



Wednesday, 5 December 2007

AULA VERDE
Eni Corporate University
Via S. Salvo 1
SAN DONATO MILANESE

11:00

2007-2008 SPE Distinguished Lectures Series

**DOWNHOLE FLUID ANALYSIS,
THE KEY TO UNRAVELING THE COMPLEXITIES OF RESERVOIRS
AND THEIR CONTAINED FLUIDS**

By Oliver C. Mullins – Schlumberger

➤ **ABSTRACT**

In recent years, there has been a growing realization that improper treatment of hydrocarbon fluid complexities commonly leads to gross inefficiencies in facilities design and production strategies. A common but incorrect working model is that hydrocarbon fluids are homogeneous in contrast to the lithofacies which are correctly treated as being heterogeneous. Downhole Fluid Analysis (DFA), a new technology, is shown to reveal compositional variations thereby enabling proper modeling. A second common but incorrect working model is that pressure communication between different permeable zones implies flow communication. This model is often in gross error; pressure communication can be established on a geological time frame (10 million years) while production mandates a 10 year time frame. These technical shortcomings have made compartmentalization one of the biggest problems in Exploration / Appraisal. DFA coupled with compositional gradients are now routinely uncovering compartmentalization. In addition DFA is shown to be essential to characterize reserves in tight carbonates in development. Many field examples will be shown which prove the efficiency and applicability of this new technology towards major these production issues. Finally, the proof of proper sample handling from downhole to laboratory reports is embodied in the Chain of Custody, soon to be implemented by Schlumberger. The future of petroleum analysis – Petroleomics will be mentioned.

➤ **BIOGRAPHY**

Dr. Oliver C. Mullins, a Scientific Advisor, is the originator of Downhole Fluid Analysis, a commercial service for which he has awarded three Gold Medals, two from Schlumberger and one from the State of Connecticut. His current position, Reservoir Domain Champion for Wireline Headquarters reflects his contributions in this area. Dr. Mullins, a chemist, also leads an active research group in asphaltene and petroleum science. His work on asphaltenes has helped resolved long-standing controversies in the field. He has co-edited three books on asphaltenes, the third in press. He has published 60 articles in refereed journals, 30 in oilfield journals, and has coauthored 26 US patents. His hobbies include skiing, scuba, biking and blues saxophone.