

Minutes from Durability Working Group (DWG) Kick-off Meeting 6/9/10

Contaminants

Discussion on effect of air and system contaminants on performance and durability, initiated by S. Blanchet (Nuvera)

Question of extent of impurity work in six newly-awarded durability projects represented at this meeting. None of the projects are specifically looking at the effect of system and air impurities on long-term performance degradation. New Argonne durability project does include task on effect of impurities introduced during catalyst synthesis on degradation mechanisms.

Discussion on inclusion of newly-funded contaminant projects on durability working group – as these projects were in durability topic area in last solicitation.

Guido Bender (NREL) was present at this kick-off meeting. He is now involved in NREL contaminant project and was involved in writing the U Hawaii contaminant proposal. He stated that durability was not a focus of either of the two new contaminant projects, but emphasized that contaminants can play a major role in irreversible performance degradation.

After a lengthy discussion on impurities, it was generally agreed upon that representatives from the contaminant projects should be invited to the DWG meetings. (Post meeting note: An e-mail was sent to Donna Ho of DOE-HQ to ask DOE's opinion on inclusion of impurity project in DWG. She was to bring it up at the 6/29/10 DOE-HQ Fuel Cell Team meeting.)

Sharing of information from industrial projects/participants

Sylvia Bessel (Ballard):

Fundamental knowledge can be shared, but not specific identity of MEA components (i.e., catalyst identity)

Characterization techniques, procedures, and results can be shared

Performance degradation data can be shared

Rod suggested establishing a website for exchange of information. (Note from D. Myers 6/30/10: This has already been discussed with DOE (Donna Ho) and a website will be established shortly with a "members only section" for exchange of information between projects.)

Diagnostics

Need defined protocols for diagnostics and better diagnostic techniques.

Electrochemical diagnostics must take into account the capacitive behavior of the electrodes (i.e., actual potential on electrocatalyst will lag behind applied potential due to capacitance of electrode)

A compilation of a standard suite of diagnostic techniques and the information each technique provides would be useful for all of the durability projects

Adam Weber suggested there should be a matrix of the definition of diagnostics and the mechanisms they elucidate, the mechanisms covered by each project, and overall the areas being addressed in each project.

Adam and Rod have started compilation of this matrix.

Rod will send this matrix to each working group member organization, serially, rather than in parallel, for additions.

It was suggested that the focus/topic of the working group meetings be degradation mechanisms rather than individual projects.

It was suggested that the impurity projects be included in the distribution of this matrix.

Modeling

Rajesh Ahluwalia to export performance decay rates arising from working group projects for incorporation into DTI and TiAx cost analyses.

First working group teleconference to be between modelers of respective durability projects to determine areas of emphasis of each modeler and to promote collaboration and reduce redundancy where possible.

Durability working group meetings

Frequency of in-person meetings: two times per year

One meeting in conjunction with the AMR (May-June)

The other meeting in conjunction with either the Fuel Cell Seminar or the Electrochemical Society Meeting.

A vote was taken and it was decided that the Fall, 2010 meeting will be in conjunction with the Electrochemical Society meeting in Las Vegas, NV (Oct. 11-15, 2010).

Conference call meetings between sub-sets (e.g., modelers) of the entire durability working group will be held approximately every two months with all working group participants invited to listen in, but not to present material.

Can we use GoToMeeting or a similar program for the conference call meetings? (D. Myers to check with Shawna McQueen re use of Tech Team GoToMeeting).

Attendees at kick-off meeting of Durability Working Group

See Excel spreadsheet entitled "Working Group Members 6-10"

Post-working group meeting notes:

Nancy Garland of DOE-HQ was contacted regarding DOE participation on the Durability Working Group.

Donna Ho of DOE-HQ replied that she would be the DOE contact for the Durability Working Group.

Other DOE Fuel Cell Team Working Groups are: High temperature membrane, Transport, and Stationary.

Website information has been sent to Donna Ho for approval/posting.

Donna Ho will not be able to attend the Las Vegas ECS meeting, but will check to see if another DOE representative will be there (Ref: 6-16-10 e-mail from Donna Ho).

ACTION ITEMS:

1. Rod/Adam/Mukund to begin serial distribution of "diagnostic" matrix to representatives from working group organizations.
2. Debbie to contact Electrochemical Society regarding booking of a meeting room for the Fall, 2010 DWG meeting.
3. Debbie to have Andrea Chew (DOE) post latest version of DOE/Tech Team durability protocols on DOE/DWG website.