

Shining Light on Texas Tea: Terabytes from Terra Firma



John Maida

Chief Optical Scientist, Halliburton, Houston, Texas
Adjunct Professor, College of Technology, University of Houston

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Classroom and Business Building, Room 122

LECTURE ABSTRACT

The oil and gas industry is continually striving to produce more hydrocarbons and produce less waste, such as water, in order to improve production, safety, and to help protect the environment. Several sensing techniques using optical fiber, including distributed sensing, have been developed over the last three decades for all stages of well development, including production and abandonment. This presentation reviews these optical sensing technologies, with particular emphasis on new applications, challenges, and business drivers. Expected performance parameters of these new technologies are discussed, including their accuracy, resolution, stability, and operational lifetime. Environmental conditions, such as high hydrostatic pressures, high temperatures, shock, vibration, crush, and chemical exposure are also given. These optical technologies are expected to provide safe, reliable, cost-effective, and unprecedented monitoring solutions.

SPEAKER BIOSKETCH

John Maida has been with Halliburton for the past 15 years and holds the title of Chief Optical Scientist. John's primary work has been in the development and application of fiber-based communications and sensing systems including distributed temperature (DTS) and acoustic (DAS) sensing instruments, and related optical fiber cables and interconnection devices. John has over 56 United States and international patents and holds three degrees: BSc '84, Electrical & Electronics Engineering Technology; BSc '86, Electro-Optical Sciences, Magna Cum Laude; and MSc '87, Electro-Optical Sciences from the University of Houston System.

John's expertise is in the area of photonics and optical fiber sciences with over 31-years of experience in advanced systems development and scouting activities covering the petroleum, avionics, and biomedical industries. Over the past 27 years, John has been enabling engineering development teams in the fields of geophysical seismic exploration and reservoir production optimization.

John is also an adjunct lecturer at the University of Houston College of Engineering Technology and Vice Chair of the Houston-area IEEE Photonics Society. He is a member of the IEEE, OSA, SPIE, and SPE professional societies and has served on the National Photonics Initiative (NPI) Taskforce on Sensors for Energy, Environment and Education. He has served on several boards and as president of the UH Technology Alumni Association (1996-2000).

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