Anastasiia Murmiliuk

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Publications 8
Citations 14
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WORK EXPERIENCE

Research Fellow
Department of Physical and Macromolecular Chemistry, Charles University
March 2019 – Present *Prague, Czech Republic*

EDUCATION

- **Ph.D. in Physical Chemistry**
  Faculty of Science, Chares University
  PhD thesis: “Multidimensional characterization of polyelectrolytes and interpolyelectrolyte complexes in aqueous solutions”
  Supervisor: *Prof. RNDr. Miroslav Štěpánek, Ph.D.*
  Oct. 2016 – Present *Prague, Czech Republic*
- **MSc. in Chemistry**
  Faculty of Chemistry, St. Petersburg State University
  Master thesis: “Polymer-flavonoid conjugates”
  Supervisor: *Doc. Nina s. Domnina, Ph.D.*
  Sep. 2011 – June 2016 *St Petersburg, Russia*
- **General Education**
  Secondary school №473 with emphasis of art
  Sep. 2001 – May 2011 *St. Petersburg, Russia*

AWARDS & CERTIFICATES

- **Diploma Cum Laude**
  June 2016 St. Petersburg State University
- **Gold medal "For special successes in study”**
  May 2011 St. Petersburg secondary school №473
- **Travel Awards**
  Nov. 2019 *“Okinawa Colloids 2019”*
  Oct. 2019 *“SoftComp&EUSMI Annual Meeting 2019”*
  May 2018 *“SoftComp&EUSMI Annual Meeting 2018”*

LANGUAGES

Russian - **native**
English – **B2**
Czech – **A2**
French – **A1**

RESEARCH INTERESTS

- Association of polymers in solution
- Polyelectrolytes
- Targeted drug delivery
- Organic synthesis

INTERNSHIPS

Technical University of Berlin
Research group of Prof. Dr. Michael Gradzielski
Nov.-Dec. 2017 *Berlin, Germany*

GRANT ACTIVITY (AS PRINCIPAL INVESTIGATOR)

- “Solubilization and release of low molar-mass compounds from multicompartment nanoparticles with soft hydrophobic core”
  Grant Agency of the Charles University,
  project No. 1375219, 2 years (ca. 9.500€/year)
  Jan. 2019 – Dec. 2020 *Prague, Czech Republic*
- “Contrast variation studies of the internal structure of the multicompartment micelles with soft poly(lauryl acrylate) core” **European Soft Matter Infrastructure,**
  proposal E190600299, 3 days of SANS beam time, MLZ, KWS-2 (ca. 4.000 €/day)
  Feb. 2020 *Garching, Germany*

WORK AT LARGE SCALE FACILITIES

- **Small-angle X-ray scattering (SAXS)**
  - the beamline P12 at the Petra III storage ring at DESY (Deutsches Elektronen-Synchrotron)
    May 2017 *Hamburg, Germany*
  - the high brilliance beamline ID02 at ESRF
    Nov. 2017 *Grenoble, France*
- **Small-angle neutron scattering**
  experiments using KWS-2 instrument at MLZ
  Feb. 2020 *Munich, Germany*
- **Neutron spin-echo**
  experiments using J-NSE instrument at MLZ
  Feb. 2019 *Munich, Germany*

SCIENTIFIC SKILLS

- **Spectroscopy**
  Fluorometry (steady-state, time-resolved), NMR, IR, UV-vis
- **Microscopy**
  Atomic force microscopy,
  Transmission Electron Microscopy
- **Scattering techniques**
  light, X-ray, neutron
- **Calorimetry**
  Isothermal Titration Calorimetry, Differential Scanning Calorimetry
- **Basic programming in Python**

List of publications

1. **Murmiliuk, A.**; Filippov, S. K.; Rud, O.; Košovan P.; Tošner, Z.; Šlouf, M.; Radulescu, A.; Skandalis, A.; Pispas S.; Štěpánek M.
   "Reversible multilayered vesicle-like structures with fluid hydrophobic and interpolyelectrolyte layers"
   ChemRxiv. Preprint **2020**
   doi: **10.26434/chemrxiv.13365659.v1**

2. Lunkad, R.; **Murmiliuk, A.**; Tošner, Z.; Štěpánek, M.; Košovan, P.
   "Role of pK_A in charge regulation and conformation of various peptide sequences"
   Submitted to Polymers (MDPI), **2020**

3. Lunkad R.; **Murmiliuk, A.**; Hebbeker P.; Boublík M.; Tošner Z.; Štěpánek M.; Košovan P.
   "Quantitative prediction of charge regulation in oligopeptides"
   Molecular Systems Design & Engineering, **2021**
   doi: **10.1039/D0ME00147C**

4. Skandalis A.; **Murmiliuk, A.**; Štěpánek M.; Pispas S.
   "Physicochemical evaluation of insulin complexes with QPDMAEMA-*b*-PLMA-*b*-POEGMA cationic triblock terpolymer micelles"
   Polymers **2020**, *12*(2), 309
   doi: **10.3390/polym12020309**

5. Hladysh, S.; **Murmiliuk, A.**; Vohlídal, J.; Zedník J.
   "Attachment of a 1,8-naphthalimide moiety to a conjugated polythiophene efficiently improves the sensing abilities of naphthalimide-based materials"
   Macromolecular Chemistry and Physics **2019**, *220*, 1800436
   doi: **10.1002/macp.201800436**

6. **Murmiliuk, A.**; Matějíček, 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**, 7578-7585 (cover page)
   doi: **10.1039/C8SM01174E**

7. **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 Letters***. 2018**, *7* (10), 1243–1247.
   doi: **10.1021/acsmacrolett.8b00484**

8. 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"
   European Polymer Journal **2018**, *100*, 200-208.
   doi: **10.1016/j.eurpolymj.2018.01.029**