

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

Name **BALASHEV, KONSTANTIN TODOROV**
Address **“LJULIN 10” BL.101, VB, AP.68
SOFIA 1335, BULGARIA**
Telephone **(++359 2) 81 61 259**
Fax **(++359 2) 962 54 38**
E-mail **fhkb@chem.uni-sofia.bg**

Nationality Bulgarian
Date of birth 07,09,1967

WORK/TEACHING EXPERIENCE

- Dates (from – to) **1998-2000**
- Name and address of employer **Centre for Interdisciplinary Studies of Molecular Interactions (CISMI), University of Copenhagen, Denmark**
- Type of business or sector Bionanotechnology/ Studying lipid-lipase interactions and enzyme kinetics In Vivo applying Atomic force microscopy (AFM) and Scattering of synchrotron X-rays
- Occupation or position held **Post-Doctoral Associate**
- Main activities and responsibilities Research activities
- Dates (from – to) **2000-2001**
- Name and address of employer **University of Michigan, Ann Arbor, USA**
- Type of business or sector New Drug Delivery systems/ Studying interactions between dendritic polymers and model cell membrane systems for the purposes of developing new drug carriers for cancer therapeutics by applying Atomic force microscopy (AFM) and liquid cell.
- Occupation or position held **Post-Doctoral Associate**
- Main activities and responsibilities Research activities
- Dates (from – to) **2001-2003**
- Name and address of employer **Nanoscience Centre , University of Copenhagen, Denmark**
- Type of business or sector Bionanotechnology/ Studying enzyme reactions of protein hydrolysis In Vivo applying Atomic force microscopy (AFM)
- Occupation or position held **Research Assistant**
- Main activities and responsibilities Research activities
- Dates (from – to) **2003-2005**
- Name and address of employer **Drexel University, Philadelphia, USA**

- Type of business or sector
- Occupation or position held
- Main activities and responsibilities
 - Dates (from – to)
- Name and address of employer
 - Type of business or sector
 - Occupation or position held
- Main activities and responsibilities
 - Dates (from – to)
- Name and address of employer
 - Type of business or sector
 - Occupation or position held
- Main activities and responsibilities
 - Dates (from – to)
- Name and address of employer
 - Type of business or sector
 - Occupation or position held
- Main activities and responsibilities

Bionanotechnology/ Studying the mechanical response of single cells under mechanical loading using Atomic Force Microscopy.

Post-Doctoral Associate

Research activities

2005- 2008

Sofia University “St. Kliment Ohridski”, Faculty of Chemistry and Pharmacy, 1,James Bourchier, 1164 Sofia

Department of Physical chemistry/Laboratory of Biophysical chemistry

Chef Assistant Professor

Teaching and Research activities

2008- 2016

Sofia University “St. Kliment Ohridski”, Faculty of Chemistry and Pharmacy, 1,James Bourchier, 1164 Sofia

Department of Physical chemistry/Laboratory of Biophysical chemistry

Associate Professor

Teaching and Research activities

2016-

Sofia University “St. Kliment Ohridski”, Faculty of Chemistry and Pharmacy, 1,James Bourchier, 1164 Sofia

Department of Physical chemistry/Laboratory of Biophysical chemistry

Professor

Teaching and Research activities

EDUCATION AND TRAINING

- Dates (from – to)
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
 - Title of qualification awarded
- Level in national classification (if appropriate)
 - Dates (from – to)
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
 - Title of qualification awarded
- Level in national classification (if appropriate)
 - Dates (from – to)
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
 - Title of qualification awarded
- Level in national classification (if appropriate)
 - Dates (from – to)
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered

1982-1986

High School of Electrical and Automation engineering

Industrial Automation and Control systems

Technician

1988-1993

Sofia University, Faculty of Biology

Biotechnology

MSc

1988-1993

Technical University of Sofia, Faculty of Automation and Control systems

Bioengineering

MSc

1995-1999

Sofia University, Faculty of Chemistry and Pharmacy

Physical chemistry/ Monolayers of amphiphilic molecules studies at air/water interface applying Langmuir method for measuring the surface pressure and surface area and Surface potential method Enzyme and photochemical reactions occurring at the air/water interface applying surface pressure and barostat method.

- Title of qualification awarded
- Level in national classification (if appropriate)
 - Dates (from – to)
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

PERSONAL SKILLS AND COMPETENCES

Acquired in the course of life and career but not necessarily covered by formal certificates and diplomas.

MOTHER TONGUE

OTHER LANGUAGES

- Reading skills
- Writing skills
- Verbal skills

- Reading skills
- Writing skills
- Verbal skills

SOCIAL SKILLS AND COMPETENCES

Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.

ORGANISATIONAL SKILLS AND COMPETENCES

Coordination and administration of people, projects and budgets; at work, in voluntary work (for example culture and sports) and at home, etc.

TECHNICAL SKILLS AND COMPETENCES

With computers, specific kinds of equipment, machinery, etc.

PhD (Physical chemistry)

2015

Sofia University, Faculty of Chemistry and Pharmacy

Atomic Force Microscopy (AFM) with applications spanning from nanoscale (bio)catalysis and characterization of molecularly ordered nanostructures to molecular biology

Doctor of Sciences (Dr. Habil.)

BULGARIAN

ENGLISH

excellent
excellent
excellent

Russian

excellent
excellent
excellent

Excellent communication skills, easy adaptable to multicultural environments, team worker.

Head of the University laboratory of Atomic Force Microscopy with responsibilities for coordination and administration of the projects and budget of the Laboratory.

MOLECULAR ELECTRONICS, SUPRAMOLECULAR CHEMISTRY, BIO-NANOTECHNOLOGY, LANGMUIR-BLODGETT FILMS, ATOMIC FORCE MICROSCOPY, NANO CHEMISTRY.

EXPERIENCE WITH EXPERIMENTAL TECHNIQUES AND METHODS:

MONOLAYERS OF AMPHIPHILIC MOLECULES STUDIES AT AIR/WATER INTERFACE APPLYING LANGMUIR METHOD FOR MEASURING THE SURFACE PRESSURE AND SURFACE AREA AND SURFACE POTENTIAL ENZYME AND PHOTOCHEMICAL REACTIONS AT THE AIR/WATER INTERFACE APPLYING SURFACE PRESSURE AND BAROSTAT METHOD.

POLYMER MONOLAYERS STUDIES AT OIL/WATER INTERFACE APPLYING PENDANT DROP METHOD. LANGMUIR-BLODGETT (LB) FILMS AND ATOMIC FORCE MICROSCOPY (AFM).

STUDYING LIPID-LIPASE INTERACTIONS AND ENZYME KINETICS IN VIVO APPLYING ATOMIC FORCE MICROSCOPY (AFM) AND SCATTERING OF SYNCHROTRON X-RAYS

STUDYING INTERACTIONS BETWEEN DENDRITIC POLYMERS AND MODEL CELL MEMBRANE SYSTEMS FOR

THE PURPOSES OF DEVELOPING NEW DRUG CARRIERS FOR CANCER THERAPEUTICS BY APPLYING ATOMIC FORCE MICROSCOPY (AFM) AND LIQUID CELL.

STUDYING THE MECHANICAL RESPONSE OF SINGLE CELLS UNDER MECHANICAL LOADING USING ATOMIC FORCE MICROSCOPY.

DEVELOPMENT OF RESEARCH APPARATUSES AND DEVICES WITH ADEQUATE SOFTWARE AND HARDWARE, EXPERT COMPUTER SKILLS-; PROGRAMMING; EMBEDDED MICRO CONTROLLERS.

ARTISTIC SKILLS
AND COMPETENCES
Music, writing, design, etc.

OTHER SKILLS
AND COMPETENCES
Competences not mentioned above.

DRIVING LICENCE(S) Yes

ADDITIONAL INFORMATION

ANNEXES: Annex 1. List of publications,
Annex 2. Abstracts in conferences
Annex 3. Participation in conferences, congresses and seminars

Annex 1: List of publications

1. Panaiotov I, Ivanova T, **Balashhev K**, Proust J “Spreading kinetics of dimyristoylphosphatidylcholine liposomes at the air/water interface below and above the main phase-transition temperatures” COLLOIDS AND SURFACES A-PHYSICOCHEMICAL AND ENGINEERING ASPECTS 102: 159-165 SEP 13 1995
2. **Balashhev K**, Bois A, Proust JE, Ivanova T, Petkov I, Masuda S, Panaiotov I ”Comparative study of polyacryloylacetone monolayers at dichloromethane-water and air-water interfaces” LANGMUIR 13 (20): 5362-5367 OCT 1 1997
3. **Balashhev K**, Panaiotov I, Proust JE “Propagation of photoinduced surface pressure perturbation along a mixed benzospiropyran-octadecanol monolayer” LANGMUIR 13 (20): 5373-5377 OCT 1 1997
4. **Balashhev K**, Panaiotov I, Ivanova M, Petkov I, Proust JE, Boury F, Masuda S “Influence of pH and presence of Cu²⁺ ions on the properties of polyacryloylacetone (PAA) monolayers” JOURNAL OF DISPERSION SCIENCE AND TECHNOLOGY 18 (6-7): 661-681 1997
5. **Balashhev K**, Panaiotov I, Petkov I “Interfacial photochemical tautomerization in polyacryloylacetone monolayers” COLLOID AND POLYMER SCIENCE 276 (11): 984-991 NOV 1998
6. **Balashhev K**, Panchev N, Petkov I, Panaiotov I “Photochemical behaviour of polyacryloylacetone and polyethylacrylate monolayers at the air-water interface” COLLOID AND POLYMER SCIENCE 278 (4): 301-311 APR 2000

7. Zheliaskova A, Peeva I, **Balashhev K**, Panaiotov I, Petrov AG "Photoconductance effects in bilayer lipid membranes, containing amphiphilic hexadecylbenzospiropyrane derivative" MOLECULAR CRYSTALS AND LIQUID CRYSTALS 352: 471-477 2000
8. **Balashhev K.**, L. Nielsen, T. Callisen, A. Svendsen and T. Bjørnholm, AFM Visualisation of Lipid Bilayer Degradation due to Enzyme Action of Phospholipase A₂ and Humicola Lanuginosa Lipase" in "LIPASES AND LIPIDS: STRUCTURE, FUNCTION AND BIOTECHNOLOGICAL APPLICATIONS" (G. Kokotos, V. Constantinou-Kokotou) 117-126 (Crete University Press, 2000).
9. TR Jensen, K. Kjaer, PB Howes, A. Svendsen, **K. Balashhev**, N. Reitzel, T. Bjørnholm, "Model Systems for Biological Membranes Investigated by Grazing-incidence X-ray Diffraction and Specular Reflectivity" in "LIPASES AND LIPIDS: STRUCTURE, FUNCTION AND BIOTECHNOLOGICAL APPLICATIONS" (eds Kokotos, G. & Constantinou-Kokotou, V.) 127-139 (Crete University Press, 2000).
10. T. R. Jensen, K. Kjær, P. B. Howes, **K. Balashhev**, N. Reitzel, T. Bjørnholm, M. Ø. Jensen, G. H. Peters, and A. Svendsen "Lipase adsorption at the air/water interface and the crystallographic phase problem for X-ray reflectivity" ANNUAL PROGRESS REPORT OF THE CONDENSED MATTER PHYSICS AND CHEMISTRY DEPARTMENT, RISØ National Laboratory, Roskilde, Denmark, p.74, Edited by B. Lebech, February 2000,
11. T. R. Jensen, K. Kjær, P. B. Howes, A. Svendsen, **K. Balashhev**, N. Reitzel and T. Bjørnholm "Lipid-lipase interactions investigated using synchrotron x-ray scattering" ANNUAL PROGRESS REPORT OF THE CONDENSED MATTER PHYSICS AND CHEMISTRY DEPARTMENT, RISØ National Laboratory, Roskilde, Denmark, Edited by B. Lebech, p.75, February 2000,
12. **Balashhev K**, Jensen TR, Kjaer K, Bjornholm T "Novel methods for studying lipids and lipases and their mutual interaction at interfaces. Part I. Atomic force microscopy" BIOCHIMIE 83 (5): 387-397 MAY 2001
13. Jensen TR, **Balashhev K**, Bjornholm T, Kjaer K. "Novel methods for studying lipids and lipases and their mutual interaction at interfaces. Part II. Surface sensitive synchrotron X-ray scattering" BIOCHIMIE 83 (5): 399-408 MAY 2001
14. **Balashhev K**, Nielsen LK, Callisen TH Svendsen A, Bjornholm T " In situ Studies of single enzymes and enzyme kinetics by atomic force microscopy" PROBE MICROSCOPY, 2, 177-185, 2001
15. Reitzel N, Hassenkam T, **Balashhev K**, Jensen TR, Howes PB, Kjaer K, Fechtenkotter A, Tchegotareva N, Ito S, Mullen K, Bjornholm T "Langmuir and Langmuir-Blodgett films of amphiphilic hexa-peri-hexabenzocoronene: New phase transitions and electronic properties controlled by pressure" CHEMISTRY-A EUROPEAN JOURNAL 7 (22): 4894-4901 NOV 19, 2001
16. Jensen MO, Mouritsen OG, Jensen TR, Kjaer K, **Balashhev K**, Bjoernholm T, Peters GH "Preferred interfacial orientation and conformation of a lipase investigated by molecular dynamics simulations" *Biophysical journal*, **80** (1), (2001), 1364

17. Nielsen LK, **Balashhev K**, Callisen TH, Bjornholm T “Influence of product phase separation on phospholipase A(2) hydrolysis of supported phospholipid bilayers studied by force microscopy, *Biophysical journal*, 83 (5), (2002), 2617-2624.
18. **Balashhev K**, Gudmand M, Iversen L, Callisen TH, Svendsen A, Bjornholm T “*Humicola lanuginosa* lipase hydrolysis of mono-oleoyl-rac-glycerol at the lipid-water interface observed by atomic force microscopy“*Biochimica et Biophysica Acta: Biomembranes*, **1615 (1-2)**, (2002), 93-102
19. Jensen TR, Jensen MO, Reitzel N, **Balashhev K**, Peters GH, Kjaer K, Bjornholm T “Water in contact with extended hydrophobic surfaces: Direct evidence of weak dewetting “ *Physical Review Letters*, **90 (8)**, (2003), Art. No. 086101.
20. Rischel C, Axelsen B, **Balashhev K**, Callisen T “Single molecule surface enzymology” *Biophysical journal*, **84 (2)**: 125A-125A Part 2 Supplement S, FEB 2003.
21. **Balashhev K**, DiNardo N.J, Callisen Th.H., Svendsen A and T. Bjornholm "Atomic force microscope visualization of lipid bilayer degradation due to action of phospholipase A₂ and *Humicola lanuginosa* lipase" *Biochimica et Biophysica Acta: Biomembranes*, **1768**, (2007), 90–99.
22. **Balashhev K**, V. Atanasov, M. Mitewa , S. Petrova, T. Bjørnholm, Kinetics of degradation of dipalmitoylphosphatidylcholine (DPPC) bilayers as a result of vipoxin phospholipase A2 activity: An atomic force microscopy (AFM) approach, *Biochimica et Biophysica Acta: Biomembranes*, **1808**, (2011), 191–198.
23. **Balashhev K**, M. Gudmand, T. Heimburg and T. Bjørnholm, Measuring the liquid-gas line energy in Dipalmitoyl-sn-glycero-3-phosphocholine (DPPC) Langmuir monolayers combining Wide-Field Fluorescence Microscopy and Surface potential measurements, *Annuare De L'Universite De Sofia "St.Kliment Ohridski" Faculte De Chimie*, **102/103** (2011), 69-80.
24. **Balashhev K**, Tz. Ivanova, K Mircheva and I. Panaiotov, “Savinase proteolysis of insulin Langmuir monolayers studied by surface pressure and surface potential measurements accompanied by atomic force microscopy (AFM) imaging”, *Journal of Colloid and Interface Science*, **360 (2)**, (2011), 654-661.
25. **Balashhev K**, T. H. Callisen, A. Svendsen and T. Bjørnholm "Savinase action on Bovine Serum Albumin (BSA) monolayers demonstrated with measurements the air-water interface and liquid Atomic Force Microscopy (AFM) imaging" *Colloids Surf B Biointerfaces*. **88(2)**, (2011), 582.
26. M. Georgieva, K. Uzunova, **K. Balashhev**, G. Genova and G.Miloshev, How important are the higher-order chromatin structures for the proper gene expression? International scientific on-line journal Science & technologies, Publisher "Union of Scientists - Stara Zagora, Volume I, Number 1, 2011 Medicine,
<http://journal.sustz.com/VolumeI/Number1/Papers/MilenaGeorgieva2.pdf>
27. Georgieva, M., A. Roguev, **K. Balashhev**, J. Zlatanova, G. Miloshev, “Hho1p, the linker histone of *Saccharomyces cerevisiae*, is important for the proper chromatin organization in vivo”, *BBA-Gene regulatory mechanisms*, **1819(5)**, (2012) 366–374

28. S. D. Petrova, V. N. Atanasov, **K. Balashev** “Vipoxin and its components: structure – function relationship” *Volume 87 :Structural and Mechanistic Enzymology: 1st Edition Bringing Together Experiments and Computing* ed. Christov & Karabencheva-Christova, Elsevier, Academic press (2012)
29. S. I. Karakashev, P. Georgiev, **K. Balashev**, Foam production – Ratio between foaminess and rate of foam decay *Journal of Colloid and Interface Science*, **379(1)**, (2012), 144-147
30. Tsekov, R., Grozev, N.A., Delcheva, I.V., Ivanov, I.T. Karakashev, S.I, **K Balashev**, Delta-comb potential in modeling three-phase contact line (TPCL) on periodically patterned surfaces, *Journal of Physical Chemistry B*, **116 (44)**, (2012), 13248-13253
31. P. Georgiev, S. Angelova, A. Bojinova, C. Dushkin and **K. Balashev**, Acceleration of Gold Nanoparticle Growth by Europium (III) ions, *Nanoscience and Nanotechnology*, 12 eds E. Balabanoca, E. Mileva, Sofia, (2012), 56-58
32. L. Kolaklieva, V. Chitanov, R. Kakanakov, S. Russev, **K. Balashev**, Dependence of the electrical and morphological properties on the Ti and Al content in Mo-based ohmic contacts for III-V nitrides, 05/2012; DOI:10.1109/MIEL.2012.6222856 In proceeding of: 28th International Conference on Microelectronics, MIEL (2012)
33. B. Kostova, E. Kamenska1, D. Rachev, **K. Balashev**, S. Simeonova, G. Georgiev, "Polyzwitterionic copolymer nanoparticles loaded in situ with metoprolol tartrate: Synthesis, morphology and drug release properties", *Journal of Polymer Research*, **20(2)**, (2013), 1-8
34. S.I. Karakashev, P. Georgiev, **K. Balashev**, On the growth of pneumatic foams, *The European Physical Journal E*, **36**, (2013), 13.
35. B. Kostova, E.Kamenskaa, G. Momekov, D. Rachev, G. Georgiev, **K. Balashev** “Synthesis and Characterization of Novel Drug Delivery Nanoparticles Based on Polyzwitterionic Copolymers”, *European Polymer Journal*, **49(3)**, (2013), 637–645
36. B. Kostova, E.Kamenskaa, G. Momekov, D. Rachev, G. Georgiev, **K. Balashev** “Investigation of Copolymer (Vinyl Acetate -co-3-Dimethyl (Methacryloxyethyl) Ammonium Propane Sulfonate) Nanoparticles” *Journal of the University of Chemical Technology and Metallurgy*, **48(1)**, (2013) 12-16
37. R. D. Stanimirova, T. D. Gurkov, **K. Balashev**, P. A. Kralchevsky, S. D. S. Eddie, G. Pelan “Surface Pressure and Elasticity of Hydrophobin HFBII Layers on the Air-Water Interface: Rheology vs. Structure Detected by AFM Imaging “, *Langmuir*, **29(20)**, (2013), 6053–6067.
38. P.Georgiev, A. Bojinova, B. Kostova, D. Momekova, Th. Bjornholm, **K.Balashev** Implementing atomic force microscopy (AFM) for studying kinetics of gold nanoparticle's growth, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **434**, (2013), 154– 163.
39. D. Momekova, G. Momekov, J. Ivanova, I.Pantchev, E. Drakalska, N.Stoyanov, M. Guenova, A. Michova., **K. Balashev**, S. Arpadjan, M. Mitewa, S. Rangelovi, N. Lambov “In vitro evaluation of sterically stabilized liposomes as a drug delivery

platform for cytotoxic metal coordination compounds of salinomycin” *J. Drug Del. Sci. Tech.*, **23** (3), (2013), 215-223.

40. S. Krumova, M. Zhiponova, K. Dankov, V. Velikova, **K. Balashev**, T. Andreeva, E. Russinova, S. Taneva, Brassinosteroids regulate the thylakoid membrane architecture and the photosystem II function, *Journal of Photochemistry and Photobiology B: Biology*, **126** (2013) 97–104
41. P. Georgiev, A. Bojinova, and **K. Balashev**, New Approach for studying kinetics of gold nanoparticles growth with AFM, *Nanoscience and Nanotechnology*, **13** eds E. Balabanova, E. Mileva, Sofia, (2013), 87-90
42. T. Yordanova, I. Dakova, **K. Balashev** and I. Karadjova, Polymeric ion-imprinted nanoparticles for mercury speciation in surface waters, *Microchemical Journal*, **113** (2014) 42–47, <http://dx.doi.org/10.1016/j.microc.2013.11.008>
43. K. Mircheva, M. Gonnet, **K. Balashev**, Tz. Ivanova, F. Boury, and I. Panaiotov, “Properties of β -carotene and retinoic acid in mixed monolayers with DPPC and Solutol” ECIS 2013 Conference special issue of *Colloids and Surfaces A*, (2014) <http://dx.doi.org/10.1016/j.colsurfa.2013.12.046>
44. J. Angarska, D. Ivanova, A. Gerasimova and **K. Balashev** “Competitive adsorption of bovine serum albumin and n-dodecyl- β -D-maltoside in foam films” ECIS 2013 Conference special issue of *Colloids and Surfaces A*, (2014) <http://dx.doi.org/10.1016/j.colsurfa.2013.12.018>
45. P. Georgiev, N. Kaneva, A. Bojinova, K. Papazova, K. Mircheva and **K. Balashev** “Effect of gold nanoparticles on the photocatalytic efficiency of ZnO films” ECIS 2013 Conference special issue of *Colloids and Surfaces A*, **460** (2014), 240-247 <http://dx.doi.org/10.1016/j.colsurfa.2014.02.004>
46. Tz. Ivanova, K. Mircheva, **K. Balashev**, I. Minkov, P. Saulnier, I. Panaiotov, Interfacial behavior of lipid nanocapsules spread on model membrane monolayers, *Colloid and Polymer Science*, (2014), 292(6), 1307-1318 <http://dx.doi.org/10.1007/s00396-014-3180-5>
47. B. Kostova, S. Ivanova, **K. Balashev**, D. Rachev, D. Christova, Evaluation of Poly(2-Ethyl-2-Oxazoline) Containing Copolymer Networks of Varied Composition as Sustained Metoprolol Tartrate Delivery Systems, *AAPS PharmSciTech* **15** (4) (2014), 939-946, <http://dx.doi.org/10.1208/s12249-014-0120-0>
48. N. Mitova, G. Zhegova, M. Rashkova, M. Kostadinov, K. Balashev, T. Uzunov, Characteristics of dentin surfaces at in vitro excavation with different methods for minimal intervention by Atomic Force Microscopy (AFM) and Scanning Electron Microscopy (SEM), *International Journal of Information Research and Review*, **1(12)**, (2014), 239-245.
49. M. Georgieva, D. Staneva, K. Uzunova, T. Efremov, **K. Balashev**, M. Harata, G. Miloshev, The linker histone in *Saccharomyces cerevisiae* interacts with actin-related protein 4 and both regulate chromatin structure and cellular morphology, *The International Journal of Biochemistry & Cell Biology* **59** (2015) 182–192

50. Ivanova, T., Mircheva, K., **Balashhev, K.**, Panaiotov, I., Boury, F. Monolayer kinetic model of formation of β -cyclodextrin- β -carotene inclusion complex. *Colloids and Surfaces B: Biointerfaces*, **135** (2015) 542-548. DOI: 10.1016/j.colsurfb.2015.07.055
51. Stoichev, S., Krumova, S.B., Andreeva, T., Busto, J.V., Todinova, S., **Balashhev, K.**, Busheva, M., Goñi, F.M., Taneva, S.G. Low pH modulates the macroorganization and thermal stability of PSII supercomplexes in grana membranes *Biophysical Journal*, **108** (4), (2015) 844-853. DOI: 10.1016/j.bpj.2014.12.042
52. Gutzov, S., Stoyanova, P., **Balashhev, K.**, Danchova, N., Stoyanov, S. Preparation and optical properties of colloidal europium(III) diphenanthroline nitrate hydrate (2015) *Bulgarian Chemical Communications*, 47 (3), pp. 816-820.
53. Georgiev, P., Simeonova, S., Chanachev, A., Mihaylov, L., Nihtianova, D., **Balashhev, K.** Acceleration effect of copper(II) ions on the rate of citrate synthesis of gold nanoparticles, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **494**, (2016) 39-48. DOI: 10.1016/j.colsurfa.2015.12.031
54. Chanachev, A., Georgiev, P., Ivanova, Tz., **Balashhev, K.** Study of protein modified gold nanoparticles in bulk phase and at air/water interface (2015) *Chemistry*, 24 (6), pp. 863-876.
55. Panaiotov, I., Ivanova, Tz., **Balashhev, K.**, Grozev, N., Minkov, I., Mircheva, K. Interfacial reorganization of molecular assemblies used as drug delivery systems (2015) *Chemistry*, 24 (6), pp. 891-921.
56. Kandeve, M., Blaskov, V.N., Kostova, N.G., Stambolova, I.D., Balashhev, K.T., Vassilev, S., Eliyas, A., Shipochka, M. Comparative study of wear resistance of TiO₂ coatings with cerium and chromium additives (2015) *Journal of the Balkan Tribological Association*, 21 (4), pp. 857-865.
57. Kostova, B., Kamenska, E., Georgieva, D., **Balashhev, K.**, Rachev, D., Georgiev, G. Design and Concept of Polyzwitterionic Copolymer Microgel Drug Delivery Systems In Situ Loaded with Non-steroidal Anti-inflammatory Ibuprofen (2016) *AAPS PharmSciTech*, pp. 1-9. DOI: 10.1208/s12249-016-0503-5
58. **Balashhev, K.**, Stambolova, I., Blaskov, V., Georgiev, P., Simeonova, S., Vassilev, S., Eliya, A. Photocatalytically active Au/TiO₂ films deposited by two-step spray pyrolysis (2016) *Comptes Rendus de L'Academie Bulgare des Sciences*, 69 (3), pp. 269-274.
59. Georgieva, R., Mircheva, K., Vitkova, V., **Balashhev, K.**, Ivanova, T., Tessier, C., Koumanov, K., Nuss, P., Momchilova, A., Staneva, G. Phospholipase A₂-Induced Remodeling Processes on Liquid-Ordered/Liquid-Disordered Membranes Containing Docosahexaenoic or Oleic Acid: A Comparison Study (2016) *Langmuir*, 32 (7), pp. 1756-1770. DOI: 10.1021/acs.langmuir.5b03317
60. Chanachev, A., Simeonova, S., Georgiev, P., **Balashhev, K.**, Ivanova, T., Panaiotov, I. Monolayer kinetic model of formation of gold nanoparticles by reducing agents hexadecylaniline or bovine serum albumin (2016) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 508, pp. 1-7. DOI: 10.1016/j.colsurfa.2016.08.005

61. Tzvetkov, G., Tsyntsarski, B., **Balashov, K.**, Spassov, T. Microstructural investigations of carbon foams derived from modified coal-tar pitch (2016) *Micron*, 89, pp. 34-42. DOI: 10.1016/j.micron.2016.07.006
62. Mladenova, K., Petrova, S.D., Andreeva, T.D., Moskova-Doumanova, V., Topouzova-Hristova, T., Kalvachev, Y., **Balashov, K.**, Bhattacharya, S.S., Chakarova, C., Lalchev, Z., Doumanov, J.A. Effects of Ca²⁺ ions on bestrophin-1 surface films (2017) *Colloids and Surfaces B: Biointerfaces*, 149, pp. 226-232. DOI: 10.1016/j.colsurfb.2016.10.023

Annex 2 Abstracts in conferences

1. **Balashov K**, M Ivanova, I Petkov, I Panaiotov, "Influence of keto-enol tautomerization on rheological properties of monolayer of PAA at air-water interface" **7th International Conference on Organized Molecular Films, September 10-15, 1995, Ancona, Italy**
2. **Balashov K**, Bois A, Proust JE, Ivanova T, Petkov I, Masuda S, Panaiotov "Comparative study of polyacryloylacetone monolayers at dichloromethane-water and air-water interfaces" **9th International Conference on Surface and Colloid Science, 6-12 July, 1997, Sofia, Bulgaria**
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11. Iversen L., **K Balashev**, C. Nielsen LK Nielsen, Th Bjoernholm “Membrane-Protein Interactions and Small Scale Lateral Organization Studied with Atomic Force Microscopy” **7th International Conference on Nanometer scale Science and Technology and ECOOS 21 (21st European Conference on Surface Science) 21-28 June 2002, Malmo, Sweden**
12. Callisen Th, **K Balashev**, M Gudmand, A Svendsen, Th Bjoernholm “Combined studies of substrate-enzyme interactions by SPR and AFM” **at Biacore Symposium 2002, Chicago (Illinois, USA), May 5-8, 2002**
13. Priya Vaidyanathan, **Konstantin Balashev**, John N DiNardo, AFM-Based Cellular Probes: Imaging and Membrane Mechanics, **Drexel's Annual Research Day, Philadelphia, USA, May, 2004**
14. Y.Ocasio, **K. Balashev**, R. DiDio, N.J.DiNardo “Insulin Fibrillogenesis Studied by Atomic Force Microscopy”, **NSF Research Experience for Undergraduates program at the University of Pennsylvania, Philadelphia (PA, USA), July 2004**
15. M. Kandeve, V. Blaskov, I. Stambolova, K. Balashev, N. Kostova, Influence of deposition parameters of TiO₂ sprayed films on the abrasive wear resistance, **Proceedings of World Tribology Congress 2013, Torino, Italy, September 8 – 3, (2013)**

Annex 3 Participation in conferences, congresses and seminars

1. Lipases and Lipids 1999: Structure, Function and Biotechnological applications. **Santorini, Greece 6-8 May 1999**
2. 7-th International Conference on Nanometer scale Science and Technology and ECOOS 21 (21st European Conference on Surface Science) **Malmo (Sweden) 21-28 June 2002**
3. Medicon Valley Bioconference 2002 **Malmo, Sweden 8-10 October 2002**
4. CISMI (Centre for Interdisciplinary Studies of Molecular Interactions), **University of Copenhagen, Copenhagen, Denmark, January 1998**
5. MEMPHYS – Membrane and Statistical Physics Group, **Technical University of Denmark, Department of Chemistry, April 7, 1999**
6. Physical Chemistry 1, Centre for Chemistry and Chemical Engineering, **Lund University, Lund, Sweden, May 1999**
7. Chemistry Department, **University of Michigan, Ann Arbor, USA, July 2000**

8. Hahn-Meitner- Institute Berlin GmbH (HMI), **Berlin, Germany, May 2001**
9. Nanoscience Center, **University of Copenhagen, Copenhagen, Denmark, December 2002**
10. Department of Physics, **Drexel University, Philadelphia, USA, May 2004**
11. **XVII National Symposium Polymers 2012, Ribaritsa, Bulgaria**
12. Conference “**Advanced Functional Materials**” **5-8 September, 2012, Riviera, Bulgaria**