

SEG 2022 Conference: Minerals For Our Future

A Study of the Diatomite Deposit in Shengzhou of Eastern Zhejiang Province, China

Xu Jia, Xiaobin Wu, Baojin Zhao, Chao Zhang
Southwest Petroleum University, Chengdu, China

The Shengzhou diatomite deposit is one of the large ones in China, which occurs in the Shengzhou-Xinchang volcanic basin in Zhejiang Province. It was formed in the Neogene. We conducted scanning electron microscopy (SEM), X-ray Diffraction (XRD) and geochemical studies on diatomite samples. Through SEM, the predominant species of diatoms are *melosira granulata*, *cyclotella shengxianensis* *huang*, and *navicula* while XRD analysis showed that the mineral components of the diatomite include predominante quartz and clays with minor amounts of feldspar, carbonates and pyrite. The clay minerals are mainly composed of illite, kaolinite, and illite/smectite mixture. Geochemical results showed that the high content of SiO₂ ranges from 59% to 70%, which was mainly related to the accumulation of diatoms. Trace metals such as Mo, U, V, Co, Ni, Cu, and Zn in the diatomite are slightly higher than the abundance values of the upper crust. There are significant layers of basaltic lava and other volcanic rocks interbedded with diatomite horizons in the area so that we believe formation of the diatomite was related to the eruption of the basaltic lava series which is an indicator of exploration for the deposit in the area and similar environment.