CURRICULUM VITAE

PERSONAL INFORMATION

Name	**MUSTAN-BORISOVA, FATMEGYUL SEZGIN**
Address	**3 SALZA STR., 5300 GABROVO, BULGARIA**
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Fax	
E-mail	**papimustan@gmail.com**
Nationality	Bulgarian
Date of birth	JULY 25, 1991

WORK EXPERIENCE

• Dates (from – to)	9 March 2021 – until now
• Name and address of employer	Sofia University "St. Kliment Ohridski"
• Type of business or sector	Chemical Engineering, Physical Chemistry, Colloids and Interface Science
• Occupation or position held	Scientific Researcher R1 project BG05M2OP001-1.002-0012
• Main activities and responsibilities	Experimental and theoretical investigations

• Dates (from – to)	1 November 2014 – until now
• Name and address of employer	Scientific Research Center (NIS) at Sofia University "St. Kliment Ohridski"
• Type of business or sector	Chemical Engineering, Physical Chemistry, Colloids and Interface Science
• Occupation or position held	Researcher R1
• Main activities and responsibilities	Work on projects – experimental and theoretical investigations, Molecular dynamics simulations

• Dates (from – to)	2010 – 2014
• Name and address of employer	Scientific Research Center (NIS) at Sofia University "St. Kliment Ohridski"
• Type of business or sector	Chemical Engineering, Physical Chemistry, Colloids and Interface Science
• Occupation or position held	Research Associate
• Main activities and responsibilities	Ostwald Ripening, Surface Rheology, Foams, Emulsions, Molecular dynamics simulations

EDUCATION AND TRAINING

• Dates (from – to)	1 February 2016 – 15 June 2022
• Name and type of organization providing education and training	Sofia University "St. Kliment Ohridski", Faculty of Chemistry and Pharmacy, Dept. of Chemical and Pharmaceutical Engineering
• Principal subjects/occupational skills covered	PhD Student in Physical Chemistry – Macrokinetics Topic of the PhD project: Interplay between bulk aggregates, surface properties and foam stability of nonionic surfactants

• Dates (from – to)	October 2013 – October 2014
• Name and type of organization providing education and training	Sofia University "St. Kliment Ohridski", Faculty of Chemistry and Pharmacy, Sofia, Bulgaria
• Principal subjects/occupational skills covered	Quantum Chemistry for Molecular Systems, Scientific Programming, Molecular Mechanics, Hybrid (QM//MM) Methods, Molecular Dynamics and Monte Carlo Simulations, Molecular Modelling with QSAR, Applied Computational Chemistry.
• Title of qualification awarded	M.Sc. in Chemistry - Computational Chemistry
• Level in national classification (if appropriate)	

• Dates (from – to)	October 2009 – July 2013
• Name and type of organisation providing education and training	Sofia University "St. Kliment Ohridski", Faculty of Chemistry and Pharmacy, Sofia, Bulgaria
• Principal subjects/occupational skills covered	Theoretical (Quantum) chemistry, Physics, Physical Chemistry, Thermodynamics, Organic and Inorganic Chemistry, Molecular modelling, Mathematics.
• Title of qualification awarded	B.Sc. of Chemistry with specialization in Computer Chemistry

• Dates (from – to)	September 2004 – June 2009
• Name and type of organisation providing education and training	Vasil Levski High School, Dulovo, Bulgaria
• Principal subjects/occupational skills covered	Chemistry, Biology, Mathematics, Physics, Informatics

MOTHER TONGUES **Bulgarian and Turkish**

OTHER LANGUAGES

ENGLISH

• Reading skills	EXCELLENT
• Writing skills	VERY GOOD
• Verbal skills	VERY GOOD

SOCIAL SKILLS AND COMPETENCES

Participant in Global top 100 meeting of scientists and artists ROCHE CONTINENTS, August 15-21, 2017, Salzburg, Austria

B. Sc. course "Access to and presentation of scientific information", teaching assistant, 2018-2021.

M. Sc. course "Written and spoken communication", teaching assistant, 2018-2021.

M. Sc. course "Pharmaceutical technology", teaching assistant, 2017.

M. Sc. course "Rheology of dispersions", teaching assistant, 2018-2019.

Supervision of students on industrial projects

ORGANIZATIONAL SKILLS AND COMPETENCES

MEMBER OF THE ORGANIZING COMMITTEE OF:

1. SECOND SPRING MEETING OF THE EUROPEAN NETWORK ON UNDERSTANDING GASTROINTESTINAL ABSORPTION-RELATED PROCESSES (UNGAP), FEBRUARY 12-13, 2019, SOFIA, BULGARIA.
2. 17TH EUROPEAN STUDENT COLLOID CONFERENCE, JUNE 18-22, 2019, VARNA, BULGARIA.
3. VOLUNTEER AT WEB SUMMIT 2022, 29 OCTOBER – 4 NOVEMBER 2022, LISBON, PORTUGAL.

TECHNICAL SKILLS AND COMPETENCE

WINDOWS SOFTWARE: MS-OFFICE, VMD, HYPERCHEM, GAUSSVIEW, SIGMA PLOT, ORIGIN, MATHEMATICA, IMAGE J

LINUX SOFTWARE: GROMACS, GAUSSIAN, AMBER

EXPERIENCE WITH RUNNING JOBS ON LOCAL SERVER CLUSTERS AND HPC SYSTEMS: SLURM AND TORQUE QUEUEING SCRIPTS

DRIVING LICENCE(S) Categories B and M

SCIENTIFIC INTERESTS

Molecular dynamics simulations of (bio)surfactants self-assembly, adsorption layers, drug solubilization
Experimental investigation of surfactant systems, foams and emulsions

PERSONAL INTERESTS

Traveling, volunteering, healthy food, cooking, mountaineering, outdoor activities, sporting, regenerative agriculture, natural cosmetics, gardening.

SCIENTIFIC PUBLICATIONS

1. F. Mustan, A. Ivanova, G. Madjarova, S. Tcholakova, N. Denkov, Molecular Dynamics Simulation of the Aggregation Patterns in Aqueous Solutions of Bile Salts at Physiological Conditions., *J. Phys. Chem. B* **2015**; 119, 15631–15643.
2. S. Tcholakova, F. Mustan, N. Pagureva, K. Golemanov, N. D. Denkov, E. G. Pelan, S. D. Stoyanov, Role of Surface Properties for the Kinetics of Bubble Ostwald Ripening in Saponin-stabilized Foams. *Colloids and Surfaces A* **2017;** 534, 16–25.
3. F. Mustan, A. Ivanova, S. Tcholakova, N. Denkov, Revealing the Origin of the Specificity of Calcium and Sodium Cations Binding to Adsorption Monolayers of Two Anionic Surfactants. *J. Phys. Chem. B* **2020**; 124, 10514–10528.
4. D. Gazolu-Rusanova, F. Mustan, Z. Vinarov, S. Tcholakova, N. Denkov, S. Stoyanov, J. W.J. de Folter, Role of Lysophospholipids on The Interfacial and Liquid Film Properties of Enzymatically Modified Egg Yolk Solutions. *Food Hydrocolloids* **2020**; 99, 105319.
5. F. Mustan, N. Politova-Brinkova, D. Rossetti, P. Rayment, S. Tcholakova. Oil soluble surfactants as efficient foam stabilizers. *Colloids Surf A* **2022**; 633, 127874.
6. F. Mustan, N. Politova-Brinkova, Z. Vinarov, D. Rossetti, P. Rayment, S. Tcholakova. Interplay between bulk aggregates, surface properties and foam stability of nonionic surfactants. *Adv Colloid Interface Sci* **2022**; 302, 102618.

PARTICIPATION IN SCIENTIFIC NETWORKS AND PROJECTS

1. Application Mol_surf, 1st call for access to VI-SEEM (Virtual Research Environment (VRE) in Southeast Europe and the Eastern Mediterranean (SEEM)) Resrouces and Services, 2017-2018.
2. Application Surf_prop, 2nd call for access to VI- SEEM (Virtual Research Environment (VRE) in Southeast Europe and the Eastern Mediterranean (SEEM)) Resrouces and Services, 2017-2019.
3. UNGAP COST Action CA16205 European Network on Understanding Gastrointestinal Absorption-Related Processes. October 2017 – April 2022.
4. Achieving an optimal environment for training, research, innovation and sustainable development of human capital in the field of chemical sciences: adapting education today to tomorrow, 2018-2020.
5. Project "Molecular dynamics modelling of the supramolecular organization of natural and synthetic surfactants", EUSMI Transnational Access programme for Supercomputing, Jureca, Juelich, Germany, 2021.
6. Project “Molecular dynamics modelling of the supramolecular organization of biological surfactants and drug molecules in solution”, PRACE-ICEI Call for computational resources from the Fenix Research Infrastructure, Piz-Daint, Zuerich, Switzerland, 2021-2022.
7. Industrial projects with Unilever – 7 projects, 2013 – until now, with Janssen – 1 project, November 2021 – until now.

TRAININGS AND SPECIALIZATIONS

1. Training school: “Prace Autumn School on Massively Parallel Architectures and Molecular Simulations”, September 2012, Sofia, Bulgaria.
2. Visiting researcher in Unilever R&D, February 2013, Portsunlight, UK.
3. „Introduction to parallel programming and optimization for Intel Xeon Phi architectures ", July 2016, Sofia, Bulgaria.
4. Training school „Simulation Environments For Life Sciences“, March 2017, Barcelona, Spain.
5. Visiting researcher, February – March 2018, Unilever R&D Colworth, UK.
6. 2nd school within the project EXTREME with topic “Modelling, Simulation and Artificial Intelligence in Colloid and Interface Science”, November 2021, online event.
7. Working visit, 02 September – 11 November 2022, Instituto de Tecnologia Química e Biológica António Xavier, Oeiras, Portugal.

SCIENTIFIC CONFERENCES

ORAL PRESENTATIONS

1. F. Mustan, A. Ivanova, S. Tcholakova, N. Denkov „Molecular dynamics study of the kinetics of adsorption of LAS molecules“, Two years Avitohol: advanced HPC applications“ , October 29-31, 2017, Panagyurishte, Bulgaria.
2. F. Mustan, A. Ivanova, S. Tcholakova “Molecular dynamics study of the kinetics of adsorption of LAS molecules”, International conference “e-infrastructures for excellent science in southeast Europe and the eastern mediterranean”, May 15-16, 2018, Sofia, Bulgaria.
3. F. Mustan, S. Tcholakova, , N. Borisova, K. Golemanov, N. Denkov, E. Pelan, S. D. Stoyanov “Role of surface rheological properties for the kinetics of bubble ostwald ripening in saponin-stabilized foams”, „Advanced materials” workshop, September 11-14, 2018, Duni, Bulgaria.
4. F. Mustan, N. Politova, Z. Vinarov, S. Tcholakova, D. Rosseti, P. Rayment „Surface and foam properties of nonionic surfactant solutions at high sugar concentration“, „Chemistry today for tomorrow“ , February 1, 2019, Sofia, Bulgaria.
5. Fatmegyul Mustan, Nadya Politova, Zahari Vinarov, Slavka Tcholakova, Damiano Rossetti, Pip Rayment „Surface and foam properties of nonionic surfactant solutions at high sugar concentration“ Horizon 2020 project “Materials Networking”: Advanced Materials workshop, July 21–25, 2019, St. St. Constantine and Helene, Bulgaria.
6. F. Mustan, A. Ivanova, S. Tcholakova „Molecular dynamics study of the kinetics of adsorption of LAS and SLES“, High Performance Computing, September 2-6, 2019, Borovets, Bulgaria.
7. F. Mustan, A. Ivanova, S. Tcholakova „Molecular dynamics study of the adsorption and aggregation of linear alkyl benzene sulfonate“, Twelfth Conference of the Euro-American Consortium for Promoting the Application of Mathematics in Technical and Natural Sciences, June 24-29, 2020, Virtual conference.
8. Fatmegyul Mustan-Borisova, Anela Ivanova, Slavka Tcholakova “Molecular dynamics simulations of fenofibrate solubilization into bile salt and fatty acids micelles”, PRACE Autumn School: Fundamentals of Biomolecular Simulations and Virtual Drug Development September 20-24, 2021, Virtual conference.
9. Fatmegyul Mustan-Borisova, Nadya Politova-Brinkova, Zahari Vinarov, Damiano Rosseti, Pip Rayment, Slavka Tcholakova “Interplay between bulk aggregates, surface properties and foam stabilization at high sugar concentration”, EUFOAM 2022, July 3-6 2022 Krakow, Poland.
10. Fatmegyul Mustan-Borisova, Petar Borisov, Zlatina Mitrinova, Slavka Tcholakova “Escin as nonionic and anoinic surfactant: effect of electrolytes on the solution properties”, EXTREME “Colloid and interface research & innovations” Workshop, July 11 – 14, 2022, Sts. Constantine and Helena, Bulgaria.
11. Fatmegyul Mustan-Borisova, Petar Borisov, Zlatina Mitrinova, Slavka Tcholakova “Escin as nonionic and anoinic surfactant: effect of electrolytes on the solution properties”, Extraction, purification, characterization and development of new products from medicinal and aromatic plants July 21 – 22, 2023, Borovets, Bulgaria

POSTER PRESENTATIONS

1. F. Mustan, S. Tcholakova, N. Pagureva, K. Golemanov, N. Denkov, E. Pelan and S. Stoyanov “Role of surface rheological properties for the kinetics of bubble ostwald ripening in saponin-stabilized foams”, Eufoam, June 9-13, 2018, Liege, Belgium.
2. F. Mustan, S. Tcholakova, , N. Borisova, K. Golemanov, N. Denkov, E. Pelan, S. D. Stoyanov “Role of surface rheological properties for the kinetics of bubble Ostwald ripening in saponin-stabilized foams”, „Chemistry today for tomorrow“ , February 1, 2019, Sofia, Bulgaria.
3. Fatmegyul Mustan, Nadya Politova, Zahari Vinarov, Slavka Tcholakova, Damiano Rossetti, Pip Rayment „Surface properties of non-ionic surfactant solutions at high sugar concentration“, European student colloid conference, June 18-22, 2019, Varna, Bulgaria.
4. Fatmegyul Mustan, Nadya Politova, Zahari Vinarov, Slavka Tcholakova, Damiano Rossetti, Pip Rayment „Surface properties of nonionic surfactant solutions at high sugar concentration“ „2nd Food Chemistry Conference: Shaping the Future of Food Quality, Safety, Nutrition and Health” – Seville, Spain, September 17-19, 2019.
5. F. Mustan, A. Ivanova, S. Tcholakova, N. Denkov “Revealing the origin of the specificity of calcium and sodium cations binding to adsorption monolayers of two anionic surfactants”, EUSMI/SoftComp Annual Meeting, May 31 – June 2, 2021, Online event.
6. F. Mustan, A. Ivanova, S. Tcholakova “Revealing the origin of the specificity of calcium and sodium cations binding to adsorption monolayers of two anionic surfactants” 35th Conference of the European Colloid and Interface Society (ECIS), September 5-10, 2021, Athens, Greece.
7. Fatmegyul Mustan-Borisova, Petar Borisov, Zlatina Mitrinova, Slavka Tcholakova “Escin as nonionic and anoinic surfactant: effect of electrolytes on the solution properties”, 97th ACS Colloid and Surface Science Symposium, June 4-7 2023, Raleigh, NC, USA.

8. Fatmegyul Mustana, Anela Ivanovab, Slavka Tcholakovaa, Zahari Vinarova “Molecular dynamics simulations of drugs solubilization into mixed bile salt/phospholipid micelles”, 97th ACS Colloid and Surface Science Symposium, June 4-7 2023, Raleigh, NC, USA.