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## Precisely Studies on Petrophysical Parameters and Interface Properties of Cores from Tight Oil Reservoirs

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Tight oil reservoirs have got extremely low permeability and porosity, with complex microscopic pore structures and fine pore throats, relatively large force of fluids acting on the rock surface of the reservoir, and uncertain regularities of oil & water distribution. Currently, tight oil reservoirs are mainly developed in the mode of quasi-natural energy exploitation using staged fracturing horizontal wells, where production declines rapidly, and the conventional water-flooding energy supplementation mode can be hardly effective. It is planned to carry out studies on microscopic pore structures of tight oil reservoirs using high and new technological approaches in the project to reveal fluid occurrence in full-scale pore space and percolation mechanism in micro-nano scale of tight oil reservoirs; proposed a new method for testing wettability of tight oil reservoirs, disclosing mixed wettability and a quantitative characterization of oil wet and water wet degree of tight oil reservoirs; build a relationship between NMR spectrum and fluid viscosity, establishing a mathematical model for viscosity and T2 spectra, drawing distribution of viscosity in typical tight oil reservoirs; with the adoption of surface work function and surface charge to evaluate interface properties of reservoirs, and proposed an optimized method for fracturing fluid formulation. The outcomes of this study will play an important fundamental role for the establishment of a full scale mathematical model for pores seepage flows, preferred selection of effective tight oil reservoir development modes and proposal of reasonable reservoir stimulation methods.

### References

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**Primary author:** Dr LUO, Yutian (PetroChina Research Institute of Petroleum Exploration & Development/University of Chinese Academy of Sciences)

**Co-authors:** Prof. YANG, ZhengMing (PetroChina Research Institute of Petroleum Exploration & Development); CHEN, Ting (University of Chinese Academy of Sciences)

**Presenter:** Dr LUO, Yutian (PetroChina Research Institute of Petroleum Exploration & Development/University of Chinese Academy of Sciences)

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