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## SOME DISCREPANCIES BETWEEN A STANDARD PRACTICE OF CUMULATED HEALTH RISKS ASSESSMENT AND THE BASED-ON-EXPERIMENT THEORY OF METAL NANOPARTICLES COMBINED TOXICITY

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Assessment of cumulative health risks associated with the combined effects of two or more metal oxide nanoparticles on the organism of workers widely observed in several industries (e.g. metallurgy, arc-welding, laser processing of metals) should be theoretically and experimentally based on the toxicology of mixtures. Meanwhile there is no full match between the said assessment and this scientific basis, some of the contradictions between them being fundamental. This state of things is caused not only by simplifications characteristic of the generally recognized risk assessment methodology but also by the extreme complexity and some intrinsic inconsistency of the theory of combined toxicity, the most essential issues of which are considered by us on the basis of literary and, mostly, our own data. In particular, we studied by acute intratracheal and subchronic intraperitoneal experiments on rats and by the mathematical modeling of general patterns and some specific peculiarities of (NiO+Mn<sub>3</sub>O<sub>4</sub>), (CuO+ ZnO), (CuO+ PbO), (ZnO+PbO), (CuO+ZnO+PbO), (TiO<sub>2</sub>+Al<sub>2</sub>O<sub>3</sub>), (TiO<sub>2</sub>+SiO<sub>2</sub>), (Al<sub>2</sub>O<sub>3</sub> + SiO<sub>2</sub>), and (TiO<sub>2</sub>+Al<sub>2</sub>O<sub>3</sub>+SiO<sub>2</sub>) nanoparticle combined action. Feasible approaches to solving practically important problems associated with the above-mentioned discrepancies are proposed.

### Biography

Minigalieva graduated from The Urals State Pedagogical University (Department of Biology) in 2003. Since then she has been working as a researcher in the Ekaterinburg Medical Research Center for Prophylaxis and Health Protection in Industrial Workers. Her present position is Head of the department at Industrial Toxicology Lab. She authored or co-authored about 70 scientific papers, included 25 in peer-reviewed international journals, and presented her work to many scientific meetings, both national and international.

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