Origin of scapolite in plutonic rocks of Panj – Kuh (south-east of Damghan)

D. Esmaeili, M. Sheibi, A. Kananian

Department of geology, Faculty of Science, University of Tehran, Iran.
E-mail: esmaili@khayam.ut.ac.ir

(Received: 10/12/2003, received in revised form: 27/07/2004)

Abstract: The mineralogy and origin of the scapolite crystals of the Panj-Kuh area (S-E Damghan) has been investigated. Based on textural and field observations, two types of scapolite have been identified. Type 1 scapolite consists of fine to coarse grain crystals which are mainly replaced for plagioclase in the pluton body. The type 2 as veinlet and vein ranging in thickness from few millimeters inside the body to about few hundred meters in the margin of the body that present close to the iron ore deposit. It seems that the formation of the first type of scapolites is related to the circulation of NaCl rich fluid around of the intrusive body, and the second type has directly been precipitated from the hydrothermal fluids. The extensive abundance of scapolite-albite zone in intrusive rocks and specially between body and a volcano-sedimentary sequence suggest that the formation of scapolite was accompanied by an alkali metasomatism which has been derived from the evaporate sediments of that sequences.

Keywords: mineralogy, scapolite, Panj – Kuh, Damghan, alkali metasomatism