



FESAus Monthly Technical Meeting

“A Prediction Model for Methane Adsorption Capacity in Shale Gas Reservoirs”

Jie Zou, Curtin WA School of Mines

Abstract :

Estimation of methane adsorption capacity is crucial for the characterization of shale gas reservoirs. The methane adsorption capacity in shales is measured using high-pressure methane adsorption to obtain the adsorption isotherms, which can be fitted by Langmuir model. The determined Langmuir parameters can provide the methane adsorption capacity under actual reservoir conditions. In this study, a prediction model for the methane adsorption in shales was constructed based on 66 samples from 6 basins in China and Western Australia. The model was established in four steps: a model of Langmuir volume at experimental temperature, the temperature dependence of Langmuir volume, a model of Langmuir pressure, the temperature dependence of Langmuir pressure. In the model of Langmuir volume at experimental temperature, total organic carbon (TOC) and clay content (Vsh) were considered. A positive relationship was observed between the TOC and the temperature effect on the Langmuir volume. As the Langmuir pressure is sensitive to various factors, the Langmuir pressure at experimental temperature shows no trend with the TOC, clay content and thermal maturity, but a positive trend with the Langmuir volume. The results of this study can help log analysts to quantify adsorbed gas from well-log data since TOC and Vsh, which are the measure inputs of the introduced models, can be obtained from well-log data as well.

About the Presenter:

Jie Zou is a PhD student of Curtin's Petroleum Engineering. His research topic is about assessment of gas adsorption capacity in shale formations. He received his bachelor degree of petroleum engineering in China university of petroleum (East China) and master degree of petroleum engineering in China University of Petroleum (Beijing).



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

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

Online registration at www.fesaus.org by Friday 8th February 3PM



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