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Dose rate measurement in different granite samples of Bangalore metropolitan, India

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The network of dose estimation from different from various scientific agencies in India clearly reflects the prime importance of monitoring of radioactive materials and exposure to the gamma radiation. The study envisages the environmental protection and early detection of catastrophe. From the natural risk point of view, it is necessary to know the dose limits of public exposure and to monitor the natural environmental radiations at ground, in air and water for the estimation of the exposure from the natural radiation sources. Reported values for effective gamma dose rate for the Bangalore environment varied in the range 90-260 nSvh-1 with mean 163.01 nSvh-1. As the observed dose rates are at alarming level, an attempt has been made to measure the effective dose rates in dwellings due to the usage of granite as building material; using GM-tube based RDS-31 RADOS to study the health effects on human beings. Several granite samples viz., Granite (white), Granite porphyry, Syenite porphyry, Granite pink polished, Diorite porphyry, Felsites porphyry, Granite coarse grained, Granite (green), Felsites green compact, Gneiss, Felsites, Bronzite peridotite and Dolerite coarse grained that were used as building construction materials in and around Bangalore Metropolitan, India. The study was made for three years and the measured dose rates in the analyzed granite samples varied from 152.8±7.6 to 225.8±11.2 nSvh-1. Higher dose rates were observed in Granite (white) and lower in Dolerite coarse grained flooring dwellings irrespective of seasons, months of the calendar year, and different features of dwellings such as volume, floorings type and wall type. The results are discussed in detail.

Biography

Sathish L A obtained his Ph.D. degree in Physics during 2004 from University of Mysore, Mysore, Karnataka. He has over 19 - years of teaching and 16 - years of research experience. He is working in the field of Indoor radon for more than one and a half decade. He carried out several sponsored major research projects and published 42 - research articles in journals of good repute and presented 98 research articles at various national and international conferences. He authored for several text books in Physics. He visited Columbus, USA and University of Mauritius, Mauritius and delivered invited talks. He is serving as Joint Secretary, Nuclear Track Society of India and potential reviewer for several international journals.

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