

Mgr. Karel Šindelka

Address Horáčkova 15, 140 00, Praha 4
Phone number +420 724 855 701
E-mail karel.sindelka@natur.cuni.cz
Date and place of birth 11. 1. 1987 in Prague

Education

since 06/2014 Faculty of Science, Charles University
Doctoral study – branch of study: Physical chemistry
06/2011 – 06/2014 Faculty of Science, Charles University
Successfully finished Masters studies
Thesis: Self-assembly of polyelectrolytes in aqueous solutions (dissipative particle dynamics)
09/2007 – 06/2011 Faculty of Science, Charles University
Successfully finished Bachelor studies
Thesis: Computer simulations of conformational behaviour of block copolymers in selective solvents

Internship

07/2010 and 09/2012 Czech academy of sciences, Institute of chemical process fundamentals
09/2015 – 12/2015 Russian academy of sciences, Institute of Macromolecular compounds

Participation in current grants

Principal investigator of grant of the Grant agency of Charles University, ‘Study of complexation between nanoparticles and polyelectrolytes.’ (grant number 422216)

Participant in grant of the Grant agency of the Czech Republic (GACR), ‘Hierarchical approach to the study of solid-fluid equilibria in complex system: theory, simulation and experiment.’ (grant number 16-12291S)

Participant in grant of GACR, ‘Multidimensional distributions in branched and graft copolymers.’ (grant number 17-04258J)

Participant in grant of the Grant agency of the Czech academy of sciences, ‘Conformational behavior and (co)self-assembly of new double-hydrophilic and amphiphilic block polyelectrolytes. Thermodynamic and kinetic aspects.’ (grant number P106/12/0143), successfully finished in 2017

Publications (79 citations in WoS, h-index: 4)

Posel, Z.; Limpouchová, Z.; Šindelka, K.; Lísal, M.; Procházka, K.: Dissipative particle dynamics study of the pH-dependant behavior of poly(2-vinylpyridine)-block-poly(ethylene oxide) diblock copolymer in aqueous buffers. *Macromolecules*, Vol. 47, pp. 2503-2514 (2014), IF 5.835

Šindelka, K.; Limpouchová, Z.; Lísal, M.; Procházka, K.: Dissipative particle dynamics study of electrostatic self-assembly in aqueous mixtures of copolymers containing one neutral water-soluble block and one either positively or negatively charged polyelectrolyte block. *Macromolecules*, Vol. 47, pp. 6121-6134 (2014), IF 5.835

Šindelka, K.; Limpouchová, Z.; Lísal, M.; Procházka, K.: The electrostatic co-assembly in non-stoichiometric aqueous mixtures of copolymers composed of one neutral water-soluble and one polyelectrolyte (either positively or negatively charged) block: a dissipative particle dynamics study. *Phys. Chem. Chem. Phys.*, Vol. 18, pp. 16137-16151 (2016), IF 4.123

Procházka, K.; Šindelka, K.; Wang, X.; Limpouchová, Z.; Lísal, M.: Self-assembly and co-assembly of block polyelectrolytes in aqueous solutions. Dissipative particle dynamics with explicit electrostatics. *Mol. Phys.*, Vol. 114, pp. 3077-3092 (2016), IF 1.837

Šindelka, K.; Limpouchová, Z.; Štěpánek, M.; Procházka, K.: Stabilization of coated inorganic nanoparticles by amphiphilic copolymers in aqueous media. Dissipative particle dynamics study. *Colloid Polym. Sci.*, Vol. 295, pp. 1429-1441 (2017), IF 1.723

Lísal, M.; Šindelka, K.; Suchá, L.; Limpouchová, Z.; Procházka, K.: Dissipative particle dynamics simulations of polyelectrolyte self-assemblies. Methods with explicit electrostatics. *Polym. Sci. Ser. C*, Vol. 59, pp. 77-101 (2017), IF 2.556

Conference contributions

- 01/2015 MolSim 2015, Amsterdam, Netherlands (poster presentation)
- 05/2015 (Bio)Macromolecular Ionic Systems, Český Krumlov, Czech Republic (poster presentation)
- 11/2015 11th International Saint-Petersburg Conference of Young scientists, Saint Petersburg, Russia (oral presentation)
- 04/2016 DLSoftware 2016, London, United Kingdom (poster presentation)
- 05/2016 EUPOC 2016: Block copolymers for Nanotechnology Applications, Gargnano, Italy (poster presentation)
- 07/2016 80th Prague Meeting on Macromolecules: Self-Assembly in the World of Polymers, Prague, Czech Republic (poster presentation)
- 11/2016 QUITEL 2016, Montevideo, Uruguay (poster presentation)
- 05/2017 (Bio)Macromolecular Ionic Systems 2017, Hrubá Skála, Czech Republic (poster presentation)
- 08/2017 11th Triennial Congress of the World Association of Theoretical and Computational Chemists', Munich, Germany (poster presentation)
- 03/2018 2nd International Conference on Simulation Technology, Stuttgart, Germany (poster presentation)