

# **Abstract**

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## **Radiological Characterization of Beach Sediments along the Alexandria-Rosetta Coasts of Egypt**

In the present study, fifty two sediment samples were collected from fourteen sites along the area extended from West of Alexandria (El-MAX) to the eastern side of the Rosetta promontory (the terminal of the Nile River with the Mediterranean Sea). The collected samples were analyzed for radioactivity contents.  $^{226}\text{Ra}$ ,  $^{228}\text{Ra}$ ,  $^{40}\text{K}$  and  $^{137}\text{Cs}$  were detected. The distribution of radionuclides activity and mass concentrations of Th and U displayed specific pattern that reflects the mineralogical formations and beach stability. Radiological hazards were investigated by calculating the radiological parameters: the radium equivalent, the radiation hazard index, and the annual effective dose. It was observed that the levels of radiological parameter are higher in eastern locations than in western ones. In addition, the western side displayed radiological parameters higher than the recommended world-wide values.