^{218}Rn

Studier and Hyde announced the discovery of ^{218}Rn in the 1948 paper "A new radioactive series - the protactinium series" (1948St42). Thorium metal targets were bombarded with 19 MeV deuterons and a 38 MeV ^{4}He beam from the Berkeley 60-inch cyclotron forming ^{230}Pa in (d,4n) and α,p5n) reactions. ^{218}Rn was populated by subsequent α decay after the initial β^- decay of ^{230}Pa to ^{230}U. Alpha-decay spectra were measured following chemical separation. "[The figure] shows the frequency distribution of the observed time intervals after correction for random events. The total number of observed coincidence periods equal to or less than a given time interval is plotted against the time interval. The integral curve so obtained is exponential within the errors of the experiment and represents the decay of Em^{218}. The mean interval is 0.027 sec. corresponding to a half-life of 0.019 sec."

Adapted from reference (2013Fr09)

1948St42 M. H. Studier and E. K. Hyde, Phys. Rev. **74**, 591 (1948).
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