

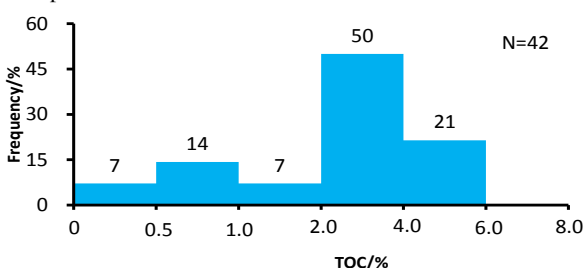
## Good exploration potential for shale gas in the central Guangxi Depression, SW China

X HE\*, A SHEN, S XIONG AND Y HU

<sup>1</sup> PetroChina Hangzhou Research Institute of Geology, Hangzhou 310023, China  
(\*correspondence: hexy\_hz@petrochina.com.cn)

<sup>2</sup> Key Laboratory of carbonate reservoirs, CNPC, Hangzhou 310023, China

Lower-Middle Devonian and Lower Carboniferous marine shales distribute widely in the central Guangxi depression, SW China [1], and commonly have a thickness of more than 30m. The shales have high TOC values, commonly more than 2.0% (Figure 1); the organic matter is mainly Type II; the vitrinite reflectance (Ro) values mainly range from 1.0%~3.0%, most benefit for shale gas exploration.



**Figure 1:** TOC values distribution of the middle Devonian shales in the central Guangxi Depression, SW China

The shales are composed of quartz, clay minerals, and poor in carbonates, and have the total porosity between 0.79% and 27.3%. The pores are mainly 1 to 100nm in size and dominated by mesopore (2-50nm). The Langmuir volumes of the shales range from 1.7-3.81m<sup>3</sup>/t, which is similar to those of the lower Silurian Longmaxi Formation shales in China[2] and the Marcellus, Fayetteville shales in USA[3]. Gas adsorption amounts show positive relationship to TOC but not to clay mineral content, indicating that organic pores may be the main reservoir space for adsorbed gas. Thus, we conclude that the shales have good hydrocarbon-generation conditions, reservoir conditions and gas adsorption capacities, and may have good potential for shale gas exploration.

[1] He et al. (2011) *Acta Petrolei Sinica* 32, 273-279. [2] Sun et al. (2014) *Special Oil and Gas Reservoirs* 21, 63-66. [3] Chalmers et al. (2012) *AAPG bulletin* 96,1099-1119.