

**Doc. RNDr. Miroslav Štěpánek, Ph.D.**  
**Seznam publikací**

**1. Původní práce v mezinárodních časopisech s IF**

- (1) Fanova, A.; Janata, M.; Filippov, S.K.; Šlouf, M.; Netopilík, M.; Mariani, A.; **Štěpánek, M.** Evolution of Structure in a Comb Copolymer-Surfactant Coacervate. *Macromolecules* **2019**, *52*(16), 6303-6310.
- (2) Murmiliuk, A.; Matějček, P.; Filippov, S.K.; Janata, M.; Šlouf, M.; Pispas, S.; **Štěpánek, M.** Formation of core/corona nanoparticles with interpolyelectrolyte complex cores in aqueous solution: insight into chain dynamics in the complex from fluorescence quenching. *Soft Matter* **2018**, *14*(37), 7578-7585.
- (3) Murmiliuk, A.; Košovan, P.; Janata, M.; Procházka, K.; Uhlík, F.; **Štěpánek, M.** Local pH and Effective pK of a Polyelectrolyte Chain: Two Names for One Quantity? *ACS Macro Lett.* **2018**, *7*(10), 1243-1247.
- (4) Fanova, A.; Šindelka, K.; Uchman, M.; Limpouchová, Z.; Filippov, S.K.; Pispas, S.; Procházka, K.; **Štěpánek, M.** Coassembly of Poly(N-isopropylacrylamide) with Dodecyl and Carboxyl Terminal Groups with Cationic Surfactant: Critical Comparison of Experimental and Simulation Data. *Macromolecules* **2018**, *51*(18), 7295-7308.
- (5) Hladysh, S.; Murmiliuk, A.; Vohlídal, J.; Havlíček, D.; Sedlařík, V.; **Štěpánek, M.**; Zedník, J. Combination of phosphonium and ammonium pendant groups in cationic conjugated polyelectrolytes based on regioregular poly(3-hexylthiophene) polymer chains. *Eur. Polym. J.* **2018**, *100*, 200-208.
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- (7) Kubát, P.; Henke, P.; Berzediová, V.; **Štěpánek, M.**; Lang, K.; Mosinger, J. Nanoparticles with Embedded Porphyrin Photosensitizers for Photooxidation Reactions and Continuous Oxygen Sensing. *ACS Appl. Mater. Interfaces* **2017**, *9*(41), 36229-36238.
- (8) Škvarla, J.; Raya, R.K.; Uchman, M.; Zedník, J.; Procházka, K.; Garamus, V.M.; Meristoudi, A.; Pispas, S.; **Štěpánek, M.** Thermoresponsive behavior of poly(N-isopropylacrylamide)s with dodecyl and carboxyl terminal groups in aqueous solution: pH-dependent cloud point temperature. *Colloid Polym. Sci.* **2017**, *295*(8), 1343-1349.
- (9) 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.* **2017**, *295*, 1429-1441.

- (10) Serkis-Rodzen, M.; Špírková, M.; Matějčík, P.; **Štěpánek, M.** Formation of linear and crosslinked polyurethane nanoparticles that self-assemble differently in acetone and in water. *Prog. Org. Coatings* **2017**, *106*, 119-127.
- (11) Baldíková, E.; Procházková, J.; **Štěpánek, M.**; Hajduová, J.; Pospíšková, K.; Šafaříková, M.; Šafařík, I. PMAA-stabilized ferrofluid/chitosan/yeast composite for bioapplications. *J. Magn. Mater.* **2017**, *427*, 29-33
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- (14) Delisavva, F.; Uchman, M.; Škvarla, J.; Wozniak, E.; Pavlova, E.; Šlouf, M.; Garamus, V.M.; Procházková, K.; **Štěpánek, M.** Influence of Corona Structure on Binding of an Ionic Surfactant in Oppositely Charged Amphiphilic Polyelectrolyte Micelles. *Langmuir* **2016**, *32(16)*, 4059-4065.
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- (19) Škvarla, J.; Zedník, J.; Šlouf, M.; Pispas, S.; **Štěpánek, M.** Poly(N-isopropyl acrylamide)-block-poly(n-butyl acrylate) thermoresponsive amphiphilic copolymers: Synthesis, characterization and self-assembly behavior in aqueous solutions. *Eur. Polym. J.* **2014**, *61*, 124-132.

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- (24) Uchman, M.; Gradzielski, M.; Angelov, B.; Tošner, Z.; Oh, J.; Chang, T.; **Štěpánek, M.**; Procházka, K. Thermodynamic and Kinetic Aspects of Coassembly of PEO-PMAA Block Copolymer and DPCI Surfactants into Ordered Nanoparticles in Aqueous Solutions Studied by ITC, NMR, and Time-Resolved SAXS Techniques. *Macromolecules* **2013**, *46*(6), 2172-2181
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## **2. Kapitoly v monografiích**

(1) **Štěpánek, M.** Fluorescence Spectroscopy Studies of Amphiphilic Block Copolymer Micelles in Aqueous Solutions, in: *Fluorescence Studies of Polymer Containing Systems – Springer Series on Fluorescence 16*, Procházka, K., Ed., Springer, **2016**.

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## **3. Abstrakty ve sbornících (dle WoS)**

(1) Kacířová, M.; Řežábková, L.; Šulc, M.; Heřman, P.; Večeř, J.; Štěpánek, M.; Obšilová, V.; Obšil, T. The 14-3-3 protein binding-dependent structural modulation of phosphatidylcholine. *FEBS J.* **2013**, *280*(SI), 137-137

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Veisová, D.; Řežábková, L.; Štěpánek, M.; Heřman, P.; Večer, J.; Obšil, T.; Obšilová, V. *FEBS J.* **2010**, 277, 186-186

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*Abst. Pap. Am. Chem. Soc.* **2006**, 232, 71-POLY

(6) Title: Self-assembly of polystyrene-block-poly(2-vinylpyridine)-block-poly(ethyleneoxide) in aqueous media  
Procházka, K.; Štěpánek, M.; Humpolíčková, J.; Matějčíček, P. *Abst. Pap. Am. Chem. Soc.* **2006**, 231, 417-COLL.

#### **4. Přednášky typu „invited speaker“**

(1) Štěpánek, M. Structure and properties of polymeric nanoparticles: Comparison of electron microscopy and scattering data. 12th Multinational Congress on Microscopy (MCM2015), 23. – 28. 8. 2015, Eger, Maďarsko.

#### **5. Grantové projekty**

(1) Asociace a interakce blokových polyelektrolytů ve vodných roztocích  
GAČR P203/02/D048 (2002–2005), postdoktorský projekt

(2) Kondenzace DNA: Monte-Carlo simulace, rozptyl světla, fluorescenční korelační spektroskopie in vitro a in vivo  
GA AV IAA400400621 (2006–2010), spoluřešitel



(3) Nanočástice na bázi komplexů hydrofilních blokových polyelektrolytů s iontovými surfaktanty

GAČR P208/10/0353 (2010–2012), hl. řešitel

(4) Stabilizace superparamagnetických nanočástic ve vodných roztocích pomocí amfifilních a hydrofilních blokových kopolymerů

GA ČR 14-11516S (2014-2016), hl. řešitel

(5) Konformační a asociační chování nových hydrofilně-hydrofilních a amphifilních blokových polyelektrolytů. Termodynamické a kinetické aspekty.

GA ČR P106/12/0143 (2012–2016), člen týmu

(6) Řízená asociace polyelektrolytových kopolymerů se surfaktanty ve vodných roztocích.“  
13-02938S (2013-2015), člen týmu

(7) Od konjugovaných polymerů odvozené materiály jako luminescenční chemosenzory.

GA ČR 17-05318S (2017–2019), člen týmu

(8) Nanomateriály založené na interakci trojblokových polymerů s makroionty a dalšími atypickými ionty.

GA ČR 19-13458S (2019–2021), člen týmu

(9) Řízení enkapsulace a uvolňování změnou ionizace a multivalentními interakcemi se supramolekulárními polymerními nosiči.

GA ČR 19-10429S (2019–2021), člen týmu

(10) Racionální design pokročilých měkkých funkčních materiálů řízený pokročilou NMR spektroskopií pevného stavu a vysoce výkonnou elektronovou mikroskopií

GA ČR 20-01233S (2020–2022), člen týmu

## **6. Kvalifikační práce**

Disertační práce: *Self-Assembly of Amphiphilic Block Copolymers in Solution*, **2011**

Habilitační práce: *Block Polyelectrolyte Micelles in Aqueous Media. Fluorometric and Light Scattering Studies of the Shell Behavior*, **2001**

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Doc. RNDr. Miroslav Štěpánek, Ph.D.