C U R R I C U L U M V I T A E

A L E X A N D E R K . S H C H E K I N

Born July, 28, 1957
Physical Faculty of Saint Petersburg State University, 1 Ulyanovskaya Str., 908504 St Petersburg, Russia
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https://www.scopus.com/authid/detail.uri?authorId=7005294908

https://www.researchgate.net/profile/Alexander_Shchekin/publications?sorting=recentlyAdded&editMode=1

OBJECTIVE

Theory of nucleation phenomena in vapor, liquids, and solids. Thermodynamics and kinetics of phase transformations, the theory of micellization, statistical physics of interface phenomena

EXPERIENCE

2006 – Present. *Head of the Department of Statistical Physics, St Petersburg State University, St Petersburg, Russia*

2005 – 2011. *Vice-head of the Theoretical Physics Division of V.A. Fock Research Institute of Physics, St Petersburg State University, St Petersburg, Russia*

2011 – 2013. *Head of the Theoretical Physics Division of V.A. Fock Research Institute of Physics, St Petersburg State University, St Petersburg, Russia*

2007 – 2009. *The member of Scientific Council in Colloid Chemistry and Physical and Chemical Mechanics of the Russian Academy of Sciences, RAS, Moscow, Russia*

1979-1980 *Junior Researcher*

Research Institute of Physics, Leningrad State University, Leningrad, the USSR

1984-1989 *Assistant Professor*

1989-1990 *Associated Professor*

Theoretical Physics Department, Kaliningrad State University, Kaliningrad, the USSR

1994-1995 *Senior Researcher*

1995-1996 *Leading Researcher*

Research Institute of Physics, St Petersburg State University, St Petersburg, Russia

1997-2007 *Professor*

Department of Statistical Physics, St Petersburg State University, St Petersburg, Russia

Visiting Scientist :

1988-1989 – *University of Kentucky, Lexington, USA;*

1995 – *Cornell University, Ithaka, USA;*

1997 – *University Nebraska-Lincoln, Lincoln, USA;*

2003 – *University of California-Los Angeles, Los Angeles, USA;*

2008 – *Kabardino-Balkaria State University, Nalchik, Russian Federation;*

2009 – *Leibnitz Institute for Tropospheric Research, Leipzig, Germany;*

Advisor of PhD students: 11 in Russia; 9 already received their PhD degrees

Advisor of 21 MD students.

INTERNATIONAL COOPERATIONS

1988-1989 Evaporation of charged droplets in the atmosphere of inert gas.
Department of Chemical Engineering, University of Kentucky (Prof. A.K. Ray)

1995-1996 Investigation of the role of surface forces in nucleation on solid particles.
Department of Chemistry, Cornell University (Prof. B. Widom)

1997-1998 Study of the curvature corrections in thermodynamics of small droplet.
Department of Chemistry, University Nebraska-Lincoln (Prof. X.C. Zeng)

2003-2004 Theory of non-steady growth of supercritical droplets and the nearest-neighbour effects
Department of Chemistry and Biochemistry, University of California-Los Angeles(Prof. H. Reiss)

2006-present Thermodynamics and kinetics of deliquescence and efflorescence phenomena in the atmospheric aerosol.
Leibnitz Institute for Tropospheric Research (Dr. O.Hellmuth)

2011-2012 Methods and tools for the non-equilibrium analysis of nanoscopic interfaces (work package 1 vapour-liquid surface tension).
Imperial College London and Universität Paderborn (Dr. M. Horsch)

EDUCATION

1974–1979 Kaliningrad State University — Kaliningrad, USSR
- *MD in Theoretical Physics.*

1980–1983 Department of Statistical Physics — Leningrad, USSR
Ph. D., Theoretical and Mathematical Physics. Scientific Degree from Leningrad State University. — Leningrad, USSR

1991–1994 Department of Statistical Physics — St Petersburg, Russia
Dr.Sc in Molecular Physics and Thermophysics. Scientific Degree from St Petersburg State University. — St Petersburg, Russia

PLENARY LECTURES ETC.

Since **1997** – plenary lecturer, invited speaker, panelist, official reviewer, organizing committee member and session chairman at several International Conferences and Workshops in Russia. Expert on Nucleation and Interface Phenomena: INTAS, RFBR, GRACENAS.

INTERNATIONAL JOURNAL EDITORIALS

Since **1997 to present** member of the Editorial Board of the Colloid Journal of RAS.

STATE AWARDS & GRANTS

1989 - diploma of the Ministry of Higher Education of Russian Federation
2004 - honour diploma of the Ministry of Education of Russian Federation
1996 - award of International Publishing Company Maik-Nauka (1995) for the best publications in scientific journals of Russian Academy of Science.
2002-2004 Soros Professor.
2006 - the main award of International Publishing Company Maik-Nauka for series of works entitled "The general kinetic theory of micellization and molecular mechanisms of relaxation".
2012 – the sign of Honored Worker of Higher Professional Education of Russian Federation

PROFESSIONAL MEMBERSHIP

Russian Chemical Society, since **2004**
Corresponding Member of the Russian Academy of Sciences, since **2016**

Publications in peer-reviewed Journals:
Journal of Aerosol Science, Fluid Phase Equilibria, Journal of Molecular Liquids, Soft Matter, RSC Advances, Atmospheric Chemistry and Physics, Colloid Journal, Aerosol Science&Technology, Journal of Chemical Physics, Langmuir, Nucleation and Atmospheric Aerosols, Physical Review E, Physica A: Statistical Mechanics and its Applications, Colloids and Surfaces A: Physicochem. Eng. Aspects, Chemistry Letters, Atmospheric Research, Russian Journal of Physical Chemistry A, Molecular Physics, Mendeleev Communications, Russian Journal of General Chemistry, Physics–Uspekhi, Inorganic Materials, Advances in Colloid and Interface Science, Theoretical and Mathematical Physics, Journal of Applied Mechanics and Technical Physics, Izvestiâ Akademii nauk SSSR. Fizika atmosfery i okeana

Books and textbooks :

1. A.I. Rusanov, A.K. Shchekin (2016), Micellization in surfactant solutions, 2 ed. (in Russian), Publ. Lan, St- Petersburg-Moscow-Krasnodar.

2. O. Hellmuth, , V. I. Khvorostyanov, J. A. Curry, A. K. Shchekin, J. W. P. Schmelzer, R. Feistel, Y. S. Djikaev, and V. G. Baidakov (2013) Nucleation Theory and Applications, Special Issues. Review Series on Selected Topics of Atmospheric Ice and Sol Formation. V.1. Selected Aspects of the Theory of Ice and Salt Crystallisation. Dubna:JINR.- 513 p.

3. Kuni, F.M., Shchekin, A.K., & Novozhilova, T. Yu. (2011). Kinetic theory of a multistage non-equilibrium process in macroscopic systems The Faculty of Chemistry of St Petersburg University Publ., St Petersburg. (in Russian)

4. Kuni, F.M., Shchekin, A.K., & Novozhilova, T. Yu. (2009). A reduced statistical description of macroscopic systems. The Faculty of Physics of St Petersburg University Publ., St Petersburg. (in Russian)

5. Shchekin, A. K., & Kuni, F. M. (2002). The basics of thermodynamics of nucleation on soluble nuclei. St Petersburg State University Press, St Petersburg. (in Russian)

6. Shchekin, A. K., Kuni, F. M., & Tatyanenko, D. V. (2002). Thermodynamics of

nucleation on insoluble macroscopic nuclei. St Petersburg State University Press, St Petersburg. (in Russian)

7. Kuni, F. M., & Shchekin, A. K. (1999). Additional chapters of statistical physics and thermodynamics (in questions and answers for the lecture course in the MS program), St Petersburg State University Press, St Petersburg. (in Russian)

8. Shchekin, A.K., Leble, S.B., & Vereshchagin D.A. (1990). Introduction to physical kinetics of rarefied gases. KSU, Kalinigrad. (in Russian)

List of papers (1980-):

1. Nikolai A. Volkov, Alexander K. Shchekin, Nikolay V. Tuzov, Tatiana S. Lebedeva, Marina A. Kazantseva (2017), Molecular modeling of ionic aggregates at several concentrations of SDS in aqueous solution, Journal of Molecular Liquids, http://doi.org/10.1016/j.molliq.2017.04.018
2. A.E. Kuchma, A.K. Shchekin, N.E. Esipova, D.V. Tatyanenko, S.V. Itskov, A.V. Savin (2017), Three Stages of Water Microdroplet Evaporation on Hydrophobized Surface: Comparison between Steady-State Theory and Experiment, COLLOID JOURNAL, Vol. 79, № 3, P. 353-359.
3. Alexander K. Shchekin and Tatiana S. Lebedeva (2017), Density functional description of size-dependent effects at nucleation on neutral and charged nanoparticles, Journal of Chemical Physics, Vol. 146, P. 094702_1-9.
4. I. A. Babintsev, L. Ts. Adzhemyan, A. K. Shchekin (2017), Extension of the analytical kinetics of micellar relaxation: improving a relation between the Becker-Doring difference equations and their Fokker-Planck approximation, Physica A: Statistical Mechanics and its Applications, Vol. 479, P. 551–562.
5. Anatoly E. Kuchma, Alexander K. Shchekin and Mikhail Yu. Bulgakov (2017), The theory of degassing and swelling of a supersaturated-by-gas solution, Physica A: Statistical Mechanics and its Applications, Vol. 468, P. 228-237.
6. L. Ts. Adzhemyan, A. K. Shchekin, and I. A. Babintsev (2017), The "Fine Structure" of the Slow Micellar Relaxation Mode and the Aggregation Rates in the Range between a Potential Hump and Well in the Work of Aggregation, COLLOID JOURNAL, Vol. 79, № 3, P. 295-302.
7. N. A. Volkov, N. V. Tuzov, and A. K. Shchekin (2017), All-Atom Molecular Dynamics Analysis of Kinetic and Structural Properties of Ionic Micellar Solutions, COLLOID JOURNAL, Vol. 79, № 2, P. 181–189.
8. Alexander K. Shchekin, Ilya A. Babintsev, Loran Ts. Adzhemyan (2016), Full-time kinetics of self-assembly and disassembly in micellar solution via the generalized Smoluchowski equation with fusion and fission of surfactant aggregates. Journal of Chemical Physics, Vol. 145, n. 174105.
9. A.E. Kuchma, A.K. Shchekin, D.S. Martyukova (2016), The Stefan outflow in a multicomponent vapor-gasatmosphere around a droplet and its role for cloudexpansion, Journal of Aerosol Science, Vol. 102, P. 72–82.

10. A. K. Shchekin, T. S. Lebedeva, D. V. Tatyanenko (2016), Key Thermodynamic Characteristics of Nucleation on Charged and Neutral Cores of Molecular Sizes in Terms of the Gradient Density Functional Theory, COLLOID JOURNAL, Vol. 78, № 4, P. 553–565.

11. D. S. Martyukova, A. K. Shchekin, A. E. Kuchma, and A. A. Lezova (2016), Nonstationary Evolution of the Size, Composition, and Temperature of Microdroplets of Nonideal Two and Three Component Aqueous Solutions, COLLOID JOURNAL, Vol. 78, № 3, P. 353-362.

12. A. E. Kuchma, A. K. Shchekin, D. S. Martyukova, and A. A. Lezova (2016), Equations for the Evolution of a Growing or Evaporating Free Microdroplet under Nonstationary Conditions of Diffusion and Heat Transfer in a Multicomponent Vapor–Gas Medium, COLLOID JOURNAL, Vol. 78, № 3, P. 340-352.

13. Alexander K. Shchekin, Tatiana S. Lebedeva, Dmitry V. Tatyanenko (2016), Dependence of the condensate chemical potential on droplet size in thermodynamics of heterogeneous nucleation within the gradient DFT, Fluid Phase Equilibria, Vol. 424, P. 162–172.

14. Nikolai A. Volkov, Nikolay V. Tuzov, Alexander K. Shchekin (2016), Molecular dynamics study of salt influence on transport and structural properties of SDS micellar solutions, Fluid Phase Equilibria, Vol. 424, P. 114-121.

15. T.G. Movchan, A.I. Rusanov, I.V. Soboleva, N.R. Khlebunova, E.V. Plotnikova, and A.K. Shchekin (2015), Diffusion Coefficients of Ionic Surfactants with Different Molecular Structures in Aqueous Solutions, COLLOID JOURNAL, Vol. 77, № 4, P. 492-499.

16. Hellmuth, O.; Shchekin, A.K. (2015), Determination of interfacial parameters of a soluble particle in a nonideal solution from measured deliquescence and efflorescence humidities, Atmospheric Chemistry and Physics, № 7. P. 3851-3871.

17. Qing He,Alexander Shchekin,Mingliang Xie (2015), New analytical TEMOM solutions for a class of collision kernels in the theory of Brownian coagulation, Physica A: Statistical Mechanics and its Applications, Vol. 428, P. 435–442.

18. Nikolai A. Volkov, Boris B. Divinskiy, Pavel N. Vorontsov-Velyaminov, Alexander K. Shchekin (2015), Diffusivities of species in ionic micellar solutions: molecular dynamic simulation, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol. 480, P. 165-170.

19. Anatoly E.Kuchma, Alexander K. Shchekin and Maxim N. Markov (2015), The Stage of Nucleation of Supercritical Droplets with Thermal Effects in the Regime of Nonstationary Diffusion and Heat Transfer, Colloids and Surfaces A: Physicochemical and Engineering Aspects, V.483. P. 307–315.

20. T. G. Movchan, A. K. Shchekin, I. V. Soboleva, N. R. Khlebunova, E. V. Plotnikova, and A. I. Rusanov (2015), Diffusion Coefficients and Viscosities of Aqueous Solutions of Alkyltrimethylammonium Bromides, COLLOID JOURNAL, Vol. 77, № 2. P. 179-185.

21. Anatoly I. Zakharov, Loran Ts. Adzhemyan, and Alexander K. Shchekin (2015), Relaxation times and modes of disturbed aggregate distribution in micellar solutions with fusion and fission of micelles, Journal of Chemical Physics, Vol. 143,

№ 12, n.124902.

22. A. E. Kuchma, A. K. Shchekin (2015), Evolution of size and composition of a multicomponentgas bubble in liquid solution, Nanosystems: Physics, Chemistry, Mathematics, Vol. 6, № 4, P. 479-488.

23. A.K. Shchekin, I.A. Babintsev, L.Ts. Adzhemyan, N.A. Volkov (2014), Kinetic modeling of self-aggregation in solutions with coexisting spherical and cylindrical micelles at arbitrary initial conditions, RSC Advances, Vol. 4, № 93, P. 51722 - 51733

24. Anatoly Kuchma, Alexander Shchekin, Maxim Markov (2014)," The Stage of Nonisothermal Nucleation of Supercritical Particles of a New Phase under Nonstationary Conditions of Particle Diffusion Growth and Heat Transfer to a Medium." Colloid Journal, Vol. 76, No. 6, pp. 701–711. doi: 10.1134/S1061933X1406009X.

25. O. Hellmuth and A. K. Shchekin (2014), "Determination of interfacial parameters of a soluble particle in a nonideal solution from measured deliquescence and efflorescence humidities." Atmospheric Chemistry and Physics, v.14, 22715–22762, doi:10.5194/acpd-14-22715-2014.

26. A.E. Kuchma, A.K. Shchekin, A.A. Lezova, D.S. Martyukova (2014)," On the Evolution of a Multicomponent Droplet during Nonisothermal Diffusion Growth or Evaporation", Colloid Journal, Vol. 76, No. 5, pp. 576–584. doi: 10.1134/S1061933X14040085.

27. I.A. Babintsev, L.Ts. Adzhemyan, and A.K. Shchekin (2014), "Multi-scale times and modes of fast and slow relaxation in solutions with coexisting spherical and cylindrical micelles according to the difference Becker-Döring kinetic equations." J. Chem. Phys. 141, n.6, 064901 (2014); doi: 10.1063/1.4890531

28. I.A. Babintsev, L.Ts. Adzhemyan, and A.K. Shchekin (2014), "Kinetics of micellisation and relaxation of cylindrical micelles described by the difference Becker-Döring equation", Soft Matter, 2014, V.10, 2619–2631, http://pubs.rsc.org/en/content/articlelanding/2013/sm/c3sm52460d

29. Anatoly E. Kuchma, Maxim N. Markov, and Alexander K. Shchekin (2014), "Nucleation stage in supersaturated vapor with inhomogeneities due to nonstationary diffusion onto growing droplets". Physica A, 2014, v.402, 255–265. DOI information: 10.1016/j.physa.2014.02.005

30. V.B. Warshavsky, T.S. Podguzova, D.V. Tatyanenko, A.K.Shchekin (2013), "Thermodynamics of a Liquid Wetting Film on a Spherical Particle with an Adsorbed Ion", Colloid Journal, 2013, Vol. 75, No. 5, pp. 504–513. DOI: 10.1134/S1061933X13050153

31. D.S. Martyukova, A.E. Kuchma, A.K. Shchekin (2013), "Dynamics of Variations in Size and Composition of a Binary Droplet in a Mixture of Two Condensing Vapors and a Passive Gas under Arbitrary Initial Conditions", Colloid Journal, 75, n. 5, pp. 571–578 (2013). DOI: 10.1134/S1061933X13050086

32. V. B. Warshavsky, T. S. Podguzova, D. V. Tatyanenko, and A. K. Shchekin (2013), "Vapor nucleation on a wettable nanoparticle carrying a non-central discrete electric charge", J. Chem. Phys. 138, n.19, 194708 (2013);

http://dx.doi.org/10.1063/1.4804655

33. A.E. Kuchma, D.S. Martyukova, A.A. Lezova, A.K. Shchekin (2013),"Size, temperature and composition of a spherical droplet as a function of time at the transient stage of nonisothermal binary condensation or evaporation", Colloids and Surfaces A: Physicochemical and Engineering Aspects, 432, 147–156 (2013); http://dx.doi.org/10.1016/j.colsurfa.2013.04.023
34. A.K. Shchekin, I.V. Shabaev, and O. Hellmuth (2013), "Thermodynamic and kinetic theory of nucleation, deliquescence and efflorescence transitions in the ensemble of droplets on soluble particles", J. Chem. Phys., 2013, v.138, No. 5, 054704.
35. Alexander Shchekin, Anatoly Rusanov, Fedor Kuni (2012),"The kinetic theory of molecular mechanism of micellar relaxation", Chemistry Letters, 2012, v.41, No. 10, P.1081-1083.
36. Ilya Babintsev, Loran Adzhemyan, Alexander Shchekin (2012),"Micellization and relaxation in solution with spherical micelles via the discrete Becker-Döring equations at different total surfactant concentrations", Journal of the Chemical Physics, 2012, v.137, 044902; doi: 10.1063/1.4737130.
37. A.E. Kuchma and A.K. Shchekin (2012),"A Self Similar Regime of Droplet Growth with Allowance for the Stefan Flux and Dependence of Diffusion Coefficient on Vapor–Gas Medium Composition", Colloid Journal, 2012, Vol. 74, No. 2, pp. 215–222.
38. T.G. Movchan, I.V. Soboleva, E.V. Plotnikova, A.K. Shchekin, A.I. Rusanov (2012)," Dynamic Light Scattering Study of Cetyltrimethylammonium Bromide Aqueous Solutions", Colloid Journal, 2012, Vol. 74, No. 2, pp. 239–247.
39. Martin Horsch, Erich A. Müller, George Jackson, Stefan Eckelsbach, Animesh Agarwal, Jadran Vrabec, Alexander Shchekin, Hans Hasse, "The excess equimolar radius of liquid drops.", Phys. Rev. E85, n.3, 031605 (12p) (2012) doi:10.1103/PhysRevE.85.031605
40. Hellmuth, O., V. I. Khvorostyanov, J. A. Curry, A. K. Shchekin, J. W. P. Schmelzer, and V. G. Baidakov (2011)," Review on the Phenomenology and Mechanism of Atmospheric Ice Formation: Selected Questions of Interest.", In *"Nucleation Theory and Applications* 2011*"*, edited by J.W.P. Schmelzer, G. Röpke and V.B. Priezzhev (Dubna, JINR, 2011) . p.429-462.
41. A.E. Kuchma, A.K. Shchekin (2011),"Self-Similar Regime of Diffusion Growth of a Droplet in a Vapor-Gas Medium with Allowance for Stefan's Flow.", In *"Nucleation Theory and Applications 2011"*, edited by J.W.P. Schmelzer, G. Röpke and V.B. Priezzhev (Dubna, JINR, 2011) p. 203-212.
42. A.E. Kuchma, A.K. Shchekin, & F.M. Kuni (2011), "Simultaneous establishing of stationary growth rate and composition of supercritical droplets at isothermal binary condensation in the diffusion-controlled regime", Physica A: Statistical Mechanics and its Applications, v.390, p.3308–3316; doi: 10.1016/j.physa.2011.05.028.
43. Shchekin, A.K., Kshevetskiy, M.S., & Pelevina, O.S. (2011) Micellization kinetics with allowance for fussion and fission of spherical and cylindrical micelles: 1. Set of

nonlinear equations describing slow relaxation. Colloid Journal, 73 (3), 406–417.

44. Shchekin, A.K., Kuni, F.M., & Lezova, A.A. (2011) Thermal Effects Accompanying Stationary Binary Condensation of Vapors into Supercritical Droplet. Colloid Journal, 73 (3), 394–405.
45. Kuchma, A.E., Shchekin, A.K., & Kuni, F.M. (2011). Dynamics of Variations in Size and Composition of Supercritical Droplets during Binary Condensation. Colloid Journal, 73 (2), 224–233.
46. A.K. Shchekin, T.S. Podguzova, "The modified Thomson equation in the theory of heterogeneous vapor nucleation on charged solid particles Atmospheric Research, 2011, v.101, n.3, p. 493-502, doi: 10.1016/j.atmosres.2010.10.006.
47. Burov, S.V., & Shchekin, A.K. (2010) Aggregation work at polydisperse micellization: ideal solution and "dressed micelle" models comparing to molecular dynamics simulations. Journal of Chemical Physics, 133 (24), 244109.
48. Tatyanenko, D.V., & Shchekin, A.K. (2010) Dependence of line tension and contact angle of a sessile droplet on the droplet size. In "Physical and chemical aspects of the study of clusters, nanostructures and nanomaterials", ed. by V.M. Samsonov and N.Yu. Sdobnyakov. Publ. Tver, Tver State University, n.2, p.149-164. (in Russian).
49. Rusanov, A.I., Tatyanenko, D.V., & Shchekin, A.K.. (2010). New approach to determination of the thermodynamic surface tension of solids. Colloid Journal, 2010, 72 (5), 673–678.
50. Shchekin, A.K., & Shabaev, I.V. (2010) Activation Barriers for the Complete Dissolution of Condensation Nucleus and Its Reverse Crystallization in Droplets in the Undersaturated Solvent Vapor. Colloid Journal, 72(3), 432–439.
51. Kuchma, A.E., Kuni, F.M., & Shchekin, A.K. (2009). The effect of excluded volume on the stage of supercritical gas bubble nucleation in strongly supersaturated liquid solution. Vestnik of St Petersburg University, Ser.4, №4, 321-330. (in Russian)
52. Tatyanenko, D.V., & Shchekin, A.K.(2009). Small droplets at nucleation on partially wettable substrate: the linear tension and adsorption. In "Physical and chemical aspects of studying clusters, nanostructures and nanomaterials", devoted to the memory of Prof. L.M. Shcherbakov. Publ. Tver, Tver State University, n.1, 116-129. (in Russian).
53. Kuni, F. M., & Shchekin, A. K. (2009). Regularities of binary condensation of vapors when one of them is undersaturated. Colloid Journal, 71(5), 654-659.
54. Rusanov, A.I., Shchekin, A.K., & Tatyanenko, D.V. (2009). Grand potential in thermodynamics of solid bodies and surfaces. Journal of Chemical Physics, 131(16), 161104.
55. Kuchma, A.E., Kuni, F.M., & Shchekin, A.K. (2009). Nucleation stage with non-steady growth of supercritical gas bubbles in a strongly supersaturated liquid solution and the effect of excluded volume. Physical Review E, 80, 061125.
56. Rusanov, A. I., Kuni, F. M., & Shchekin, A. K. (2009). Thermodynamic and Kinetic Theory of Ionic Micellar Systems: 2. Statistical–Thermodynamic Relations. Colloid

Journal, 71(6), 826–834.

57. Rusanov, A. I., Kuni, F. M., & Shchekin, A. K. (2009). Thermodynamic and Kinetic Theory of Ionic Micellar Systems: 1. Work of Aggregation. Colloid Journal, 71 (6), 816–825.

58. Shchekin, A.K. & Podguzova, T.S. (2009). Effects of Overlapping Surface Layers and Electric Field on Nucleation Activity of Nanosized Charged Solid Nuclei". Proceedings of 18th International Conference, 10-14 August 2009, Prague, Chech Republic, Nucleation and Atmospheric Aerosols. Eds. J.Smolik and C. ODowd, N1.2, 452-455.

59. Hellmuth O., Shchekin A.K., Shabaev I.V., & Katzwinkel J. (2009). On Deliquescence/ Efflorescence Induced Hysteresis During Hygroscopic Particle Growth/Evaporation", Proceedings of 18th International Conference, 10-14 August 2009, Prague, Chech Republic, Nucleation and Atmospheric Aerosols. Eds. J.Smolik and C. ODowd, A16.4, 419-422.

60. Kuni, F.M., Lezova, A.A., & Shchekin, A.K. (2009). The laws of establishing stationary composition in a droplet condensing in a binary vapor-gas environment. Physica A: Statistical Mechanics and its Applications, 388(18), 3728-3736.

61. Kshevetskiy, M. S., & Shchekin, A. K. (2009). Nonlinear kinetics of fast relaxation in solutions with short and lengthy micelles. Journal of Chemical Physics, 131(7), 074114.

62. Rusanov, A. I., Kuni, F. M., & Shchekin, A. K. (2009). Point excesses in the theory of ordinary and micellar solutions. Russian Journal of Physical Chemistry A, 83(2), 223-230.

63. Kshevetskiy, M.S., Shchekin, A.K. (2008). Nonlinear fast relaxation of coexisting short and lengthy micelles. In "Nucleation Theory and Applications", edited by J.W.P. Schmelzer, G. Röpke and V.B. Priezzhev, Dubna, JINR, 343-356.

64. Shchekin, A.K., Shabaev, I.V. (2008). The deliquescence and efflorescence barriers in heterogeneous nucleation in undersaturated vapor. In "Nucleation Theory and Applications, edited by J.W.P. Schmelzer, G. Röpke and V.B. Priezzhev, Dubna, JINR, 357-368.

65. Hellmuth, O., Schmelzer, J.W.P., Shchekin, A.K., Abyzov, A.S. (2008). Atmospheric new particle formation by heterogeneous nucleation revisited: comments on phenomenology and genesis. In "Nucleation Theory and Applications", edited by J.W.P. Schmelzer, G. Röpke and V.B. Priezzhev. Dubna, JINR, 399-454.

66. Shchekin, A. K., Shabaev, I. V., Rusanov, A. I. (2008). Thermodynamics of droplet formation around a soluble condensation nucleus in the atmosphere of a solvent vapor. Journal of Chemical Physics, 129(21), 214111.

67. Shchekin, A. K., Rusanov, A. I. (2008). Generalization of the Gibbs-Kelvin-Köhler and Ostwald-Freundlich equations for a liquid film on a soluble nanoparticle. Journal of Chemical Physics, 129(15), 154116.

68. Kshevetskii, M. S., Shchekin, A. K., & Kuni, F. M. (2008). Kinetics of slow relaxation upon the competition between globular and small spherocylindrical micelles. Colloid Journal, 70(4), 455-461.

69. Shchekin, A. K., Kuni, F. M., & Shakhnov, K. S. (2008). Power-law stage of slow relaxation in solutions with spherical micelles. Colloid Journal, 70(2), 244-256.

70. Rusanov, A. I., & Shchekin, A. K. (2008). The condition of mechanical equilibrium on the surface of a nonuniform thin film. Colloid Journal, 70(2), 260-261.

71. Shabaev, I. V., & Shchekin, A. K. Thermodynamics of the initial stage of deliquescence of soluble condensation nuclei in undersaturated vapors. In "Natural and antropogenic aerosols-5", Ed. L.S. Ivlev, VVM, St Petersburg. c.42-48. (in Russian)

72. Shchekin, A. K., Kuni, F. M., Grinin, A. P., & Rusanov, A. I. (2008). A kinetic description of the fast relaxation of coexisting spherical and cylindrical micelles. Russian Journal of Physical Chemistry A, 82(1), 101-107.

73. Rusanov, A. I., & Shchekin, A. K. (2007). On the definition of the disjoining pressure of a wedge-shaped film. Molecular Physics, 105(23-24), 3185-3186.

74. Rusanov, A. I., & Shchekin, A. K. (2007). On the formulation of the material equilibrium condition for a dissolving solid nanoparticle. Journal of Chemical Physics, 127(19), 191102.

75. Kuni, F. M., Shchekin, A. K., Rusanov, A. I., & Grinin, A. P. (2007). Relations for extrema of the work of aggregation in micellar solutions. Colloid Journal, 69(3), 319-327.

76. Ivlev, L. S., & Shchekin, A. K. (2007). The 5th international conference on natural and anthropogenic aerosols. Colloid Journal, 69(2), 261.

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