

Mineral separation for apatite and zircon fission-track analyses

Mineral separates are produced using standard procedures of crushing, sieving, and magnetic and density separation. If necessary, apatite and zircon separates are further cleaned by hand under a microscope.



Rock crushing and sieving facilities: Press, jaw crusher, vibrating unit for up to seven sieves (left to right).



Left: Shaking water table for density separation. Right: Magnetic separation.



The density separation is carried out in two steps. First sodium polytungstate is used to separate minerals heavier and lighter than $\sim 2.8 \text{ g/cm}^3$ (picture). Then, diiodomethane with a density of 3.32 g/cm^3 is used to separate apatites (3.2 g/cm^3) and zircons (4.7 g/cm^3).