Thorium and Uranium series in Nuclear Emulsion

Since, the time for pouring and development of nuclear emulsion plates took a year for E373 experiment, the five alpha decays from ^{228}Th were observed in the decay chain of thorium series in both sides of emulsion plates. In nuclear emulsion, a member of an alpha-active series as several tracks (Range = 20μm~ 50μm) may be found emerging from a common point. This event can occur if the successive nuclides found are of short life. Five alpha tracks are emitted from ^{228}Th, ^{224}Ra, ^{220}Rn, ^{216}Po and ^{212}Po nuclides. Some sample of thorium decay series and their schematic drawing are shown in Fig.3. On the other hand, a 4-prong star of alpha decays (from ^{226}Ra, ^{222}Rn, ^{218}Po and ^{214}Po) can be observed from the decay chain of uranium series. Samples of Uranium series in nuclear emulsion are presented in Fig.4.

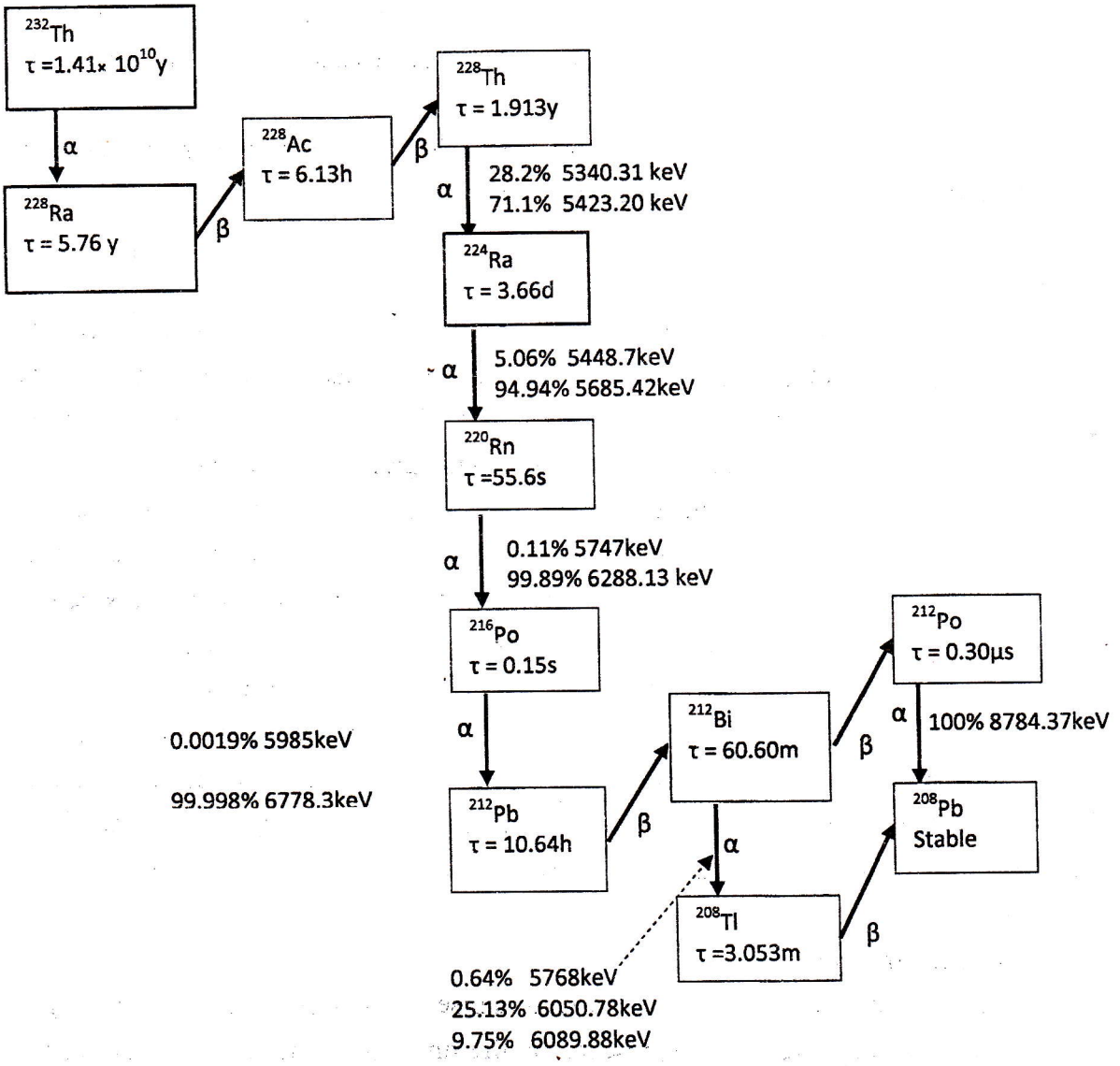

Fig. 1. Decay chain of Thorium series