

**CURRICULUM VITAE**  
**of**  
**Rumyana Dobрева Stanimirova**



**Personal Information:**

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**Address:** Lulin 1, bl.001, vh.A, ap.79, Sofia 1360, Bulgaria;  
**Date of Birth:** 04.09.1983  
**Birthplace:** Haskovo, Bulgaria;  
**Nationality:** Bulgarian  
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**Education:**

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**2014 – until now**

**Post Doc** in the Department of Chemical and Pharmaceutical Engineering (DCPE), Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”. Main activities: Experimental research in physical and colloidal chemistry. Teaching courses (exercises): Separation Processes in Disperse Systems.

**2010– 2014**

**PhD** in Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”.

Subject: “Rheology of Mixed Adsorption Layers of Proteins and Surfactants at Liquid Interfaces”

Supervisors: Prof. Krassimir Danov Ph.D., D.Sc., Assoc. Prof. Krastanka Marinova Ph.D.

**2006 – 2008**

**M.Sc.degree** in Colloidal systems in modern science and technology, Faculty of Chemistry and Pharmacy of Sofia University “ St. Kliment Ohridski”.

Diploma Thesis: “Surface Properties of NaL Solutions”.

Principal courses: Rheology of Disperse Systems; Disperse Systems and Separation Processes; Surfactants (Adsorption and Kinetics); Colloidal Crystals and Nanomaterials; Foams, Emulsions and Suspensions.

**2002 – 2006**

**B.Sc degree** in Chemistry, Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”.

Principal courses: Physical Chemistry, Colloidal Chemistry, Analytical Chemistry, Organic Chemistry, Biochemistry, Biophysical Chemistry, Transport Phenomena.

**1997 – 2002**

High school of science and mathematics “Boyan Petkanchin” –Haskovo, Bulgaria

Principal courses: German language and Biology.

### **Work experience:**

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2007 – until now

**Chemist**, Department of chemical and pharmaceutical engineering, Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”

Main activities and responsibilities: Experimental research in physical and colloidal chemistry.

2010 – until now

Teaching courses (exercises): Separation Processes in Disperse Systems.

### **Visits:**

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2015 - Visiting researcher (Host: Dr. Jordan Petkov) R&D KLK-Oleo, Kuala Lumpur, Malaysia

## Research interests:

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- Experimental methods for measuring of dynamic and equilibrium surface tension;
- Adsorption of proteins and surfactants on fluid and solid interfaces;
- Kinetics of Surfactant Adsorption;
- Surface rheology of fluid interfaces;
- Contact angles and wetting on solid surfaces;
- Atomic force microscopy (AFM);

## Scientific publications:

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1. Stanimirova, R.D.; Marinova, K. G.; Tcholakova, S. S.; Denkov, N. D.; Stoyanov, S. D.; Pelan, E. G. (2011) Surface Rheology of Saponin Adsorption Layers., *Langmuir*, 27, 12486-12498. [Link](#)
2. Marinova, K. G; Stanimirova, R. D.; Georgiev, M. T.; Alexandrov, N. A; Basheva, E. S.; Kralchevsky, P. A. (2013) Co-Adsorption of the Proteins  $\beta$ -casein and BSA in Relation to the Stability of Thin Liquid Films and Foams. *In Colloid and Interface Chemistry for Nanotechnology* (P.A. Kralchevsky, R. Miller and F. Ravera, Eds.). Taylor & Francis, New York, pp. 439–458. [Link](#)
3. Stanimirova, R. D.; Gurkov, T. D.; Kralchevsky, P. A.; Balashev, K. T.; Stoyanov, S. D.; Pelan, E. G. (2013) Surface Pressure and Elasticity of Hydrophobin HFBII Layers on the Air-Water Interface: Rheology vs. Structure Detected by AFM Imaging. *Langmuir*, 29, 6053–6067. [Link](#)
4. Stanimirova, R. D.; Marinova, K. G.; Danov, K. D.; Kralchevsky, P. A.; Basheva, E. B.; Stoyanov, S. D.; Pelan E. G. Competitive Adsorption of HFBII Hydrophobin and Surfactant: Sequential vs Parallel Adsorption and Effect of Surfactant Micelles. (2014) *Colloids and Surfaces A*. **457** (2014) 307–317. [Link](#)
5. Danov, K.D.; Stanimirova, R.D.; Kralchevsky,P.A.; Marinova, K.G.; Alexandrov, N.A.; Stoyanov, S.D.; Blijdenstein, T.B.J.; Pelan, E.G.; Capillary Meniscus Dynamometry – Method for Determining the Surface Tension of Drops and Bubbles with Isotropic and Anisotropic Surface Stress Distributions. (2015) *J. Colloid Interface Sci.* **440** (2015) 168–178. [Link](#)
6. Danov K.D., Stanimirova R.D., Kralchevsky P.A., Basheva E.S., Ivanova V.I., Petkov J.T.; Sulfonated methyl esters of fatty acids in aqueous solutions: Interfacial and micellar properties. (2015) *Journal of Colloid and Interface Science* 457 (2015) 307–318. [Link](#)

7. Dineff P., Ivanov I.B., Gospodinova D., Stanimirova R.D.; Efficiency Processing Parameter for Plasma-Aided Surface Impregnation: III. Plasma Surface Activation. 19TH International Symposium on Electrical Apparatus and Technologies, (2016), [SIELA] [Link](#)
8. Danov K.D., Stanimirova R.D., Kralchevsky P.A., Marinova K.G., Stoyanov S.D., Blijdenstein T.B.J., Cox A.R., Pelan E.G.; Adhesion of bubbles and drops to solid surfaces, and anisotropic surface tensions studied by capillary meniscus dynamometry. *Adv. Colloid Interface Sci.* **233** (2016) 223–239. [Link](#)
9. Ivanova V.I., Stanimirova R.D., Danov K.D., Kralchevsky P.A., Petkov J.T.; Sulfonated methyl esters, linear alkylbenzene sulfonates and their mixed solutions: Micellization and effect of Ca<sup>2+</sup> ions. *Colloids Surf. A*, **519** (2017) 87–97. [Link](#)

### **Participations in scientific and industrial projects:**

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1. Topic: “Oscillatory structural forces: New fundamental aspects and methods for obtaining ordered nanoparticle layers with applications in advanced technologies”  
Duration: 1.08.2009 – 15.06.2013; Sponsor: National Science Fund of Bulgaria;
2. Topic: “Identification, purification and characterization of novel natural emulsifiers”  
Duration: 1.12.2008 – 15.01.2011; Sponsor: Unilever;  
Supervisor: Prof. Nikolai Denkov Ph.D., D.Sc.
3. Topic: “Novel method for stabilization of foams using new proteins (hydrophobins) and cellulose particles”  
Duration: 1.08.2009 – 15.01.2013; Sponsor: Unilever;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.
4. Topic: “Stabilization of bubbles with saponins and other natural surfactants”  
Duration: 1.08.2009 – 15.01.2013; Sponsor: Unilever;  
Supervisor: Prof. Nikolai Denkov Ph.D., D.Sc.
5. Topic: “Bubble longevity to build understanding in long term control of bubble stability”  
Duration: 1.08.2011 – 15.01.2014; Sponsor: Unilever;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.
6. Topic: “Behavior of hydrophobin HFBII on oil-water interfaces and its role for the stabilization of thin liquid films and emulsions”  
Duration: 1.09.2012 – 15.01.2014; Sponsor: Unilever;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.  
Supervisor: Prof. Krassimir Danov Ph.D., D.Sc.
7. Topic: “Bubble – wall interactions in relation to hydrophobin stabilized foams”  
Duration: 1.07.2013 – 30.06.2014; Sponsor: Unilever;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.
8. Topic: “Understanding the long term control of bubbles stability using hydrophobins”  
Duration: 1.08.2011 – 15.01.2014; Sponsor: Unilever;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.

9. Topic: "Oily – Fatty Soil Adhesion & Removal"  
Duration: 3.09.2014 – 02.09.2015; Sponsor: Unilever,  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.
10. Topic: "Development of new methods and instruments for characterization of fluid interphases"  
Duration: 1.01.2010 – 31.12.2015; Sponsor: Krüss, Germany;  
Supervisor: Prof. Krassimir Danov Ph.D., D.Sc.
11. Topic: "Analytical model of core PC surfactant chassis and their sensitivity of physical and chemical instability."  
Duration: 01.06.2015 – 31.05.2018; Sponsor: Unilever, The Netherlands;  
Supervisor: Prof. Peter Kralchevsky Ph.D., D.Sc.

### **Presentations at conferences:**

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1. Rumyana D. Stanimirova, Krastanka G. Marinova, Krassimir D. Danov. „Surface Properties of NaL Solutions”, VIII National Conference of Chemistry for students and PhD - candidates 2009, Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”, 20 – 21 May 2009 Sofia, Bulgaria– Oral presentation.
2. Rumyana Stanimirova, Krastanka Marinova, Slavka Tcholakova, Nikolai Denkov, Simeon Stoyanov. „Surface Properties of Saponin Solutions”, IX National Conference of Chemistry for students and PhD - candidates 2010, Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”, 18-19 May 2010 Sofia, Bulgaria – Oral presentation.
3. Rumyana D. Stanimirova, Krastanka G. Marinova, Mihail T. Georgiev, Nikola A. Alexandrov, Elka S. Basheva, Peter A. Kralchevsky. „Adsorption of Mixed Solutions of  $\beta$  – casein and BSA in Relation to the Stability of Thin Liquid Films and Foams”, XII National Conference of Chemistry for students and PhD - candidates, Faculty of Chemistry and Pharmacy of Sofia University “St. Kliment Ohridski”, 15-17 May 2013 Sofia, Bulgaria – Oral presentation.
4. Rumyana Stanimirova, Theodor Gurkov, Peter Kralchevsky, Konstantin Balashev, Simeon Stoyanov, Eddie Pelan „Surface pressure and elasticity of hydrophobin HFBII layers on the air water interface: rheology versus structure detected by AFM imaging”, SIS, 20<sup>th</sup> International Symposium on Surfactants in Solution, June 22-27, 2014 Coimbra, Portugal – Oral presentation.
5. Krastanka Marinova, Rumyana Stanimirova, Mihail Georgiev, Nikola Alexandrov, Elka Basheva “Co-adsorption in solutions of BSA and  $\beta$  -casein studied by solution

exchange experiments with pendant bubbles and thin films”, COST D43 Symposium, 14 – 15 July 2010, Borovets, Bulgaria – Poster.

6. R. Stanimirova, K.G. Marinova, N. Alexandrov, T. Schörck, T. Winkler, C. Bilke-Krause „Impact of the SLES structure (number of EO-groups) and the additives on the surface rheology and foam drainage”, Eufoam Conference, 14-16 July 2010, Borovets, Bulgaria – Poster.
7. R. Stanimirova, K.G. Marinova, S. Tcholakova, N. D. Denkov, S. Stoyanov, E. Pelan, „Surface Rheology of Saponin Adsorption Layers“, 5<sup>th</sup> International Workshop Bubble and drop interfaces B&D, 20-25 May 2012, Kraków, Poland – Poster.
8. Rumyana D. Stanimirova, Krastanka G. Marinova, Krassimir D. Danov, Peter A. Kralchevsky, Simeon D. Stoyanov, Eddie G. Pelan, “Competitive adsorption of HFBII hydrophobin and surfactant: Sequential vs. parallel adsorption and effect of surfactant micelles”, ECIS 2013, 27<sup>th</sup> Conference of European Colloid and Interface Society, 1-6 September 2013, Sofia, Bulgaria – Poster.
9. Rumyana D. Stanimirova, Krastanka G. Marinova, Krassimir D. Danov, Peter A. Kralchevsky, Simeon D. Stoyanov, Eddie G. Pelan “Competitive adsorption of HFBII hydrophobin and surfactant: sequential vs parallel adsorption and effect of surfactant micelles”, SIS, 20<sup>th</sup> International Symposium on Surfactants in Solution, June 22-27, 2014 Coimbra, Portugal – Poster.

### **Participations in training courses and symposiums for students:**

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1. AFM training course, 2 July 2010, Sofia, Bulgaria
2. COST Action P21: "The Physics of Droplets: Basic and Advanced Topics", 13-14 July 2010, Borovets, Bulgaria
3. COST Action D43: "Fluids and Solid Interfaces", 12-15 April 2011, Sofia, Bulgaria
4. COST Action CM1101: “School on Surface Analytical Techniques Probing Macromolecules at Water-Solid Interfaces”, 2 – 5 April 2013, Geneva, Switzerland
5. ECIS training course: “Colloids and Medical Applications”, 2013, Sofia, Bulgaria

## **Personal skills and competences:**

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### **Languages:**

<b>Language</b>	<b>Reading</b>	<b>Speaking</b>	<b>Writing</b>
<b>Bulgarian</b>	Native	Native	Native
<b>English</b>	Very good	Good/B1	Good/B1
<b>German</b>	Good/A2	Good/A2	Good/A2

### **Technical skills:**

Work experience:

- Instruments for characterization of interphases : Krüss: K100, BP2, DSA100, DSA30;
- Langmuir trough 302LL/D1 (Nima Technology Ltd., UK);
- Atomic force microscopy – NanoScope Multi Mode V system (Brucker, Germany);
- Optical microscope – Axioplan (Zeiss, Germany);
  
- UV/VIS spectrometer UNICAM 5625 (Unikam, UK)

**Other:** Driving license