Development of Test Procedures and Lifetime Improvement of MEAs for Automotive Application

- J. Mitzel¹, P. Gazdzicki¹, M. Schulze¹, <u>K. A. Friedrich</u>^{1,2}, J. Hunger³, A. Kabza³ and L. Jörissen³
- 1. German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany
- 2. University of Stuttgart, Institute of Energy Storage, Pfaffenwaldring 31, 70569 Stuttgart, Germany
- 3. Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Helmholtzstraße 8, 89081 Ulm, Germany



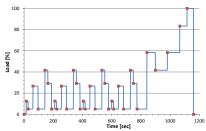


Outline

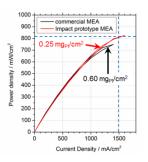
- Introduction
- Stack-Test Project
- Harmonized operating conditions
- Durability testing
- IMPACT Project
- Determination of degradation rates
- Recovery of reversible voltage losses
- Conclusion



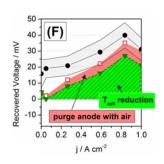
Conclusion

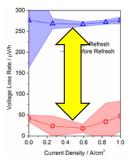


- > Harmonized test procedures for automotive durability
- > Reliable determination of degradation rates
- Improvement of performance und durability by material engineering of CCM



- > Discrimination and determination of degradation rates
- Recovery of reversible losses by shut-down procedure









7th International Conference on Fundamentals and Development of Fuel Cells

January 31 to February 2, 2017



Stuttgart, Germany



Haus der Wirtschaft, Willi-Bleicher-Straße 19,

Fuel Cell & Electrolysis Technologies

- · Components, Materials and Design
- · Modelling, Control and Optimization
- · Systems, Balance of Plant and Integration
- · Diagnosis, Prognosis, durability and Lifetime Improvement
- Hydrogen Storage
- · Microbial Fuel Cells

Applications - Integration of Fuel Cells & H2 in

- Clean Vehicles and Hybrid Vehicles
- · Energy Efficient- Buildings and CHP
- · Portable Applications, Back-Up Power, Light Traction and Auxiliary Power Units
- Storage of Renewable Energy (Systems, H2 Infrastructure)
- Environmental Impact, Safety, Markets and Policy Issues

Deadlines

Special session proposal: October 15, 2016

Abstract submission: October 31, 2016

No late submission will be accepted!!

Notification of acceptance to authors: by November 24, 2016

Final paper submission: December 31, 2016



Thank you for your attention.

The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) for Fuel Cell and Hydrogen Joint Technology Initiative under Grant No. 303452 (Impact) and 303445 (Stack-Test).

