



4th Real-SOFC Workshop on
Understanding SOFCs:
What can we learn from “advanced methods”
and “accelerated testing”?
10-11 July 2007
Chateau de la Baume, Seyssins-Grenoble, France

Final Announcement
&
Registration

Date: 10-11 July 2007

Venue: Chateau de la Baume, Seyssins-Grenoble, France (<http://chateau.de.la.baume.free.fr>)

Scope of the Workshop:

The aim of the workshop is to identify promising analysis methods and testing protocols to accelerate the durability evaluation for SOFC cells and stacks.

Topics of the Workshop:

- review the recent experience gained from Real-SOFC cell and stack tests at benchmark conditions and from the test matrix
- survey advanced and complementary techniques to improve the characterisation of components, cells and stacks and gain new insights into degradation effects
- learn from accelerated testing in related areas such as: ceramics, PEFC, batteries, electronics, etc.
- identify strategies to accelerate long term tests in SOFC



Schedule:

Tuesday, 10 July 2007, 8:30 h – 17:00 h

Setting the baseline

Session 1: Does the SOFC research help us to understand degradation? Chair: Peter Holtappels EMPA

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|-------|-----------------------------|---|
| 08:30 | Trofimenko IKTS | <i>Mechanisms contributing to SOFC lifetime limitations</i> |
| 09:00 | Nabielek FZJ | <i>Sulfur tolerance of SOFC anodes</i> |
| 09:30 | Bujalski, Uni
Birmingham | <i>SOFC thermal cycling results</i> |
| 10:00 | Perednis
EifER | <i>Single Repeat Unit testing setup technology</i> |
| 10:30 | Coffee break | |
| 11:00 | de Haart FZJ | <i>A selection of Real-SOFC investigations and results at FZJ</i> |
| 11:30 | Van herle EPFL | <i>Synthesis of our lessons from the stack test results</i> |
| 12:00 | Malzbender FZJ | <i>Advanced characterisation methods</i> |
| 12:30 | <i>Lunch break</i> | |

Session 2: The industrial emphasis on diagnostic methods in QC/QA Chair: Julie Mougine CEA

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|-------|---------------------|--|
| 13:40 | Lee INER | <i>New INER stack testing results</i> |
| 14:00 | Sfeir HEXIS | <i>New HEXIS stack testing results</i> |
| 14:20 | Hoffmann HTc | <i>New SOFCpower stack testing results</i> |
| 14:40 | Tanaka AIST | <i>Testing method of electrical efficiency for SOFC systems with LNG or LNG-based city gas</i> |
| 15:00 | Föger CFCL | <i>CFCL testing and demonstration philosophy</i> |
| 15:25 | Sishtla GTI | <i>Cell, stack and system testing at GTI</i> |
| 15:50 | <i>Coffee break</i> | |



Exploring the playground further

Session 3: Advanced diagnostics

Chair: Heinz Nabielek FZJ

16:15	Ise, Siemens Siemens Erlangen	<i>Siemens SOFC QA approach by segment testing</i>
16:45	Friedrich DLR	<i>Locally resolved characteristics of SOFCs: current density, temperature and gas compositions along the fuel path</i>
17:15	Holtappels EMPA	<i>Advanced characterisation of SOFC components and stacks</i>
17:45	van Herle EPFL	<i>Methods and approaches for microstructure quantification</i>
18:15	Ramschak AVL	<i>New measurement techniques for determination of SOFC redox-state and cell operating status</i>
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19:15		<i>dinner</i>

Wednesday, 11 July, 08:30 – 15:00

Can we get faster results by acceleration?

Session 4: Accelerated Testing ... Goals-Experience-Perspectives

Chair: Jan Van herle EPFL

08:30	Meeker, Uni Iowa State	<i>Research in Accelerated Testing</i>
09:15	Wenzl, Clausthal	<i>From a battery point of view: Operating conditions, stress factors, ageing mechanisms and performance, and linking them to accelerated testing</i>
09:45	Lemaire, CEA	<i>Accelerated testing of batteries and electrical storage systems</i>
10:15???	<i>Pr. Michel Cassir Feedback from MCFC experience, including durability and accelerated tests, for the SOFC technology</i>	
10:45		<i>coffee break</i>
11:15	Hatae Tokyo Gas	<i>Study on electrochemical reoxidation of anode supported SOFC using oxide-ion current</i>
11:45	Hayd Uni Karlsruhe	<i>Accelerated SOFC Testing</i>
12:15	Fabian ABB	<i>Reliability and accelerated testing in Power Electronics</i>
12:45		<i>Lunch break</i>

14:00-15:00 *What is the outcome?*

Session 5: Session summaries and concluding discussion

Chair: Robert Steinberger-Wilckens

- On-site summaries of the Session Chairpersons
- What are opportunities for “advanced methods” and “accelerated testing”?



- How can this contribute to improve and speed up development & understanding?
- Documentation, action list and further plans by Peter Holtappels



Who should attend:

Participation is not restricted. However, the number of participants is limited to 60.

Contributions to this workshop are invited and abstracts should be submitted with the registration form attached below.

Fee: 310 € per attendee (including all meals, coffee breaks and 2 nights at the castle starting on Monday evening)

Timing and Deadlines:

REGISTRATION: Now! including abstract of presenters.

Final Notification and Programme: 25 June 2007

Local Organisation

Julie Mougin, CEA

Marie Petitjean, CEA

Sarah Chiffard, CEA

Scientific Organisation

Julie Mougin, CEA

Heinz Nabielek, FZJ

Robert Steinberger-Wilckens, FZJ

Peter Holtappels, EMPA



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“accelerated testing”?**

10-11 July 2007

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The application can be emailed, faxed or snailmailed to
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First Name:

Surname:

Affiliation:

Postal address:

Tel:

Fax:

e-mail

Participation at the Workshop

I will attend the workshop: Arrival date: _____ Departure date: _____