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# Separation of Sub-Micron Particles from Soils and Sediments without Mechanical Disturbance

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**Abstract:** A method is described for the separation of the finest particles from soils and sediments without mechanical disturbance. Particles are separated through the induction of osmotic stress. Generally, samples are treated with a concentrated sodium salt solution and then exposed to water by diffusion. Naturally sodic samples are simply exposed to water. Solid samples and the swollen and dispersed material they produce are confined by dialysis tubing. Examples show that the method gives a size gradient of particles in a vertical column of suspension. The compositions of particles can vary with size. The method can be used to show the effects on separated particles of ions other than Na<sup>+</sup> and also of other physicochemical treatments of soils and sediments. It is inexpensive and requires little labor.

**Key Words:** Clays • Dialysis • Dispersion • Mobility • Particles • Sediments • Separation • Size • Soils • Submicron • Swelling

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