



**“Reservoir and Fluid Characterization with Formation Testers:  
Reducing Asset Uncertainties.”**

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**Abstract:**

Formation Testers (FT) have been around for more than 50 years. Early 1990's, have seen the emergence of pumpout wireline formation testers (WFT) which modernized their applications, including better fluid sampling, permeability and anisotropy measurements and basic downhole fluid analysis. Now, the technology is advancing further in both hardware and software as we are entering a new era in formation testing. While the industry is pushed to reduce costs, compromises on reservoir and fluid characterization can have detrimental effects in new projects and emerging FT applications are well poised to provide critical answers to reduce asset uncertainties.

In this lecture, we will briefly focus on existing and emerging hardware/software on formation testing but our focus will be on applications of acquired and interpreted data for reservoir and fluid characterization. We will discuss pressure gradient analysis and implications of gradient errors for reservoir engineers. We will review the effects of OBM contamination on fluid uncertainties and the choice of inlet types on cleanup behavior. Emerging downhole fluid analysis sensors will be discussed and a new deep transient testing method will be introduced. In-situ stress testing with WFT will be outlined with drilling and reservoir engineering applications. We will discuss these points with field examples. Finally, desired features of next generation WFT will be outlined.

**Biography:**

Dr. Cosan Ayan was a Reservoir Engineering Advisor for Schlumberger Wireline Headquarters based in Paris, France, who has opted for early retirement in June 2017. Cosan had several international assignments covering Houston-USA, Indonesia-Jakarta, United Kingdom-Aberdeen, UAE-Abu Dhabi, and Egypt-Cairo. He holds BS degree from Middle East Technical University, Ankara, MS and Ph.D. degrees from Texas A&M University, College Station all in Petroleum Engineering. He is the author of more than eighty-five technical papers on Well Testing and Reservoir Engineering and was a SPE Distinguished Lecturer during 2005-2006. Cosan served as an Executive Editor for SPE REE Journal from 2007-2010 and edited SPE e-book volumes on “Getting Up-To-Speed: Formation Testing”. Cosan received the SPE Formation Evaluation Award, September 2015.