



GAVIN CONFERENCES

# International Conference on Petrochemical Engineering

July 10-12, 2017 Dubai, UAE

## Ideal petrophysical and stratigraphic-structural characteristics for a hydrocarbon reservoir: the case-study of the Tertiary “Lignitifero” basin of Sulcis (south-western Sardinia, Italy)

**Stefano Columbu, Luca Giacomo Costamagna**

University of Cagliari, Italy

The 300m thick Eocene–Oligocene terrigenous Cixerri Formation marks the middle Eocene Pyrenean unconformity and frequently covers unconformably the 80 m thick Early Eocene Lignitifero Fm, a terrigenous coal-seam rich unit deposited in coastal to palustrine-deltaic environments. The deposition of the Cixerri Fm started with small alluvial fans and ultimately evolved to fluvial deposits in braided to meandering stream environments. The Cixerri Fm was deposited by a fluvial network formed by a main W-E directed trunk and a NW-SE directed minor branch that ultimately joined together. The Cixerri Fm passes unconformably upwards to the coarser braided to fan-delta deposits of the Ussana and Flumentepido Fms that indicate the transition from a quiet tectonic environment to an active tectonic phase. In the meandering upper part of the Cixerri Fm the channelized sandbodies might potentially act as sealed reservoirs for rising fluids and gases coming from the decay of the organic matter contained in the Lignitifero Fm. Thus a detailed study aimed to investigate the potentiality of the upper Cixerri Fm as an oil field is in progress. This study takes place by analyzing samples collected both from outcrops and from cores; these latter cross all the thickness of the Cixerri Fm down to the Lignitifero Fm. In this way we will determinate the stratigraphic-structural setting and the petrophysical features of the sandbodies.