-- IRPS 2008 Workshop (Tuesday, April 29th, 7:00p.m. - 9:00p.m.) --

fast WLR Monitoring

moderated by Andreas Martin

Word definition:
"Fast Wafer Level Reliability" (fWLR) Monitoring is a tool to monitor the stability of the process reliability in production after process qualification. These tests are highly accelerated stress measurements performed on wafer level with standard parametric equipment in a time regime of approximatley 1ms – 100s on a highly statistical basis. fWLR testing is done on scribe line test structures in-line (like electrical parameter testing).

Workshop contents:
fWLR Monitoring includes a large variety of stress tests and also a huge amount of different test structures. A lot of companies perform fWLR Monitoring as part of their standard process control monitor (or wafer acceptance test) or in parallel. Basically any test which stresses a device for a few 100 ms up to a few seconds is a fWLR test and assesses the reliability performance of the process. Different semiconductor manufacturers perform various fWLR tests with various sampling concepts. No international, commonly agreed standard is currently available to describe a minimum set up for fWLR Monitoring. As a result difficulties arise when the fWLR data should be compared between fabrication sites for the same process node.

Therefore, in this workshop a starting point will be layed out for a standard on fWLR Monitoring. In a first step it is important to survey the semiconductor manufacturers which fWLR test they have in place. In a second step a common list on the required tests for critical reliability items must be put together. And in a third step a first draft of a standard on fWLR Monitoring can be generated. Of course this includes some technical discussions on the type of stress measurements and test structures for each reliability risk. I am looking forward to an interesting and fruitful discussion.

If you would like to join this IRPS workshop in Phoenix and participate, I would like to ask you, to fill out (or at least prepare the answers of) the questionaire. The results will be published on the IRPS webpage.

fWLR questionaire

	gate oxide	plasma induced damage	inter/intra metal dielectric	MIM-caps	hot carriers	NBTI	PBTI	mobile ions	electro migration	stress migration	contact/via reliability	NVM tunnel oxide	others
which reliability risks do you cover already?													
tests for which reliability risks you do consider as a basic requirement?													
what is your sampling for the tests which you perform? (number of lots)/ (number of wafers)/ (DUT´s)													
have you correlated successfully results between fWLR and long term reliability data?													

have you developed your own fWLR test software?	
do you synchronise fWLR between fabs with same process nodes?	
would you contribute to the generation of an international standard?	