarevics, K. Pericleous

12:00-13:30 Lunch

13:30-15:00 Mixing/Instabilities

session chair: A. Kharicha

- 13:30 Current path and electrode mixing: Experiments and models
D. H. Kelley
- 14:00 Numerical simulations of incompressible multiphase hydrodynamic and magnetohydrodynamic flows
C. Nore, W. Herreman, L. Cappanera, J.-L. Guermond
- 14:30 Sun, batteries, sun
F. Stefani, V. Galindo, A. Giesecke, N. Weber, T. Weier

15:00-15:30 Coffee

15:30-17:00 Electro-vortex flows/Advanced measurement techniques

session chair: C. Nore

- 15:30 Small scale interface instability generated by an electro-vortical mechanism
A. Kharicha, E. Karimi-Sibaki, M. Wu, A. Ludwig
- 16:00 Current-driven flow in a liquid-metal-battery-like geometry
M. Starace, N. Weber, A. Salas, T. Weier
- 16:30 Flowmapping in a model of a secondary hydraulic zinc-air battery
C. Kupsch, R. Nauber, L. Büttner, J. Czarske, L. Feierabend