MEMS Reliability Short Course

Wednesday, May 28th 2008

9:00 to 12:30 - **MEMS Technologies**
• What MEMS are for? What are the next killer applications?
• Physical principles used in Commercial sensors and actuators, status of technological trends.

14:00 to 17:30 - **Reliability Issues**
• State of the art of failure mechanisms, FMEA on main MEMS applications.
• State of the art of characterization techniques, Qualification plans.

This training course is provided by NOVA MEMS, a French (Toulouse) firm specialized in MEMS qualification. Please visit NOVA MEMS' website for any more information about its course program.

Session 1 Industrial needs

Thursday, May 29th 2008 - 9.30 to 12.30

DGA : Xavier Grison "Defence requirements on MEMS"
ESA : Laurent Marchand
CSA : Wanping Zheng "MEMS Technologies in Canadian Space Programs"

Coffee break

Airbus : Jean-Pierre Daniel "MEMS reliability for Aeronautics"
EADS Astrium ST : Thierry Abensur "Space Transportation needs on Reliability & Safety"
Thales Alenia Space : Claude Drevon , Olivier Vendier, Jean-Louis Cazaux & Michel Sotom "T.A.S. Needs : Global Vision / RF MEMS / Optical MEMS switches"
CNES : Gian Andrea Quadri " Optical MOEMS reliability in space environment"

Session 2 Technology Providers

Thursday, May 29th 2008 - 14.00 to 17.00

Tronics : Stephane Renard "Reliability of "high performance" accelerometers' vacuum packaging".
Freescale : Frederic Puel
Silmach : "MEMS design : reliability vs cost"

Coffee break

Infineon : Claudia Keller "Investigation of MEMS sensors by typical methods of semiconductor failure analysis"
Auxitrol & LAAS : Sebastiano Brida & JF Le Neal "Wafer level package for aerospace"

Colibrys : Jean-Michel Stauffer "Motion sensors for hostile environmental applications"

Technical Visits

Thursday, May 29th 2008

17:00-19:00 - Technical Tour, Lab visits (NOVA MEMS, LAAS, CNES).

Session 3 Reliability labs

Friday, May 30th 2008 - 8.30 to 10.30

Introduction speaker : **NOVA MEMS** : Xavier Lafontan
CEA : Didier Bloch "MEMS Failure Analysis : CEA-LETI activities introduction + Case Study "
LIRMM : Norbert Dumas "MEMS tests (embedded / in prod chain)"
LAAS : Fabio Coccetti "RF-MEMS Reliability Status and Prespectives"
XLIM : Arnaud Pothier + Pierre Blondy "Reliability Study of Dielectric Less Electrostatic Actuators: Application to MEMS Switches"

Open Session

Friday, May 30th 2008 - 10.30 to 11.30

IEF : Fabien Parrain & Jean-Paul Gilles (Institute of Fundamental Electronic)
LAAS : David Peyrou "thin films characterisation & multi physical modelisation"
Eumirel : EUMIREL cluster's projects & activities
SUSS MicroTEC
IMS : Bruno Levrier "EURELNET"

Session 4 Existing initiatives

Friday, May 30th 2008 - 11.30AM to 12.30AM

LIRMM : Laurent Latorre "ANR MIDISPPI project - packaging's environmental control (Temperature, humidity, pressure)"
MEMUNITY
EADS CCR : Bruno Foucher " EDA Research - POLYNOE Implementation of Physics Of Failure for MEMS"

Project CANEUS Reliability Pilot Project

Friday, May 30th 2008 - 13.45 to 17:00

13.45 to 14.30 - **CANEUS Framework**
14.30 to 15.00 - **MNT-MEMS Reliability Pilot Project** : previous activities, CANEUS Vision

15.00 to 16.30 - **Partner's solicitation** : Networks' development & Project investment
16:30 to 17:00 - **Summary**