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Tape station for beta decay measurement

The tape station system is used for collecting and counting of “mostly” short-lived radioactive nuclei and these kinds of systems are used at an on-line facility. Such devices allow measuring radioactive particle even if they cannot be seen by other instruments. A flexible tape transport system may be used to catch recoiling nuclei after they have been mass identified by high-resolution mass spectrometer.

Depending on the half-life of the element of interest, where the detection point can be same as the implantation point or measuring at the different position, a tape has to be moved to a low background area where it will be observed by and detectors. After counting for a while, the tape is moved again to make sure that activity from the complete decay chain to stability is not observed.

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