

The 5th International Conference on Natural and Anthropogenic Aerosols

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The 5th International Conference on Natural and Anthropogenic Aerosols was held on May 22–26, 2006, in St. Petersburg. The conference was organized by St. Petersburg State University; Vavilov State Optical Institute (St. Petersburg); Institute of Atmospheric Optics, Siberian Division, Russian Academy of Sciences (Tomsk); St. Petersburg State University of Aviation and Space Instrument Making; Obukhov Institute of Atmospheric Physics, Russian Academy of Sciences (Moscow); Karpov Research Institute of Physical Chemistry (Moscow); Voeikov Geophysical Observatory (St. Petersburg); Mexico City National Autonomous University (Mexico); and Institute of Physics, Belarussian Academy of Sciences. The Conference was supported by the Russian Foundation for Basic Research. About 200 specialists from research institutes of the Russian Academy of Sciences and 12 universities of Russian cities participated in the conference. Scientists from the United States, Germany, Mexico, Ukraine, Belarus, and Kazakhstan participated in the Conference. In all, 112 communications were presented in the Conference.

The subject matter of the conference covered the most urgent problems of physics, chemistry, and technology of aerosols of natural and technogenic origin. Main fields of research considered in the Conference were physical chemistry of aerosols, nanotechnology, the physics of fractals, and the chemical composition and structure of atmospheric aerosols. In these fields, 39 communications were delivered. According to their subject matter, these communications may be classified in the categories of (1) nucleation, homogeneous and heterogeneous first-order phase transitions under various external effects, and the kinetics of complex multiphase systems; (2) the study of photochemical and heterogeneous reactions giving rise to the formation of aerosol substances in atmosphere and the interrelation between the concentrations of foreign gases and aerosols; (3) physical processes involving fractal aerosols; (4) electrical phenomena in aerosol and cloud systems; and (5) the experimental studies of the element composition of regional aerosols and characterization of their sources.

Among the communications dealing with the kinetics of condensation processes, a special attention was attracted to the report presented by V.A. Zagainov, A.A. Lushnikov, M. Bakhtyreva, A. Lutsenko, and A.K. Maslov (Moscow), where a mathematical model was proposed for periodic processes in a finite condensing aerodisperse system. V.B. Kurasov (St. Petersburg) discussed the complex problems of the nonstationary kinetics of nucleation under rapidly increasing external effects. The thermodynamics of the initial stage of moistening soluble condensation nuclei in a subsaturated vapor was considered in the report presented by I.V. Shabaev and A.K. Shchekin (St. Petersburg). Sh.Kh. Zarirov, R.S. Galeev (both Kazan), and V. Hollander (Germany) developed a theory for the sedimentation of growing aerosol particles in a cylinder under the conditions of nonstationary thermal convection. The results of continuous monitoring of nanoparticles during the photochemical formation of aerosols in atmosphere were reported by M.Yu. Arshinov, B.D. Belan, G.A. Ivlev, and D.V. Simonenkov (Tomsk). Yu.I. Obvintsev, V.A. Kaminskii, and V.M. Minashkin (Moscow) presented the results of experimental and theoretical simulation of droplet evaporation in an atmosphere containing chemically active impurities. The work performed by V.P. Chelibanov, S.A. Kazakov, S.G. Lebedev, and A.A. Turenko (St. Petersburg) on the simulation of chemiluminescence in heterogeneous ozone sensors attracted the considerable attention due to detailed study and possible practical application of the results obtained. Of great interest was the communication delivered by M.Yu. Yablokov (Moscow) demonstrating, how much a fractal-like structure changes the physicochemical properties of a material, in particular, zinc oxide. N.O. Plaude, E.A. Stulov, M.V. Vychuzhanina, and H.A. Monakhova (TsAO, Dolgoprudnyi) presented the results of studying parameters of aerosol contamination of the suburban Moscow Region in the abnormal season of 2005.

At the final meeting, it was decided to hold the 6th International Conference “Natural and Anthropogenic Aerosols” in September, 2007.

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