THE STUDY ON THE ORIGIN OF CHARNOCKITE AND EVOLUTION OF EARLY PRECAMBRICAN CRUST, IN YISHUI AREA, SHANDONG PROVINCES[1]

Su Shangguo Zhou Xunruo Gu Deling Hu ling Department of Geology, China University of Geosciences, Beijing, 100083. E-mail: susg@cugb.edu.cn

Charnockite and granulite in the Yishui area, Shandong province are situated in the middle part of Tancheng-Lujiang Fault zone, Eastern China. There are three kinds of charnockites: enderbite, garnet-enderbite and hypersthene-trondhjemite. Charnockites are usually massive or slightly gneiss structures and granoblastic texture. There are two kinds of minerals in charnockite. One is relic mineral, formed in granulite facies stage, such as garnet, hypersthene and clinopyroxene etc; another is crystalline mineral, formed by melting crystallizing, such as plagioclase and k-feldspare. Relic minerals are metasomasised by epigenetic melting, their shape is usually irregular, ragged, and they often distribute along the space among mineral crystals. Crystalline minerals are usually euhedral-subhedral crystals. Through the study of petrology, mineralogy and geochemistry of charnokite, we conclude that Charnockite is formed by anatexis of supercrust rocks. It infer from the characteristics of Pb, O isotope, fluid inclusions and anticlockwise P-T-t paths of Charnockite that the origin of the charnockite and granulite is related with the upwelling of a mantle plume (hot spot) in Yishui area, Shangdong Provinces at around 2500 ma.