

Prof. Nikolai D. Denkov

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Faculty of Chemistry and Pharmacy
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Academic degrees:

2007 – DSc in Physical Chemistry, Sofia University, Sofia, Bulgaria.
1993 – PhD in Physical Chemistry, Sofia University, Sofia, Bulgaria.
1987 – MSc in Chemical Physics and Theoretical Chemistry, Sofia University, Sofia, Bulgaria.

Academic career:

2008 – present: Professor, Faculty of Chemistry, Sofia University
2003-2004: Lead scientist, Unilever R&D, Edgewater NJ, USA (sabbatical leave)
1998-2008: Associate Professor, Faculty of Chemistry, Sofia University
1997-1998: Senior Research Associate, R&D Center, Rhone-Poulenc, France (sabbatical leave)
1996-1997: Assistant Professor, Faculty of Chemistry, Sofia University.
1994-1995: Research Associate, ERATO, JRDC, Tsukuba, Japan.
1991-1994: Researcher, Faculty of Chemistry, Sofia University.

Research Interests:

Physical chemistry and applications of disperse systems and surfactants:

- Surfactants, micellar solutions, adsorption, solubilization, detergency
- Formation, stability and rheology of emulsions
- Foam generation, rheology, and stability
- Antifoam effect of oils and oil-solid mixtures
- Surface forces, capillary phenomena and stability of thin liquid films
- Biophysics of food digestion and oral drug delivery

Publications:

- 165 research papers, incl. *Nature* (2), *Nature Comm.* (1), *Phys. Rev. Lett.* (5), *Langmuir* (47), *Adv. Colloid Interface Sci.* (6), *Soft Matter* (4), 20 invited reviews in books and journals, cited > 7800 times, *h*-index = 45 (WoS)
- 12 patents – incl. 6 international (WIPO, US, Europe), 1 German, 2 Japanese, 2 Chinese
- 80 lectures presented at International conferences and symposia (36 plenary or keynote)
- 76 invited seminars in foreign Universities and Research institutes
- 13 completed PhD Theses and 6 others under preparation

Teaching Courses:

- Chemical Kinetics and Catalysis
- Intermolecular and Surface Forces
- Interfacial Phenomena and Stability of Dispersions
- Disperse Systems
- Separation Processes in Disperse Systems

Professional and administrative service:

2019: Chair of ERC PE5 panel (Materials and Synthesis) for Consolidator Grants evaluation
2017-present: Head of Laboratory for active formulations and materials
2017: Minister of science and education of Bulgaria
2014-2016: Deputy Minister of science and education of Bulgaria
2014-present: Member, Editorial Board, Colloid & Interface Science Communications (Eslevier)
2008-2015: Head, Department of Chemical Engineering, Faculty of Chemistry, Sofia University
2009-2010: Member, National Scientific Commission for granting degrees in Chemical Sciences
2008-2010: Member, National Scientific Council for granting degrees in Theoretical Chemistry
2004-2008: Vice dean of the Faculty of Chemistry, Sofia University

Awards and fellowships:

2020: Lectureship Award, Division of Colloid and Surface Chemistry, Chemical Society of Japan
2019: Elected member of Academia Europaea (The Academy of Europe)
2019: Awarded the Solvay Prize of the European Colloid and Interface Society (ECIS)
2019: Invited member of the Physical Sciences Working Group of European Space Agency
2018: Elected member of the international Council of IACIS (International Association of the Colloid and Interface Scientists)
2018: Elected corresponding member of the Bulgarian Academy of Sciences
2016: Granted big award for high scientific achievements of Sofia University.
2013: Granted Medal of Honor with blue ribbon by Sofia University for academic achievements.
2010: Granted by the Bulgarian Ministry of Education and Science with the highest National award "Pythagoras" for scientific achievements.
1995: Diploma by Japanese Research and Development Corporation (JRDC)

Organizer of scientific events:

2013: International school Structure and Dynamics of Liquid Foams, Orsay, France
2010: 8th International conference Eufoam; Bugaria
2010: Summer training school Physics of Droplets; Bulgaria
2004: International conference Physics and Design of Foams; NJ, USA
Member of the scientific committee of 7 international conferences

Professional Societies:

American Chemical Society (ACS)
European Colloid and Interface Society (ECIS)
International Association of Colloid and Interface Scientists (IACIS)

Projects:

2012-2015: Leader of the Bulgarian team, ERC project (EMATTER No 280078, in collaboration with the University of Cambridge)
2009-2018: Member of the MC of 3 COST actions: MP1305 "Flowing Matter"; MP1106 "Smart and green interfaces" and P21 "Physics of Droplets"
2011-2015: Member of the MC and WP leader in FP7-REGPOT project (BeyondEverest, No 286205, in collaboration with Univ. Cambridge, Univ. Barcelona, MPI Golm)
2004-present: PI of 43 projects funded by international companies, incl. Unilever, BASF, Saint Gobain, Wacker, Dow Corning, Rhodia, Heineken.
2014-2016: Negotiated with EC and started the implementation of the national Operational Program "Science and Education for Smart Growth", funded by ERDF (567 mln. Euro).

List of Publications

A. Two-dimensional colloid crystals and capillary forces (experimental and theoretical studies on the mechanism of colloid crystal formation in thin liquid films)

1. N. D. Denkov, O. D. Velev, P. A. Kralchevsky, I. B. Ivanov, H. Yoshimura and K. Nagayama, "Mechanism of Formation of Two-Dimensional Crystals from Latex Particles on Substrata", *Langmuir* **8** (1992) 3183.
2. V. N. Paunov, P. A. Kralchevsky, N. D. Denkov, I. B. Ivanov and K. Nagayama, "Capillary Meniscus Interaction between a Microparticle and a Wall", *Colloids Surfaces* **67** (1992) 119.
3. N. D. Denkov, O. D. Velev, P. A. Kralchevsky, I. B. Ivanov, H. Yoshimura and K. Nagayama, "Two-Dimensional Crystallization", *Nature* (London) **361** (1993) 26.
4. O. D. Velev, N. D. Denkov, V. N. Paunov, P. A. Kralchevsky and K. Nagayama, "Direct Measurement of Lateral Capillary Forces", *Langmuir* **9** (1993) 3702.
5. P. A. Kralchevsky, V. N. Paunov, N. D. Denkov, I. B. Ivanov and K. Nagayama, "Energetical and Force Approaches to the Capillary Interactions between Particles Attached to a Liquid-Fluid Interface", *J. Colloid Interface Sci.*, **155** (1993) 420.
6. V. N. Paunov, P. A. Kralchevsky, N. D. Denkov, K. Nagayama, "Lateral Capillary Forces between Floating Submillimeter Particles", *J. Colloid Interface Sci.* **157** (1993) 100.
7. G. S. Lazarov, N. D. Denkov, O. D. Velev, P. A. Kralchevsky, K. Nagayama, "Formation of Two-Dimensional Structures from Colloidal Particles on Fluorinated Oil Substrate", *J. Chem. Soc. Faraday Trans.* **90** (1994) 2077.
8. P. A. Kralchevsky, V. N. Paunov, N. D. Denkov, K. Nagayama, "Capillary Image Forces. I. Theory", *J. Colloid Interface Sci.* **166** (1994) 47.
9. O. D. Velev, N. D. Denkov, V. N. Paunov, P. A. Kralchevsky, K. Nagayama, "Capillary Image Forces. II. Experiment", *J. Colloid Interface Sci.* **166** (1994) 66.
10. P. A. Kralchevsky, V. N. Paunov, N. D. Denkov, K. Nagayama, "Stresses in Lipid Membranes and Interactions between Inclusions", *J. Chem. Soc.: Faraday Trans.* **91** (1995) 3415.
11. P. A. Kralchevsky, N. D. Denkov, "Analytical Expression for the Oscillatory Structural Surface Forces", *Chem. Phys. Lett.* **240** (1995) 385; N. D. Denkov, and P. A. Kralchevsky, "Colloid Structural Forces in Thin Liquid Films", *Progress Colloid Polymer Sci.* **98** (1995) 18.
12. N. D. Denkov, H. Yoshimura, K. Nagayama, T. Kouyama, "Nanoparticle Arrays in Freely Suspended Vitrified Films", *Phys. Rev. Lett.* **76** (1996) 2354.
13. N. D. Denkov, H. Yoshimura, K. Nagayama, "Method for Controlled Formation of Vitrified Films for Cryo-electron Microscopy", *Ultramicroscopy* **65** (1996) 147.
14. A. Hadjiiski, R. Dimova, N. D. Denkov, I. B. Ivanov and R. Borwankar, "Film Trapping Technique: Precise Method for Three-phase Contact Angle Determination of Solid and Fluid Particles of Micrometer Size", *Langmuir* **12** (1996) 6665.
15. N. D. Denkov, H. Yoshimura, T. Kouyama, J. Walz, K. Nagayama, "Electron Cryomicroscopy of Bacteriorhodopsin Vesicles: Mechanism of Vesicle Formation", *Biophys. J.* **74** (1998) 1409.
16. P. A. Kralchevsky, N. D. Denkov, K. D. Danov, "Particles with an Undulated Contact Line at a Fluid Interface: Interaction between Capillary Quadrupoles and Rheology of Particulate Monolayers", *Langmuir* **17** (2002) 7694.

B. Emulsification (mechanisms of drop breakup and drop-drop coalescence in different flow regimes).

17. N. C. Christov, D. N. Ganchev, N. D. Vassileva, N. D. Denkov, K. D. Danov, P. A. Kralchevsky, "Capillary Mechanisms in Membrane Emulsification: Oil-in-Water Emulsions Stabilized by Tween 20 and Milk Proteins", *Colloids & Surfaces A: Physicochem. Eng. Aspects* **209** (2002) 83-104.
18. S. Tcholakova, N. D. Denkov, D. Sidzhakova, I. B. Ivanov, B. Campbell, "Interrelation between drop size and protein adsorption at various emulsification conditions", *Langmuir* **19** (2003) 5640-5649.
19. S. Tcholakova, N. D. Denkov, T. Danner, "Role of surfactant type and concentration for the mean drop size during emulsification in turbulent flow", *Langmuir* **20** (2004) 7444-7458.
20. H. Steiner, R. Teppner, G. Brenn, N. Vankova, S. Tcholakova, N. Denkov, "Numerical simulation and experimental study of emulsification in a narrow-gap homogenizer", *Chem. Eng. Sci.* **61** (2006) 5841-5855.
21. S. Tcholakova, N. Vankova, N. D. Denkov, I. B. Ivanov, T. Danner, "Kinetics of drop breakup during emulsification in turbulent flow" , Proc. 4th World Congress on Emulsions, Lyon, France, 3-6 October, 2006.
22. N. Vankova, S. Tcholakova, N. D. Denkov, I. B. Ivanov, V. D. Vulchev, T. Danner, "Emulsification in turbulent flow: 1. Mean and maximum drop diameters in inertial and viscous regimes", *J. Colloid Interface Sci.* **312** (2007) 363-380.
23. N. Vankova, S. Tcholakova, N. D. Denkov, V. D. Vulchev, T. Danner, "Emulsification in turbulent flow: 2. Breakage rate constants", *J. Colloid Interface Sci.* **313** (2007) 612-629.
24. S. Tcholakova, N. Vankova, N. D. Denkov, T. Danner, "Emulsification in turbulent flow: 3. Daughter drop-size distribution", *J. Colloid Interface Sci.* **310** (2007) 570-589.
25. S. Tcholakova, I. Lesov, K. Golemanov, N. D. Denkov, S. Judat, "Drop size in concentrated emulsions, obtained by rotor-stator homogenization", In *Proceedings of the 5th World Congress on Emulsions*, Lyon, France, 2010; Paper No. 1.1-53.
26. S. Tcholakova, N. D. Denkov, D. Hristova, M. Deruelle, "Emulsification and emulsion stability of silica-charged silicone oils", In *Proceedings of the 5th World Congress on Emulsions*, Lyon, France, 2010; Paper No. 4.1-50.
27. S. Tcholakova, I. Lesov, K. Golemanov, N. D. Denkov, S. Judat, R. Engel, T. Danner, "Efficient emulsification of viscous oils at high drop volume fraction", *Langmuir* **27** (2011) 14783-14796.
28. S. Tcholakova, N. Politova, N. Denkov. Kinetics of Drop Breakage and Drop-Drop Coalescence in Turbulent Flow. *Biomath Communications* **3** (2016) 1-163.
29. S. Tcholakova, Z. Valkova, D. Cholakova, Z. Vinarov, I. Lesov, N. D. Denkov, K. Smoukov. "Efficient Self-Emulsification via Cooling-Heating Cycles", *Nature Comm.*, **8** (2017) 15012.
30. Zh. Valkova, D. Cholakova, S. Tcholakova, N. Denkov, S. K. Smoukov. "Mechanisms and Control of Self-Emulsification upon Freezing and Melting of Dispersed Alkane Drops". *Langmuir* **33** (2017) 12155-12170.

C. Coalescence and Flocculation Stability of Emulsions; Self-shaping Drops.

31. N. D. Denkov, P. A. Kralchevsky, I. B. Ivanov, C. S. Vassilieff, "Effect of Droplet Deformation on the Interactions in Microemulsions", *J. Colloid Interface Sci.* **143** (1991) 157.
32. N. D. Denkov, P. A. Kralchevsky, I. B. Ivanov, D. T. Wasan, "A Possible Mechanism of Stabilization of Emulsions by Solid Particles", *J. Colloid Interface Sci.* **150** (1992) 589.
33. M. Morita, M. Matsumoto, S. Usui, T. Abe, N. Denkov, O. D. Velev, I. B. Ivanov, "Interfacial Properties and Emulsion Stability in Fluorinated Oil - Nonfluorinated Oil - Surfactant(s) Systems", *Colloids Surfaces* **67** (1992) 81.
34. N. D. Denkov, D. N. Petsev, K. D. Danov, "Interaction between Deformable Brownian Droplets", *Phys. Rev. Lett.* **71** (1993) 3226.
35. K. D. Danov, D. N. Petsev, N. D. Denkov, R. Borwankar, "Pair Interaction Energy between Deformable Drops and Bubbles", *J. Chem. Phys.* **99** (1993) 7179.
36. K. D. Danov, N. D. Denkov, D. N. Petsev, I. B. Ivanov, R. Borwankar, "Coalescence Dynamics of Deformable Brownian Emulsion Drops", *Langmuir* **9** (1993) 1731.
37. O. D. Velev, A. D. Nikolov, N. D. Denkov, G. Doxastakis, V. Kiosseoglu, G. Stalidis "Investigation on the Mechanisms of Stabilization of Food Emulsions by Vegetable Proteins", *Food Hydrocolloids* **7** (1993) 55.
38. N. D. Denkov, D. N. Petsev, K. D. Danov, "Flocculation in Emulsions of Deformable Droplets. I. Droplet Shape and Line Tension Effects", *J. Colloid Interface Sci.* **176** (1995) 189.
39. D. N. Petsev, N. D. Denkov, P. A. Kralchevsky, "Flocculation in Emulsions of Deformable Droplets. II. Pair Interaction Energy", *J. Colloid Interface Sci.* **176** (1995) 201.
40. K. G. Marinova, R. G. Alargova, N. D. Denkov, O. D. Velev, D. N. Petsev, I. B. Ivanov, R. Borwankar, "Charging of Oil-Water Interfaces Due to Spontaneous Adsorption of Hydroxyl Ions", *Langmuir* **12** (1996) 2045.
41. I. B. Ivanov, K. G. Marinova, R. G. Alargova, N. D. Denkov, R. P. Borwankar, "Charge of Emulsion Droplets Covered with Nonionic Surfactants", *Proc. 2nd World Congress on Emulsion*, 23-26 September, 1997, Bordeaux, France; EDS: Paris, 1997; paper 2-2-149.
42. P. A. Kralchevsky, N. D. Denkov, K. D. Danov, D. N. Petsev, "Effect of Droplet Deformability and Surface Forces on Flocculation", *Proc. 2nd World Congress on Emulsion*, 23-26 September, 1997, Bordeaux, France; EDS: Paris, 1997; paper 2-2-150.
43. S. Tcholakova, N. D. Denkov, R. Borwankar, B. Campbell, "Van der Waals Interaction between Two Truncated Spheres Covered by a Uniform Layer (Drops, Vesicles, Bubbles)", *Langmuir* **17** (2001) 2357-2362.
44. S. Tcholakova, N. Denkov, I. Ivanov, B. Campbell, "Coalescence in Protein Stabilized Emulsions", *Proc. 3rd World Congress on Emulsions*, 24-27 September, 2002, Lyon, France.
45. N. Denkov, S. Tcholakova, I. Ivanov, B. Campbell, "Methods for Evaluation of Emulsion Stability at a Single Drop Level", *Proc. 3rd World Congress on Emulsions*, 24-27 September, 2002, Lyon, France.
46. S. Tcholakova, N. D. Denkov, I. B. Ivanov, B. Campbell, "Coalescence in β -Lactoglobulin Stabilized Emulsions: Effects of Protein Adsorption and Drop Size", *Langmuir* **18** (2002) 8960-8971.

47. P. S. Denkova, S. Tcholakova, N. D. Denkov, K. D. Danov, B. Campbell, C. Shawl, D. Kim, "Evaluation of the Precision of Drop-Size Determination in Oil/Water Emulsions by Low Resolution NMR Spectroscopy", *Langmuir* **20** (2004) 11402-11413.
48. S. Tcholakova, N. D. Denkov, I. B. Ivanov, R. Marinov, "Evaluation of short-term and long-term stability of emulsions by centrifugation and NMR", *Bulgarian J. Phys.* **31** (2004) 96-110.
49. S. Tcholakova, N. D. Denkov, D. Sidzhakova, I. B. Ivanov, B. Campbell, "Effects of electrolyte concentration and pH on the coalescence stability of β -lactoglobulin emulsions: Experiment and interpretation", *Langmuir* **21** (2005) 4842-4855.
50. K. Golemanov, S. Tcholakova, N. D. Denkov, T. Gurkov, "Selection of surfactants for stable paraffin-in-water dispersions, undergoing solid-liquid transition of the dispersed particles" *Langmuir* **22** (2006) 3560-3569.
51. S. Tcholakova, N. D. Denkov, D. Sidzhakova, B. Campbell, "Effect of thermal treatment, ionic strength, and pH on the short-term and long-term coalescence stability of β -lactoglobulin emulsions", *Langmuir* **22** (2006) 6042-6052.
52. N. Denkov, S. Tcholakova, I. Lesov, D. Cholakova, S. K. Smoukov. Self-Shaping of Oil Droplets via the Formation of Intermediate Rotator Phases upon Cooling. *Nature* **528** (2015) 392-395.
53. N. Denkov, D. Cholakova, S. Tcholakova, S. Smoukov. „On the Mechanism of Drop Self-Shaping in Cooled Emulsions“, *Langmuir* **32** (2016) 7985-7991.
54. D. Cholakova, N. Denkov, S. Tcholakova, I. Lesov, S. K. Smoukov, „Control of Drop Shape Transformations in Cooled Emulsions“, *Adv. Colloid Interface Sci.* **2016**, 235, 90-107.
55. N. Politova, S. Tcholakova, N. D. Denkov. "Factors Affecting the Stability of Water-oil-water Emulsion Films", *Colloids Surf. A* **522** (2017) 608-620.
56. D. Cholakova, Zh. Valkova, S. Tcholakova, N. Denkov, S. K. Smoukov. "'Self-Shaping" of Multicomponent Drops", *Langmuir* **33** (2017) 5696-5706.
57. P. A. Haas, R. E. Goldstein, S. K. Smoukov, D. Cholakova, N. Denkov, "Theory of Shape-Shifting Droplets", *Phys. Rev. Lett.*, **118** (2017) 088001.
58. R. Gordon, M. M. Hanczyc, N. D. Denkov, M. A. Tiffany, S. K. Smoukov, "Emergence of polygonal shapes in oil droplets and living cells: the potential role of tensegrity in the origin of life", in: *Habitability of the Universe Before Earth*, R. Gordon & A. Sharov eds., Academic Press, 2018, pp. 427-490.
59. D. Cholakova, N. Denkov, S. Tcholakova, Zh. Valkova, S. Smoukov. Multilayer Formation in Self-Shaping Emulsion Droplets. *Langmuir* **35** (2019) 5484-5495.
60. P. A. Haas, D. Cholakova, N. Denkov, R. E. Goldstein, S. K. Smoukov, Shape-Shifting Polyhedral Droplets. *Phys. Rev. Research* **1** (2019) 023017.

D. Mechanisms of Antifoaming.

61. N. D. Denkov, P. Cooper, J.-Y. Martin, "Mechanisms of Action of Mixed Solid-Liquid Antifoams. 1. Dynamics of Foam Film Rupture", *Langmuir* **15** (1999) 8514.
62. N. D. Denkov, "Mechanisms of Action of Mixed Solid-Liquid Antifoams. 2. Stability of Oil Bridges in Foam Films", *Langmuir* **15** (1999) 8530.
63. N. D. Denkov, K. G. Marinova, C. Christova, A. Hadjiiski, P. Cooper, "Mechanisms of Action of Mixed Solid-Liquid Antifoams. 3. Exhaustion and Reactivation", *Langmuir* **16** (2000) 2515-2528.

64. E. Basheva, D. Ganchev, N. Denkov, K. Kasuga, N. Satoh, K. Tsujii, "Role of Betaine as Foam Booster in the Presence of Silicone Oil Drops", *Langmuir* **16** (2000) 1000.
65. N. D. Denkov, K. G. Marinova, "Antifoaming Action of Oils", Proceedings 3rd Euroconference on Foams, Emulsions, and their Applications, June, 2000, Delft, The Netherlands; Verlag MIT Publishing, Bremen, 2000, pp. 199-206.
66. E. S. Basheva, S. Stoyanov, N. D. Denkov, K. Kasuga, N. Satoh, K. Tsujii, "Foam Boosting by Amphiphilic Molecules in the Presence of Silicone Oil", *Langmuir* **17** (2001) 969-979.
67. K. G. Marinova, N. D. Denkov, "Foam Destruction by Mixed Solid-Liquid Antifoams in Solutions of Alkyl Glucoside: Electrostatic Interactions and Dynamic Effects", *Langmuir* **17** (2001) 2426-2436.
68. L. Arnaudov, N. D. Denkov, I. Surcheva, P. Durbut, G. Broze, A. Mehreteab, "Effect of Oily Additives on the Foamability and Foam Stability. 1. Role of Interfacial Properties." *Langmuir* **17** (2001) 6999-7010.
69. A. Hadjiiski, S. Tcholakova, N. D. Denkov, P. Durbut, G. Broze, A. Mehreteab, "Effect of Oily Additives on the Foamability and Foam Stability. 2. Entry Barriers." *Langmuir* **17** (2001) 7011-7021.
70. K. G. Marinova, N. D. Denkov, P. Branlard, Y. Giraud, M. Deruelle, "Optimal Hydrophobicity of Silica in Mixed Oil-Silica Antifoams", *Langmuir* **18** (2002) 3399.
71. K. G. Marinova, N. D. Denkov, S. Tcholakova, M. Deruelle, "Model Studies of the Effect of Silica Hydrophobicity on the Efficiency of Mixed Oil-Silica Antifoams", *Langmuir* **18** (2002) 8761-8769.
72. N. Denkov, S. Tcholakova, K. G. Marinova, A. Hadjiiski, "Role of Oil Spreading for the Efficiency of Mixed Oil-Solid Antifoams", *Langmuir* **18** (2002) 5810-5818.
73. N. Denkov, K. G. Marinova, S. Tcholakova, M. Deruelle, "Mechanism of Foam Destruction by Emulsions of PDMS-Silica Mixtures", Proc. 3rd World Congress on Emulsions, 24-27 September, 2002, Lyon, France; paper 1-D-199.
74. K. G. Marinova, S. Tcholakova, N. Denkov, S. Roussev, M. Deruelle, "Model Studies on the Mechanism of Deactivation (Exhaustion) of Mixed Oil-Silica Antifoams", *Langmuir* **19** (2003) 3084-3089.
75. K. G. Marinova, D. Christova, S. Tcholakova, E. Efremov, N. D. Denkov, "Hydrophobization of Glass Surface by Adsorption of Poly(dimethylsiloxane)" *Langmuir* **21** (2005) 11729-11737.

E. Surfactant micelles, drug and oil solubilization.

76. P. A. Kralchevsky, Y. Radkov and N. Denkov, "Adsorption from Surfactant Solutions under Diffusion Control", *J. Colloid Interface Sci.* **161** (1993) 361.
77. P. D. Todorov, P. A. Kralchevsky, N. D. Denkov, G. Broze, A. Mehreteab, "Kinetics of Solubilization of *n*-Decane and Benzene by Micellar Solutions of Sodium Dodecyl Sulfate", *J. Colloid Interface Sci.* **245** (2002) 371.
78. N. C. Christov, N. D. Denkov, P. A. Kralchevsky, G. Broze, A. Mehreteab, "Kinetics of Triglyceride Solubilization by Micellar Solutions of Nonionic Surfactant and Triblock Copolymer: 1. The Empty and Swollen Micelles", *Langmuir* **18** (2002) 7880-7886.
79. P. A. Kralchevsky, N. D. Denkov, P. D. Todorov, G. S. Marinov, G. Broze, A. Mehreteab, "Kinetics of Triglyceride Solubilization by Micellar Solutions of Nonionic Surfactant and Triblock Copolymer: 2. Theoretical Model", *Langmuir* **18** (2002) 7887-7895.

80. P. D. Todorov, G. S. Marinov, P. A. Kralchevsky, N. D. Denkov, P. Durbut, G. Broze, and A. Mehreteab, "Kinetics of Triglyceride Solubilization by Micellar Solutions of Nonionic Surfactant and Triblock Copolymer: 3. Experiments with Single Drops", *Langmuir* **18** (2002) 7896-7905.
81. N. C. Christov, N. D. Denkov, P. A. Kralchevsky, K. P. Ananthapadmanabhan, A. Lips, "Synergistic Sphere-to-rod Micelle Transition in Mixed Solutions of Sodium Dodecyl Sulfate and Cocoamydopropyl Betaine", *Langmuir* **20** (2004) 565.
82. K.D. Danov, P.A. Kralchevsky, N.D. Denkov, K.P. Ananthapadmanabhan, A. Lips "Mass transport in micellar surfactant solutions: 1. Relaxation of micelle concentration, aggregation number and polydispersity", *Advances Colloid Interface Sci.* **119** (2006) 1-16.
83. K.D. Danov, P.A. Kralchevsky, N.D. Denkov, K.P. Ananthapadmanabhan, A. Lips, "Mass transport in micellar surfactant solutions: 2. Theoretical modeling of adsorption at a quiescent interface", *Advances Colloid Interface Sci.* **119** (2006) 17-33.
84. Z. Mitrinova, S. Tcholakova, N. Denkov. "Control of Surfactant Solution Rheology Using Medium-Chain Cosurfactants". *Colloids Surf. A* **537** (2018) 173–184.
85. Z. Vinarov, V. Katev, D. Radeva, S. Tcholakova, N. Denkov. "Micellar Solubilization of Poorly Water-soluble Drugs: Effect of Surfactant and Solubilizate Molecular Structure". *Drug. Dev. Ind. Pharm.* **44** (2018) 677-686.
86. Z. Vinarov, V. Kutev, N. Burdzhiev, S. Tcholakova, N. Denkov, "Effect of Surfactant–Bile Interactions on the Solubility of Hydrophobic Drugs in Biorelevant Dissolution Media", *Mol. Pharm.* **559** (2018) 5741–5753.
87. Z. Vinarov, P. Dobрева, S. Tcholakova, „Effect of Surfactant Molecular Structure on Progesterone Solubilization“, *J. Drug. Deliv. Sci. Technology* **43** (2018) 44–49.

F. Kinetic properties of solid particles.

88. P. A. Kralchevsky, N. D. Denkov, I. B. Ivanov, A. D. Nikolov, "Attraction between Brownian Particles of Identical Charge in Colloid Crystals", *Chem. Phys. Lett.* **166** (1990) 452.
89. D. N. Petsev, N. D. Denkov, "Diffusion of Charged Colloidal Particles at Low Volume Fraction: Theoretical Model and Light Scattering Experiments", *J. Colloid Interface Sci.* **149** (1992) 329.
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