

**NATURAL AND ARTIFICIAL NUCLIDES IN SALESÓPOLIS RESERVOIR  
BY GAMMA SPECTROMETRY**

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Natural radioactivity is ubiquitous in the environment mainly due to the presence of the nuclides from the uranium and thorium series and K-40 in soil, water and sediments. Although in the South Hemisphere nuclear tests have been fewer in number than that in the North, artificial radionuclides can also be found spread at ground level. Salesópolis is located in the Metropolitan Region of São Paulo city (SPMR). The Usina Parque Rio Tietê (Salesópolis) reservoir belong to the Alto do Tietê system for the capture, storage and treatment of water for the São Paulo Metropolitan Region (SPMR). Therefore, the quality of the water, as well as, of sediments of this dam is of great importance. In this study, the activity concentrations of the natural uranium and thorium nuclides series, K-40 and the artificial Cs-137 were determined in a sediment core (T1B) with 42cm depth and sliced each 3 cm totalizing 14 samples, collected in the middle of the Salesópolis dam. Samples were sealed and wait 30 days for the radioactive equilibrium to be reached. The activity concentrations were measured by gamma spectrometry. Samples were counted and saved at regular intervals at a maximum of 160 000 seconds. The gross area were calculated for each peak and plotted against time and the counting rate was obtained by the sloop of the curve. The background and reference materials were treated in the same way. Results showed that  $^{228}\text{Th}$  varied from 44 to 150  $\text{Bq kg}^{-1}$ ;  $^{228}\text{Ra}$ , from 49 to 149  $\text{Bq kg}^{-1}$ ;  $^{226}\text{Ra}$ , from 26 to 88  $\text{Bq kg}^{-1}$ ;  $^{210}\text{Pb}$ , from 93 to 247  $\text{Bq kg}^{-1}$ ;  $^{40}\text{K}$ , from 127 to 852  $\text{Bq kg}^{-1}$  and  $^{137}\text{Cs}$  varied from 0.2 to 6.7  $\text{Bq kg}^{-1}$

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**INFLUENCE OF PYROLYTIC TEMPERATURE ON URANIUM  
ADSORPTION CAPABILITY BY BIOCHAR DERIVED FROM MACAUBA  
COCONUT RESIDUE**

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Biochar (BC) is a carbon-rich product obtained when biomass is thermally decomposed at relatively low temperatures (under 700°C) and limited supply of oxygen in a process called pyrolysis. The conversion of biomass into BC can not only result in renewable energy source of synthetic gas and bio-oil, but also decrease the content of CO<sub>2</sub> in the atmosphere, as well as improving soil fertility. Because of its porous