

**Society of Petroleum Engineers**  
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**Shale Resource Assessment & Development —  
Full Life Cycle Integrated Approach**

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*Abstract:*

A full life-cycle integrated approach for shale resource plays is an essential process to establish value creation and to ensure reserves and production growth. With this process key issues and uncertainties in shale resource development are resolved as plays evolve from concept screening; to exploration and resource assessment; to full development. The integrated approach relies upon key elements which include 1). Field Demonstrations and 2). Mechanistic Studies. The design, planning, and implementation of systematic and "scalable" Field Demonstrations are essential elements required to address strategic, development and operational issues. Mechanistic studies are utilized to understand the key production drivers. Shale gas productivity is typically much lower than conventional reservoir systems and often lower than tight gas reservoirs. The flow behavior in these systems must be understood and quantified in order to effectively characterize and predict well and reservoir performance behavior. The primary take-away from this presentation is that new processes and advances in field demonstrations and mechanistic models are key factors required for appraisal and development of global shale resources.

*Biography:*

P. K. Pande serves as Director, Reservoir Technology with Anadarko Petroleum Corporation, the world's largest independent E&P Company. His responsibilities include managing an integrated team of subsurface professionals including geologists, geophysicists and reservoir engineers in application of subsurface technologies and best practices. In his current role he has been instrumental in the appraisal and development of Anadarko shale and deepwater resources both in North America and internationally. Pande has also served as Subsurface Manager, Ourhoud Field, Algeria, the country's second largest oil-field. He has contributed to the development and reservoir management of numerous world class reservoirs including Prudhoe Bay, North America's largest oil field and Endicott, the first arctic offshore oilfield. He was actively involved in the design, planning, and implementation of the Prudhoe Bay Miscible Gas Project, the largest enhanced oil recovery project in the world. He served as Project Manager for U.S. Department of Energy's flagship project on improved recovery and reservoir characterization methods for shallow-shelf carbonate reservoirs.