DEPARTMENT OF CIVIL ENGINEERING

You are cordially invited to a seminar organized by Centre for Offshore Research and Engineering, CORE and Department of Civil Engineering, NUS on

NDT and its Value for Structural Safety

by

Prof. Dr. Michael Kröning

Advisor to Lucid Software Ltd. and Consultant with QNET Germany

Date: Monday, 1 March 2010
Time: 3.30 pm – 5.00 pm
Refreshment will be served at 3.10 pm
Venue: EA- 02- 11, Faculty of Engineering, National University of Singapore

Abstract

Nondestructive testing (NDT) is a set of techniques such as Ultrasound, Eddy Current, X-ray applied:

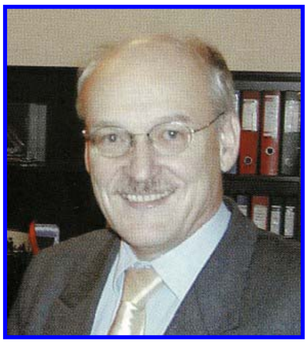
- To determine the quality and integrity of the system / components
- To monitor/ control manufacturing process
- To assess residual life of components
- To ensure safe and secure operation of infrastructure and assets

NDT as an element of structural engineering, manufacturing and maintenance contributes to the safe and reliable operation of assets. New developments in key technologies like computing, microelectronics, automation, and sensor physics have inspired the development of more advanced inspection systems and enhanced the broader use of NDT. For example advanced NDT systems would support the inspection of new high strength materials and of components with limited access. Further, new concepts in NDT such as risk informed inspections or NDT integrated asset management have become reasonably viable.

Current R&D efforts in NDT combine advanced measurement physics with latest state of robotics. This will support the objectives of NDT engineering such as compact sensor systems and front end microelectronics with full functionality. This would permit easy access and reduced number of scans. The talk will highlight case studies to illustrate how NDT can support structural safety assessments.

The talk will also cover the emerging area of NDT data integration with Enterprise Asset Management. Inspection planning can be directed to existing risks, inspection history can be traced back easily, and results can be integrated in life cycle and maintenance management.

About the speaker



Prof. Dr. Michael Kröning was born on January 6, 1944 in Weixdorf, Germany. In 1971 he graduated in Diploma in physics, Johannes Gutenberg-University, Mainz. Then in 1974, Ph.D. in the field of experimental nuclear physics, Johannes Gutenberg-University, Mainz. During that time (1972-1974) he was a Research assistant, Max-Planck-Institute für Chemie, Mainz and was promoted to Researcher (1974-1978), Max-Planck-Institut für Chemie, Mainz

In 1978-1990, he was head of various research groups in the field of quality assurance and inspection technologies Siemens AG-Kraftwerk-Union, Erlangen. He continued in 1990-2000 to become Director of the Fraunhofer Institut Zerstörungsfreie, Prüfverfahren, Saarbrücken, Professor at the University of Saarbrücken - Chair of Nondestructive Testing and Quality Assurance.

He took a sabbatical leave in 2000-2003, to hold a post of Executive Director, International Science and Technology Center, Moskow. During Oct. 2003 to Feb 2009, he was Director of the Fraunhofer Institut Zerstörungsfreie, Prüfverfahren, Saarbrücken, and Professor at the University of Saarbrücken - Chair of Nondestructive Testing and Quality Assurance.

He was a Member of the German Reactor Safety Committee (1992-1999), Member of the German Society of Nondestructive Testing, Co-opted scientific member of the advisory board of the German Society of Nondestructive Testing, Chairman of the advisory board Q-NET GmbH, and Member of the advisory board University Siegen, Centre for Sensor systems. He has been honoured by universities and institutions, including:

Honorary Professor of the Tomsk Polytechnical University
Honorary Doctorate of the St. Petersburg Railway University
Honorary Fellow of the Indian Society for Nondestructive Testing
Honorary Fellow of Indian National Academy of Engineering
Honorary Doctorate of the Kyrgyz-Russian-Slavonic University
Honorary Professor of the Isyk-Kul State University
Honorary Doctorate of the Eurasian National L.N. Gumilyov-University, Astana
Honorary Doctor of the National Academy of Science of the Kyrgyz Republic
Honorary Professor of the L.N. Gumilyov Eurasian National University , Republic of Kazakhstan
2008 NDE Lifetime Achievement Award SPIE, USA

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*****Seats are limited. Please register early. All are welcome and admission is free*****

Location Map