



FESAus February Talk

Impact of Equation of State on Gas Adsorption-based Shale Gas Evaluation

– Jamiu Ekundayo

Advanced NMR Interpretation for Shale Evaluation – Yujie Yuan

Impact of Equation of State on Gas Adsorption-based Shale Gas Evaluation

Reliable reserve estimation in unconventional shales require a detailed understanding of relationships between gas content, pore structures, chemical and mineralogical properties. Considering the complexity of these parameters, small discrepancies in measurements can induce large variations of the final result. In this study, gas content was determined from laboratory-measured high-pressure methane adsorption isotherms and compared to TOC and clay contents. Langmuir parameters varied due to differences in fluid density resulting from the use of different equations of state. The variations of estimated reserve were found to correlate with the variations of Langmuir volumes.

Jamiu Ekundayo is a PhD student in Petroleum Engineering at the Western Australian School of Mines (Curtin University). His PhD is focused on shale gas sorption hysteresis and how it affects gas production from shale gas reservoirs. Jamiu did his previous studies at the University of Lagos (Nigeria) and the Petroleum Institute (Abu Dhabi). As a reservoir engineer, he was involved in different reservoir characterization and field development projects both in Nigeria and Abu Dhabi, UAE.



DATE:
COST:

Tuesday 11th February, 2019 - 12:00 – 1:30 PM **VENUE:** Hotel IBIS- 334 Murray Street, Perth

Members \$30.00; Non Members \$40.00; Students/Retirees \$10.00

Online registration at www.fesaus.org by Friday 7th February at 11.00 am

Note:

Limited seats for unregistered attendees may be available: \$50.00 cash door charge

Advanced NMR and low-pressure gas adsorption interpretation for Shale Evaluation

Quantification of parameters such as clay bound water (CBW), effective porosity, micropore volume and specific surface area (SSA), although significant for the evaluation of hydrocarbons in shales, has not been fully investigated for industrial applications. This study explores in detail pore structures with laboratory techniques and derives new equations to relate clay mineralogy and CBW. Multiple-regression equations are then established to estimate for the first time the micropore volume and micropore SSA, which are intimately correlated with CBW.

Yujie Yuan is a PhD student in the Discipline of Petroleum Engineering, WA School of Mines: Minerals, Energy and Chemical Engineering (WASM) in Curtin University. Her PhD project focuses on the multi-scale porosity and pore structure assessment in shales. During her PhD studies, she has also worked as Teaching Assistant for Petrophysics and Reservoir Properties Lab units at Curtin University. She holds a B.sc. degree in Petroleum Engineering, China University of Petroleum (East China).

