

# Radomir Slavchov, Assist. Professor

## Personal:



Date of Birth: October 16, 1982

Place of Birth: Sofia, Bulgaria

## Career:

1999-2007 Bachelor in chemistry, master and PhD in physical chemistry in University of Sofia

2003-2010 Chemist, assistant, assistant professor in University of Sofia

2008-2009 Leibniz Institute of Polymer Research Dresden Postdoctoral research

## Teaching experience

Lectures, seminars and laboratory practice for the courses Physical chemistry, Statistical thermodynamics, Colloid chemistry, Physicochemical hydrodynamics, Liquid surfaces, Nucleation, Capillary phenomena and wetting.

## Area of interest:

Surface science: surface electrochemistry, adsorption of ionic surfactants and simple salts, surface tension and mechanical moment, Langmuir monolayers, disjoining pressure, surface roughness, surface defects on solid surfaces.

Capillary phenomena: capillary shapes, capillary flows, capillary waves, wetting, roughness, wetting dynamics.

Physicochemical hydrodynamics: electrokinetic phenomena, thin liquid films, porous materials, foams.

Nucleation: nucleus formation, 2D nucleation, electrostatic effects, micellization.

Chemical thermodynamics (with accent on electrolyte solutions and semiconductors), statistical physics (with accent on surfactant adsorption and surface roughness), chemical kinetics, electrochemistry.

Applied mathematics, computing software (Maple).

**Keywords:** liquid surface electrochemistry, semiconductor surfaces, surface polarization, liquid films, mixed micellization, mixed adsorption.

**Publication:**

**2010**

**Quantum Hydrodynamics of Electron Gases**

Radomir Slavchov, Roumen Tsekov

*Journal of Chemical Physics* **132** (2010) art. no. 084505

**Streaming Potential Effect on the Drainage of Thin Liquid Films Stabilized by Ionic Surfactants**

Roumen Tsekov, Dilyana S. Ivanova, Radomir Slavchov, Boryan Radoev, Emil D. Manev, Anh V. Nguyen and Stoyan I. Karakashev

*Langmuir* **26** (2009) 4703-4708

**Comparative validation of the analytical models for the Marangoni effect on foam film drainage**

Stoyan I. Karakashev, Dilyana S. Ivanova, Zhana K. Angarska, Emil D. Manev, Roumen Tsekov, Borjan P. Radoev, Radomir I. Slavchov, Anh V. Nguyen

*Langmuir* **26** (2010) 4703-4708

**Justification of biexponential rate law of spreading over heterogeneous and rough surfaces**

Radomir Slavchov, Victoria Dutschk, Gert Heinrich, Boryan Radoev

*Colloids and Surfaces A: Physicochem. Eng. Aspects* **354** (2010) 252–260

**2008**

**On the theory of the charged heterogeneous surfaces. Electric interactions in Langmuir monolayers and semiconductor surfaces**

Radomir Slavchov

Thesis, Sofia 2008, Department of Physical Chemistry, Faculty of Chemistry at Sofia University (in Bulgarian)

**2007**

**Screened potential of a charged step defect on a semiconductor surface**

Radomir Slavchov, Tzanko Ivanov, Boryan Radoev

*J.Phys.: Condens. Matter* **19** (2007) 226005.

**Singular distributions approach**

Radomir Slavchov

graduation work, Sofia 2007, Department of Physical Chemistry, Faculty of Chemistry at Sofia University (in Bulgarian)

**Electrical Charged Heterogeneous Interfaces. Electrostatic Potential Distribution**

Radomir Slavchov, Boryan Radoev  
*Ann Univ Sofia* **100** (2008) 193.

**2006**

**Effect of the surface polarizability on the electrostatic screening in semiconductors**

Radomir Slavchov, Tzanko Ivanov. Boryan Radoev  
*J. Phys.: Condens. Matter* **18** (2006) 5873–5879

**2005**

**On the nature of Athabasca Oil Sands**

Jan Czarnecki, Boryan Radoev, Laurier L. Schramm, Radomir Slavchev  
*Advances in Colloid and Interface Science* **114–115** (2005) 53– 60

**Equilibrium profile and rupture of wetting film on heterogeneous substrates**

Radomir Slavchov, Boryan Radoev, Klaus Werner Stockelhuber  
*Colloids and Surfaces A: Physicochem. Eng. Aspects* **261** (2005) 135–140

**Surface Electrostatics of Heterogeneous Media. Mathematical Models, Problems and Methods**

T. Boev, B. Radoev and R. Slavchev  
Proceeding of the 10-th Jubilee National Congress on Theoretical and Applied Mechanics (ed. by Ya.Ivanov), Sept., 2005, Varna, p 423.

**2005-2010**

A number of electronic problem books for students, serving the Maple seminars for the theoretical courses in Sofia University (in Bulgarian and few in English).