Features of geochemistry and mineralogy of the modern river sedimentogenesis

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The river system transports huge masses of minerals from the continents in the sea basins. In the modern era river hydrodynamics, chemical and mineral composition of sediments has changed substantially.

The authors examined more than 100 samples of alluvium in the major industrial regions of Ukraine. Purpose of work - determine the mechanism of interaction of natural and anthropogenic factors in the formation of precipitation. Used chemical, spectral and mineralogical analysis, electron microscopy, microprobe analysis, new methods of separation of natural and technogenic ores.

Established a joint accumulation of heavy elements of natural and industrial origin As a result of the separation of sediment produced in the laboratory ore concentrate. A feature of modern river sediments is mobilization of trace chemical elements and extensive development of authigenic minerals. Euhedral crystals, brushes, crusts, concretions and spherulites of the microscopic dimensions are typical for them. Authigenic minerals are represented by carbonates, sulfides, oxides and silicates. Hexahedrons, octahedrons and dodecahedrons of authigenic pyrite formed in the basal horizons of alluvium. There they accompany the particles of gold and may be used as indicators for his search.

[1] Chugunov & Ivanchenko (2014), *Patent of Ukraine*. Bul. 7, 105092.