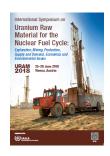
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INVESTIGATION OF U-238 AND Th-232 IN FINGERNAILS, TOTAL BLOOD AND DRINKING WATER AMONG WELL USERS IN KADUGLI TOWN, A HIGH NATURAL BACKGROUND RADIATION AREA IN SUDAN

Wednesday, 27 June 2018 17:00 (1 hour)

Sudan Atomic Energy Commission (SAEC) has an ongoing national programme for monitoring radioactivity in Sudanese environment to establish a baseline data as a useful reference for radiation protection in Sudan. Nuba mountains, south-west of Sudan has been detected as a region with the highest radioactivity from natural background. This elevated natural radiation is attributed to the high concentration of 238U, and 232Th series, and 40K in the geological formation. Mining activities (uranium and gold) might take place soon, which will increase radiation hazard to the public. Our aim is to investigate the distribution of 238U and 232Th in fingernails and whole blood in relation to its intake via drinking water by Nuba people who live in that area. Water, fingernails, and blood samples were analysed for 238U and 232Th using ICP-MS. Results of some water supplies revealed uranium concentrations higher than the WHO guidance level (15 µg/L) for drinking water. Analysis of body tissues showed that both 238U and 232Th were better reflected in fingernails than in blood, and thus may serve as biomonitors for uranium and thorium intake in that area. The generated data is a valuable baseline for the decision makers before mining activities begin.

Country or International Organization

Sudan

Primary author: Dr OSMAN, Alfatih (Sudan Atomic Energy Commission (SAEC), Al-Gamaa Str.2, 11111 Khartoum, Sudan)

Co-authors: Prof. VOGT, Carla (Leibniz Universität Hannover, Institute of Inorganic Chemistry, Callinstraße 1, 30167 Hannover, Germany); Ms GOTTSCHALK, Christine (Leibniz Universität Hannover, Institute of Inorganic Chemistry, Callinstraße 1, 30167 Hannover, Germany); Mr SALIH, Ekrami (Sudan Atomic Energy Commission (SAEC), Al-Gamaa Street, 11111 Khartoum, Sudan); Mr ABOWSLAMA, Elshafeea (Sudan Atomic Energy Commission (SAEC), Al-Gamaa Street, 11111 Khartoum, Sudan); Ms BODE, Julia (Leibniz Universität Hannover, Institute of Inorganic Chemistry, Callinstraße 1, 30167 Hannover, Germany); Mr ALI, Mossap (Sudan Atomic Energy Commission (SAEC), Al-Gamaa Street, 11111 Khartoum, Sudan)

Presenter: Dr OSMAN, Alfatih (Sudan Atomic Energy Commission (SAEC), Al-Gamaa Str.2, 11111 Khartoum, Sudan)

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