

Alexei Lushnikov

Education:

Moscow Engineering Physics Institute, Faculty of Theoretical and Experimental Physics, specialty “Theoretical Nuclear Physics” (1956-1962).

Rank:

Professor, specialty “Physical Chemistry”, 1983. Three of his 9 students defended their theses.

Degrees:

- Ph.D. in physics and mathematics, “The Theory of the Simplest Photonuclear Reactions”, Moscow Engineering Physics Institute, 1966;
- D.Sc. in physics and mathematics, “Evolution of Coagulation Systems”, the L. Y. Karpov Research Institute of Physical Chemistry, 1979 г.

State awards:

- Medal “Veteran of Labour”;
- Medal “850th Anniversary of Moscow”;

International awards:

- Fuchs Memorial Award (Taipei, 2002);
- Christian E. Junge Award (Salzburg, 2007).

Main scientific results:

- Formulation of a new approach to the description of coagulation (the Marcus-Lushnikov scheme);
- Theoretical prediction and experimental discovery of the aerosol-aerogel transition;
- Solution of the problem of aerosol-aerogel transition for arbitrary initial conditions;
- Experimental observation of two-quantum photoeffect on nanoparticles;
- Detection of singular and supersingular mass spectra in coagulating systems;
- Equations of coagulation kinetics in mixtures of particles;
- Study of coagulation processes in systems containing particle sources;
- New exactly solvable models of strongly non-equilibrium systems.

Research and management:

- 1962–1971 – junior researcher at the I. V. Kurchatov Institute of Atomic Energy, Department of Nuclear Physics (sector 10);
- 1971–1976 – junior researcher of the Laboratory of physics of aerodisperse systems at the L. Y. Karpov Research Institute of Physical Chemistry;
- 1974–1976 – senior researcher of the same laboratory;

- 1976–2012 – Head of laboratory;
- 2012 – principal researcher at GC RAS.

Membership in the international scientific unions:

- Gesellschaft für Aerosolforschung (GAeF);
- Finnish Association for Aerosol Research (FAAR), Honorary Member;
- International Commission on Nucleation and Atmospheric Aerosols (8 years).

Research abroad:

Helsinki:

- Visiting professor at the University of Helsinki (1991-2008);

London:

- Visiting professor at UCL (University College London) (1997);

Vienna:

- Visiting professor at the Vienna University (1993).

Editorial and publishing activity:

- Member of the Editorial Board of the Journal of Aerosol Science (1993 – 2007);
- Member of the Editorial Board of the “Izvestia RAN”, Series on Atmospheric and Oceanic Physics;
- Deputy Chief Editor of the “Russian Journal of Earth Science”;
- Member of the Editorial Board of the “Open Journal of Nanoscience”;
- Regular reviewer of the “Phys. Rev.”, “Phys. Rev. Lett.”, “J. Aerosol Sci.”, “Open J. Nanosci”.

International Conferences:

Since 1988 – regular participant and organizer of European and International Aerosol Conferences, International Conferences on nucleation and atmospheric aerosols, as well as international seminars on coagulation and fragmentation.

Publications:

149 articles in foreign and domestic journals. Co-author of six monographs.