

## Some factors acting on dispersion degree of BaSO<sub>4</sub> suspension

*N. Takaishvili, G. Supatashvili*

E-mail: [nino.takaishvili@tsu.ge](mailto:nino.takaishvili@tsu.ge)

Department of chemistry, Chair of physical and analytical chemistry,

Iv. Javakhishvili Tbilisi State University, 3, I. Chavchavadze ave., Tbilisi

### Annotation

When determining sulfates in natural objects (atmospheric precipitation, natural waters, rocks, soils, solid fuels etc.) by turbidimetric method we have to bear in mind the factors acting on dispersion degree and optical density of BaSO<sub>4</sub> suspension. With this end we have studied effect of pH, external ions, organic solvents, surface active agents etc.

Optical density of BaSO<sub>4</sub> suspension obtained from simulated solutions and natural waters is stable within the range of pH = 2.5-4.5.

Effect of cations of different nature on optical density of BaSO<sub>4</sub> suspension is defined. If ionic strength of solution > 0,01, then in order to get precise and iterative results the buffering of analysis samples is necessary.

Using optical microscope and sedimentation method is studied the effect of nature and concentration of organic solutions (methanol, ethanol, isopropanol, butanol, ethylene glycol, acetone) on the process of precipitation formation and optical density of BaSO<sub>4</sub> suspension. It is established that increase in ethanol concentration to some extent reduces optical density of suspension, increases dispersivity of precipitation, mono-dispersivity degree and reduces sedimentation rate.

It is established that in the presence of surface active agents takes place increase of age resistance and optical density of BaSO<sub>4</sub> suspension. With the help of surface active agents containing precipitating reagents is possible to reliably determinate ultra-microquantity of sulfates (5-10 mkg).