

Jerzy NIEWODNICZAŃSKI, Nguyen Dinh CHAU

Stanislaw Staszic AGH University of Science and Technology

niewodniczanski@gmail.com; Nguyen.Chau@fis.agh.edu.pl

Natural radionuclides in applied geophysics – a review

Abstract

Traces of naturally occurring radioactive materials (NORM) determined in rocks and waters not only indicate deposits of radioactive minerals, but also may be applied as essential tools in various types of geological survey. Anomaly of radioactivity may inform on geological structures, help to estimate ore deposits, localize oil and gas fields or even determine usefulness of materials mined for construction purposes. Radiometric analysis of ground and surface waters enable us to resolve some hydrogeological questions connected with natural water systems and to study young sediments in water reservoirs. Such investigations and analyses of soil and water may decide on future availability of particular environment for human settlements and suitability of agricultural products and drinking water for nutrition purposes. To prove that measurements of natural radioactivity in field and laboratory studies should be treated as relatively cheap, simple and valuable geophysical method in both regional and engineering geology the authors demonstrate and discuss the mentioned above possibilities based on their own investigations as well as using data from some other most actual sources.