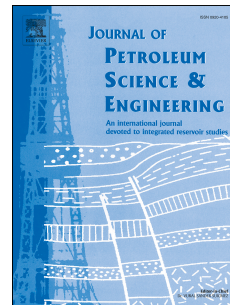


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Nanoscale geomechanical properties of Western Australian coal

Hongyan Yu^{1,2*}, Yihuai Zhang^{3*}, Maxim Lebedev⁴, Tongcheng Han⁵, Michael Verrall⁶, Zhenliang Wang¹, Emad A Al-Khdheawi³, Ahmed Al-Yaseri³, Stefan Iglauer³

¹*State Key Laboratory of Continental Dynamics; Department of Geology, Northwest University, Xi'an, 710069, China*

²*Research Institute of BGP, CNPC, Zhuozhou 072750, China*

³*Department of Petroleum Engineering, Curtin University, 26 Dick Perry Avenue, 6151 Kensington, Australia*

⁴*Department of Exploration Geophysics, Curtin University, 26 Dick Perry Avenue, 6151 Kensington, Australia*

⁵*China University of Petroleum (East China), School of Geosciences, Qingdao 266580, China*

⁶*Earth Sciences and Resource Engineering, CSIRO, 26 Dick Perry Avenue, 6151 Kensington, Australia*

*Corresponding author: zyzn91991@gmail.com (Yihuai Zhang);
amelia-yu@hotmail.com (Hongyan Yu)

Abstract

Geomechanical properties are of great importance in coal mining exploration, (enhanced) coal bed methane production and carbon geosequestration in deep unmineable coal seams. However, coal highly heterogeneous rocks, and conventional experimental methods (e.g. acoustic, seismic or unconfined compressive strength tests) only measure the cm-m scale bulk properties. Thus, we measured the geomechanical properties at nanoscale of Western Australian Collie coal. We mapped the nanoscale mechanical heterogeneity and correlated it with the sample's morphology (measured

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