Newsletter – Fuel Cells 1/09

This newsletter contains information about recent and upcoming developments at the Cellkraft laboratory. For more detailed information, contact us directly.

Another milestone in reliability achieved

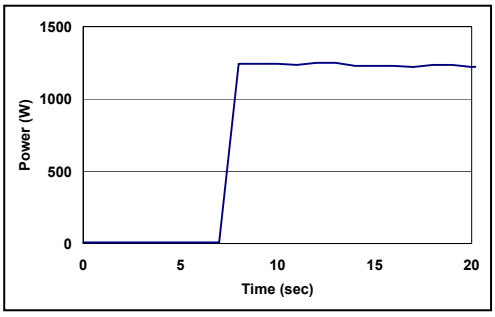
In last newsletter, we presented results from the customer test at TeliaSonera in Sweden where an S-1000 fuel cell started up reliably after a 6 months stand-still. Now an even longer stand-still test has been performed. In May 2009, a period of 16 months of standby ended with a simulated grid loss in the test at TeliaSonera. This is the longest period of standby in the test so far. To our knowledge there has been no longer stand-still with a successful start in the world. Most commonly fuel cell systems in backup applications are automatically starting up every month to maintain their ability to start up reliable.

The fuel cell started up and powered the telecom station during the grid loss and then got back into standby mode. This may sound trivial, but fact is that many Cellkraft competitors recommend that their back-up fuel cells are run on a regular basis. Cellkraft has put a large effort to develop a start-up algorithm that ensures that start-up will succeed no matter for how long time the fuel cell has been standing still. This test at TeliaSonera shows that the Cellkraft's choice of strategy is possible and that Cellkraft has come far in this development.

Photo: TeliaSonera testsite

Evaluating methanol reforming

During 2009 Cellkraft have been evaluating hydrogen production by methanol reforming in a project financed by the Swedish Defence Material Administration (FMV). The reformer was first put to the test in a tough test program before it was integrated with a Cellkraft S-1000 fuel cell. Results were so promising so the project now has entered a new phase where the units will be integrated in ruggedised cases as a hybrid system along with secondary Lithium batteries. The new system will be assembled and tested during the spring 2010 and will thereafter be demonstrated to the customer.



Graph: Transient step of power outtake from reformer/fuel cell system.

Photo: Tested methanol reformer with Cellkraft fuel mixer (top).

High temperature operation

Cellkraft fuel cells are unique with their cold capability, but the high temperature operation has not been examined to a large extent before. During the year, high temperature operation of the Cellkraft fuel cells was optimised to be able to function well also in hot climate conditions. The result is that Cellkraft fuel cells now are cleared for operation up to 45 deg C surrounding temperatures, which is in accordance with ETSI 300 198-1-3.

Work in progress

Under this headline Cellkraft will give a glimpse of some current development projects in the fuel cell area.

During 2009, work is begun to develop a light-weight fuel cell system. Cellkraft has seen that there is quite a potential to reduce weight and volume of the fuel cell system as well as tweaking up the power output. An early version of this new, lighter, fuel cell with much increased power density will be delivered to a customer during spring 2010. Cellkraft has since long offered systems with a high volumetric power density. The work to achieve a high gravimetric power density has now been initiated. Feel free to contact us if you would like to know more.

That was all for this time. Merry Christmas and all the best wishes for 2010!

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