

UNDERSTANDING U-MINERALIZATION AT BICHUN-NAYAGAON, JAIPUR DISTRICT, RAJASTHAN - A PETROLOGICAL APPROACH

Asoori Latha, P.S. Parihar, K. Shiv Kumar and S. Nayak

Atomic Minerals Directorate for Exploration and Research, Begumpet, Hyderabad

E-mail Address: alatha.amd@gov.in

Abstract

Metasomatite type of uranium mineralization occurs in India along the albitite zone extending from parts of Rajasthan to southern Haryana. Recent Exploration by AMD has established uranium mineralization in Banded Gneissic Complex (BGC) terrain around Bichun-Nayagaon area of Jaipur District, Rajasthan. The host rocks of U-mineralization are characterized as variably albitized granite gneisses and albitites. Albite is the predominant mineral in all these rocks, plagioclase and quartz are the other felsic constituents, with minor K-feldspar. Biotite, hornblende, zircon, apatite and allanite are the accessory minerals. Titano-magnetite, hematite, pyrite, chalcopyrite, bornite, galena, goethite and anatase are the opaque phases. Radioactivity is attributed to davidite, uraninite, U-Ti-Fe complexes, metamict REE mineral, radio-element bearing sphene, adsorbed/ labile uranium among various phases. The nature of uranium mineralization and its mode of occurrence suggests that the mineralization has a two phase development, the initial phase of migmatization followed by later phase of albitization which cumulatively concentrated uranium in these litho-units in this area.

Keywords: Albitite, Uranium mineralization, Bichun-Nayagaon, Rajasthan.