

Invitation to a German-Danish seminar concerning:

BATTERY TECHNOLOGIES FOR ELECTRO MOBILITY AND SMART GRID PURPOSES – REGIONAL RESEARCH ACTIVITIES AND BUSINESS DEVELOPMENT OPTIONS

Lithium ion batteries are important in developing the energy systems of the future. They offer storage possibilities for renewable energy sources in applications within electro mobility and establishment of Smart Grids. The comparative advantages of the lithium ion batteries relate to relatively high energy densities combined with acceptable charging and durability characteristics. However, large scale application of lithium ion battery technologies depends on improvements in technical as well as cost/production related issues concerning:

- **Battery cells:** selection and development of materials and methods for production of stable lithium ion battery cells with high energy density
- **Battery packages:** development of efficient, reliable and cost competitive battery packages
- **Battery application:** integration of battery packages especially within electro mobility and Smart Grid applications

This seminar provides a status on regional German-Danish research and development activities related to lithium ion battery technology. Furthermore, it gives an overview of business development options and examples of on-going initiatives.

PROGRAM

Welcome and overview

- 09:30 Welcome
[Prof. Dr.-Ing. Wolfgang Benecke, ISIT, Fraunhofer Institute]
- 09:40 Introduction to seminar - batteries in the energy systems of the future
[Jens Sandmeier / Gustav Nebel, WTSH / UdviklingsRåd Sønderjylland]

Battery technology research and business in the German-Danish region

- 09:50 Basics of battery technology and materials/methods for lithium ion battery cell production – current research status and prospects for the future
[Dr. Andreas Würsig / Jannes Ophey, ISIT, Fraunhofer Institute]
- 10:35 Coffee break
- 10:50 Potentials in application of advanced materials for lithium ion battery cells
[Søren Dahl, Haldor Topsøe A/S]
- 11:05 Production of efficient and high quality lithium ion battery cells
[Dr. Detlev Repenning, ECC Repenning GmbH]
- 11:35 Experiences with production and application of battery packages for accessory drives in heavy duty refuse collection vehicles
[Poul Erik Seekjær, Banke ApS]
- 12:00 Lunch
- 12:40 Fraunhofer Institute - laboratory visit

TIME AND PLACE

28 November 2013
09:30 – 15:45
ISIT, Fraunhofer
Fraunhoferstraße 1
D-25524 Itzehoe

REGISTRATION

Participation is free of charge but registration before 22 November is necessary:

- German participants: info from Jens Sandmeier (+49 431 66666 807) and registration on <http://wtsh.de/wtsh/de/service/termine/detail.php?eventId=323>
- Danish participants: info from Gustav Nebel (+45 3055 3165) and registration on www.leanenergy.dk/arrangementer/2013/battery-technology-seminar/

The seminar is arranged in cooperation between WTSH, ISIT Fraunhofer, the eMOTION project, TINV and Lean Energy Cluster



- 13:20 SmartRegion Pellworm application of batteries in the energy system
[Dieter Haack, Schleswig-Holstein Netz AG, SmartRegion Pellworm]
- 13:50 Experiences with production of battery packages for Smart Grid solutions
[Dr. Gerold Neumann, Dispatch Energy Innovations GmbH]
- 14:10 Battery management systems – the heart of efficient batteries
[Adetunji Adebusuyi, Lithium Balance A/S]
- 14:30 Battery lifetime assessment in mobility and energy storage
[Kjeld Nørregaard, Danish Technological Institute]
- 14:50 Coffee break

Which technological challenges and regional business perspectives?

- 15:10 Panel discussion and summing up on presentations
[Moderation: Jens Sandmeier / Gustav Nebel, WTSH / UdviklingsRåd Sønderjylland]

Panel members:

- Dr. Andreas Würsig / Jannes Opey, ISIT, Fraunhofer Institute
- Søren Dahl, Haldor Topsøe A/S
- Dr. Detlev Repenning, ECC Repenning GmbH
- Poul Erik Seekjær, Banke ApS
- Dr. Gerold Neumann, Dispatch Energy Innovations GmbH
- Adetunji Adebusuyi, Lithium Balance A/S
- Kjeld Nørregaard, Danish Technological Institute

Examples of topics for debate:

- Which challenges in relation to lithium ion battery technologies are most important and of highest regional German-Danish interest?
- How can research and development institutions contribute to and improve cooperation in relation to lithium ion battery development?
- Which business development options exist in the German-Danish region in connection to the lithium ion battery value chain, and how can they be promoted?

- 15:45 Conclusions

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