

**PETROLOGY OF ECLOGITES FROM NORTH OF SHAHREKORD,
SANANDAJ – SIRJAN ZONE, IRAN**

DAVOUDIAN DEHKORDI, A. R. ¹, DACHS, E. ², GENSER, J. ³,
KHALILI, M. ⁴, SHANBANIAN BOROUJENI, N. ⁴

¹ Department of natural resources, Shahrekord University, Iran

² Institute of Mineralogy, Salzburg University, Austria

³ Institute of Geology and Paleontology, Salzburg University, Austria

⁴ Department of Geology, Esfahan University, Iran

e-mail: a_davoudian@yahoo.com

Metabasic rocks from north of Shahrekord which is a part of structural zone of Sanandaj-Sirjan are found in a ductile shear zone. They are including eclogites, garnet-amphibolites and amphibolites. Eclogites are either as bands or lens with assemblage of amphibolite and paragneiss.

The shear zone is an oblique reverse shear zone with northwest–southeast trend parallel to Main thrust Zagros and it is responsible for juxtaposition of eclogites.

Metamorphic P-T conditions of eclogites were evaluated based on the application garnet – clinopyroxene geothermometer and garnet – clinopyroxene – phengite geobarometer e.g. programs PET (DACHS, 1998). Peak P-T values in eclogites are around 600 °C at 17 kbar.

Main phases at high pressure metamorphism are omphacite + garnet + sodic-calcic amphiboles (barroisite, magnesiokatophorite and magnesiotaramite) + phengite + rutile + zoisite + quartz ± dolomite. Calcic amphiboles (hornblende, tschermakite and pargasite) + plagioclase are secondary phases on retrograde path with amphibolite – facies metamorphism.

Garnets display mainly an almandine-pyrope composition, which fits with the C type eclogites (COLEMAN et al., 1965) classification. Distinct compositional zoning is preserved in fresh garnets which are formed during eclogite facies. The compositional or growth zoning in eclogite rocks shows clockwise P-T-t path as at first P and T metamorphism increases to reach to peak of high pressure metamorphism and then P decreases while T increases, so that after decompression and uplift T has increased.

Geochemical studies based on major and trace elements show that eclogites originated from oceanic floor basalt protolith.

References

- DACHS, E. (1998): PET Petrological elementary tools for Mathematica. *Computers & Geoscience*, 24, 219-235.
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