

## **Crystallization Temperature, Scale and Contribution to Source Rocks of Basic Intrusive Rocks in the Eastern Depression of Liaohe Basin**

YAN ZHANG<sup>1</sup>, YOUFENG GAO<sup>2</sup>, WEIHUA BIAN<sup>1</sup>,  
YULONG HUANG<sup>1</sup> AND HUAFENG TANG<sup>1</sup>

<sup>1</sup>College of Earth Sciences, Jilin University, China,  
yan\_zhang@jlu.edu.cn

<sup>2</sup>Research Center of Palaeontology & Stratigraphy, Jilin University, China

Basic intrusive rocks are found widely in the eastern depression of Liaohe Basin. According to core of wells, the main lithology in the region is diabase. They intruded into source rocks and accelerated source rocks maturity by their carrying heat.

The main factor of influence organic maturity is intrusive rocks temperature when it intruded into sedimentary strata. And the crystallization temperature of magmatic intrusion can be regarded as the lower limit temperature of magma intrusion. The crystallization temperature can calculate by cation numbers of whole rocks and plagioclase phenocryst numbers. The cation number can be achieved by major elements analysis and calculation. The plagioclase phenocryst numbers can get from electron probe microanalysis. Samples are chosen to analyze chemical composition and calculate the crystallization temperature range.

On the other hand, the size and shape of magmatic intrusion will directly determine the baking duration and baking area. Combining observation of core and microscope with seismic profiles, diabase was found in the first and third member of Shahejie formation in the eastern depression of Liaohe Basin. Thickness of diabase is about 50-240m and maximum intrusion distance is about 1.3-5.6km.

Study on temperature and scale of intrusions in the eastern depression of Liaohe Basin help us to learn more about intrusions and get some information about intrusion effect on organic matter.

Acknowledgements: This work was supported by NSFC research fund (Grant No: 41202085).