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Dr. Spyridon Varlas, Research Associate, MRSC

Department of Chemistry, University of Sheffield, Sheffield, S3 7HF, UK

Email address: s.varlas@sheffield.ac.uk

Personal webpage: <https://spyridonvarlas.com>, Twitter: @s_varlas_chem

Google Scholar: <http://scholar.google.gr/citations?user=9Hs0N4sAAAAJ&hl=en>

LinkedIn: <https://www.linkedin.com/in/spyridon-varlas-793b73b0>

ORCID: [0000-0002-4171-7572](https://orcid.org/0000-0002-4171-7572), ResearcherID: [O-2975-2016](https://orcid.org/O-2975-2016), Scopus ID: [57113719900](https://orcid.org/57113719900)

EDUCATION:

2018 – 2020 Ph.D. in Chemistry

School of Chemistry, University of Birmingham, Birmingham, United Kingdom

2016 – 2018 Ph.D. in Chemistry (*registration transferred to University of Birmingham*)

Department of Chemistry, University of Warwick, Coventry, United Kingdom

Ph.D. Thesis: “*Tuning the membrane properties of functional polymersomes developed by aqueous polymerization-induced self-assembly (PISA)*”

Supervisor: Prof. Rachel K. O’Reilly

2014 – 2016 M.Sc. in Polymer Science – (Grade: 9.78/10 – 1st class)

Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece

Master’s Thesis: “*Synthesis, characterization and self-assembly of stimuli-responsive copolymers of poly(ethylene oxide), poly(L-histidine) and poly(L-cysteine) for the encapsulation of anticancer drugs and their controlled release*”

Supervisor: Prof. Hermis Iatrou

2010 – 2014 B.Sc. in Chemistry – (Grade: 7.98/10)

Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece

Diploma Thesis: “*Encapsulation of anticancer drugs into polypeptide-based nanostructures*”

Supervisor: Prof. Hermis Iatrou

PROFESSIONAL EXPERIENCE:

Sep 2021 – Research Associate

Department of Chemistry, University of Sheffield, Sheffield, United Kingdom

Supervisor: Prof. Steven Armes

Jul 2020 – Research Fellow

Jun 2021 Department of Chemistry, University College London (UCL), London, United Kingdom

Supervisor: Prof. Giuseppe Battaglia

TEACHING AND MENTORING EXPERIENCE:

- Teaching Assistant, School of Chemistry, University of Birmingham, UK, *Courses:* Organic Chemistry II Practical Demonstrating (October 2018 – December 2018), Organic Chemistry III Practical Demonstrating (February 2019), Year 3 Mini-Project on Polymer Chemistry Practical Demonstrating and Marking (November 2019)
- Teaching Assistant, Department of Chemistry, University of Warwick, UK, *Course:* Inorganic Chemistry III Practical Demonstrating (October 2016 – December 2016)
- Course Certificate on “Preparing to Teach in Higher Education” by University of Warwick, UK (November 2016)
- During my Ph.D. studies at the School of Chemistry, University of Birmingham (UK), I have co-mentored 3 Ph.D. students, 3 M.Sc. students and 1 B.Sc. summer project student.
- During my M.Sc. studies at the Department of Chemistry, National and Kapodistrian University of Athens (Greece), I had co-mentored 2 B.Sc. diploma project students.

OUTREACH ACTIVITY AND PROFESSIONAL SERVICE:

- Presider for the ACS PMSE Division at the ACS Fall 2021 National Meeting (August 2021)
- Ambassador of the *Society of Chemical Industry* (SCI) (May 2021 – present)
- Registered UK STEM Ambassador – over 15 hours of service (June 2020 – present)
- Member of UCL’s *Ask the Expert* outreach programme (February 2021 – June 2021)
- Member of UCL’s organizing team for the *Pint of Science 2021* festival (December 2020 – May 2021)
- Member of the Chemistry Zone for *I’m a Scientist, Stay at Home* online STEM activity (May 2020 – July 2020)

- Reviewer for the following scientific journals: *Journal of the American Chemical Society (ACS)*, *ACS Macro Letters (ACS)*, *Macromolecules (ACS)*, *Polymers (MDPI)* and *Nanomaterials (MDPI)*
- Invited Guest Editor for *Polymers (MDPI)* (November 2020 – June 2021)

AWARDS AND FUNDING:

- **Macro Group UK Jon Weaver PhD Prize 2020** (August 2021)
- **2020/21 Zouhair Atassi PhD Prize**, School of Chemistry, University of Birmingham (July 2021)
- **Katharine Burr Blodgett Award 2021**, Joint Colloids Group (May 2021)
- **2021 JEOL USA Image Contest Winner** (May 2021)
- **Post-Doctoral Fellowship** provided by the Engineering and Physical Sciences Research Council (EPSRC) (Grant No. EP/R024723/1) (July 2020 – present)
- **Best Poster Prize** at the Macro Group UK Young Researchers Meeting (YRM) 2020 (June 2020)
- **Excellence in Graduate Polymer Research Award**, ACS POLY Division (March 2020)
- **Ottewill International Travel Scholarship 2020** to attend the ACS Spring 2020 National Meeting & Expo in Philadelphia, PA, USA (March 2020)
- **Biomaterials & Soft Matter Best Poster Prize (RSC)** at the 14th International Conference on Materials Chemistry (MC14) in Birmingham, UK (July 2019)
- **Macro Group UK DH Richards Memorial Travel Bursary** to attend 2019 Polymers Gordon Research Conference (GRC) in South Hadley, MA, USA (June 2019)
- **Ph.D. Scholarship** provided by the European Research Council (ERC) Consolidator Grant (Grant No. 615142) (October 2016 – June 2020)
- **Distinction Award** from the Hellenic Ministry of Education, Lifelong Learning and Religious Affairs (October 2010)

LIST OF PUBLICATIONS:

24. Miclotte, M. P. J.; Reynolds, C. D.; **Varlas, S.**; Thomas, M.; Rashid, B.; Chapman, E.; O'Reilly, R. K. *Manuscript in preparation.*
23. ***Varlas, S.**; Maitland, G. L.; Derry, M. J. Protein-, (Poly)peptide-, and Amino Acid-Based Nanostructures Prepared via Polymerization-Induced Self-Assembly. *Polymers*, **2021**, *13*, 2603. ([link](#))
22. Miclotte, M. P. J.; Lawrenson, S. B.; **Varlas, S.**; Rashid, B.; Chapman, E.; O'Reilly, R. K. Tuning the Cloud-Point and Flocculation Temperature of Poly(2-(diethylamino)ethyl methacrylate)-Based Nanoparticles via a Postpolymerization Betainization Approach. *ACS Polymers Au*, **2021**, *1*, 47-58. ([link](#))
21. †**Varlas, S.**; †Hua, Z.; Jones, J. R.; Thomas, M.; Foster, J. C.; O'Reilly, R. K. Complementary Nucleobase Interactions Drive the Hierarchical Self-Assembly of Core-Shell Bottlebrush Block Copolymers toward Cylindrical Supramolecules. *Macromolecules* **2020**, *53*, 9747-9757. ([link](#))
20. †Foster, J. C.; †Grocott, M. C.; Arkinstall, L. A.; **Varlas, S.**; Redding, M. J.; Grayson, S. M.; O'Reilly, R. K. It is Better with Salt: Aqueous Ring-Opening Metathesis Polymerization at Neutral pH. *J. Am. Chem. Soc.* **2020**, *142*, 13878-13885. ([link](#))
19. **Varlas, S.**; Lawrenson, S. B.; Arkinstall, L. A.; O'Reilly, R. K.; Foster, J. C. Self-assembled nanostructures from amphiphilic block copolymers prepared via ring-opening metathesis polymerization (ROMP). *Prog. Polym. Sci.* **2020**, *107*, 101278. ([link](#))
18. Keogh, R.; Blackman, L. D.; Foster, J. C.; **Varlas, S.**; O'Reilly, R. K. The Importance of Cooperativity in Polymer Blending: Toward Controlling the Thermoresponsive Behavior of Blended Block Copolymer Micelles. *Macromol. Rapid Commun.* **2020**, *41*, 1900599. ([link](#))
17. Jimaja, S.; **Varlas, S.**; Xie, Y.; Foster, J. C.; Taton, D.; Dove, A. P.; O'Reilly, R. K. Nickel-Catalyzed Coordination Polymerization-Induced Self-Assembly of Helical Poly(Arylisocyanide)s. *ACS Macro Lett.* **2020**, *9*, 226-232. ([link](#))
16. **Varlas, S.**; Keogh, R.; Xie, Y.; Horswell, S. L.; Foster, J. C.; O'Reilly, R. K. Polymerization-Induced Polymersome Fusion. *J. Am. Chem. Soc.* **2019**, *141*, 20234-20248. ([link](#))
15. †Karatzas, A.; †Haataja, J.; Skoulas, D.; Bilalis, P.; **Varlas, S.**; Apostolidi, P.; Sofianopoulou, S.; Stratikos, E.; Houbenov, N.; Ikkala, O.; Iatrou, H. Macromolecular Architecture and Encapsulation of the Anticancer Drug Everolimus Control the Self-Assembly of Amphiphilic Polypeptide-Containing Hybrids. *Biomacromolecules* **2019**, *20*, 4546-4562. ([link](#))
14. **Varlas, S.**; Foster, J. C.; O'Reilly, R. K. Ring-opening metathesis polymerization-induced self-assembly (ROMPISA). *Chem. Commun.* **2019**, *55*, 9066-9071. ([link](#))
13. **Varlas, S.**; Foster, J. C.; Georgiou, P. G.; Keogh, R.; Husband, J. T.; Williams, D. S.; O'Reilly, R. K. Tuning the membrane permeability of polymersome nanoreactors developed by aqueous emulsion polymerization-induced self-assembly. *Nanoscale* **2019**, *11*, 12643-12654. ([link](#))

12. **Varlas, S.**; Foster, J. C.; Arkinstall, L. A.; Jones, J. R.; Keogh, R.; Mathers, R. T.; O'Reilly, R. K. Predicting Monomers for Use in Aqueous Ring-Opening Metathesis Polymerization-Induced Self-Assembly. *ACS Macro Lett.* **2019**, *8*, 466-472. ([link](#))
11. Foster, J. C.; **Varlas, S.**; Couturaud, B.; Coe, Z.; O'Reilly, R. K. Getting into Shape: Reflections on a New Generation of Cylindrical Nanostructures' Self-Assembly using Polymer Building Blocks. *J. Am. Chem. Soc.* **2019**, *141*, 2742-2753. ([link](#))
10. †Couturaud, B.; †Georgiou, P. G.; **Varlas, S.**; Jones, J. R.; Arno, M. C.; Foster, J. C.; O'Reilly, R. K. Poly(Pentafluorophenyl Methacrylate)-Based Nano-Objects Developed by Photo-PISA as Scaffolds for Post-Polymerization Functionalization. *Macromol. Rapid Commun.* **2019**, *40*, 1800460. ([link](#))
9. **Varlas, S.**; Georgiou, P. G.; Bilalis, P.; Jones, J. R.; Hadjichristidis, N.; O'Reilly, R. K. Poly(Sarcosine)-Based Nano-Objects with Multi-Protease Resistance by Aqueous Photoinitiated Polymerization-Induced Self-Assembly (Photo-PISA). *Biomacromolecules* **2018**, *19*, 4453-4462. ([link](#))
8. Foster, J. C.; †**Varlas, S.**; †Couturaud, B.; Jones, J. R.; Keogh, R.; Mathers, R. T.; O'Reilly, R. K. Predicting Monomers for use in Polymerization-Induced Self-Assembly. *Angew. Chem. Int. Ed.* **2018**, *57*, 15733-15737. ([link](#))
7. **Varlas, S.**; Blackman, L. D.; Findlay, H. E.; Reading, E.; Booth, P. J.; Gibson, M. I.; O'Reilly, R. K. Photoinitiated Polymerization-Induced Self-Assembly in the Presence of Surfactants Enables Membrane Protein Incorporation into Vesicles. *Macromolecules* **2018**, *51*, 6190-6201. ([link](#))
6. Foster, J. C.; **Varlas, S.**; Blackman, L. D.; Arkinstall, L. A.; O'Reilly, R. K. Ring-Opening Metathesis Polymerization in Aqueous Media using a Macroinitiator Approach. *Angew. Chem. Int. Ed.* **2018**, *57*, 10672-10676. ([link](#))
5. †**Varlas, S.**; †Blackman, L. D.; Arno, M. C.; Houston, Z. H.; Fletcher, N. L.; Thurecht, K. J.; Hasan, M.; Gibson, M. I.; O'Reilly, R. K. Confinement of Therapeutic Enzymes in Selectively Permeable Polymer Vesicles by Polymerization-Induced Self-Assembly (PISA) Reduces Antibody Binding and Proteolytic Susceptibility. *ACS Cent. Sci.* **2018**, *4*, 718-723. ([link](#))
4. Liarou, E.; **Varlas, S.**; Skoulas, D.; Tsimblouli, C.; Sereti, E.; Dimas, K.; Iatrou, H. Smart polymersomes and hydrogels from polypeptide-based polymer systems through α -amino acid N-carboxyanhydride ring-opening polymerization. From chemistry to biomedical applications. *Prog. Polym. Sci.* **2018**, *83*, 28-78. ([link](#))
3. Blackman, L. D.; **Varlas, S.**; Arno, M. C.; Fayer, A.; Gibson, M. I.; O'Reilly, R. K. Permeable Protein-Loaded Polymersome Cascade Nanoreactors by Polymerization-Induced Self-Assembly. *ACS Macro Lett.* **2017**, *6*, 1263-1267. ([link](#))
2. Bilalis, P.; Tziveleka, L.-A.; **Varlas, S.**; Iatrou, H. pH-Sensitive nanogates based on poly(L-histidine) for controlled drug release from mesoporous silica nanoparticles. *Polym. Chem.* **2016**, *7*, 1475-1485. ([link](#))
1. Bilalis, P.; **Varlas, S.**; Kiafa, A.; Velentzas, A.; Stravopodis, D.; Iatrou, H. Preparation of hybrid triple-stimuli responsive nanogels based on poly(L-histidine). *J. Polym. Sci. Polym. Chem. Part A* **2016**, *54*, 1278-1288. ([link](#))

† Denotes equal author contribution. * Denotes corresponding authorship.

CONFERENCE PRESENTATIONS:

Thus far, I have delivered **8 oral presentations** (including **2 invited talks**) and **14 poster presentations** (including **2 "Best Poster" prizes**) in national, international and online conferences and meetings. A full list of my oral and poster presentations can be provided upon request.

PROFESSIONAL MEMBERSHIPS:

- Member of the American Chemical Society (ACS) (January 2019 – present)
- Member of Polymeric Materials: Science and Engineering (PMSE), Polymer Chemistry (POLY) and Colloid & Surface Chemistry (COLL) Divisions (ACS) (January 2019 – present)
- Member of the Royal Society of Chemistry (MRSC) (June 2017 – present)
- Member of Macro Group UK, Biomaterials Chemistry Group and Materials Chemistry Division (RSC) (June 2017 – present)
- Member of the Society of Chemical Industry (SCI) (June 2017 – present)
- Member of the Royal Microscopical Society (RMS) and European Microscopy Society (EMS) (April 2018 – present)
- Graduate Network Committee Member of the United Kingdom & Ireland Controlled Release Society (UKICRS) (January 2018 – November 2020)
- Member of the Association of Greek Chemists (AGC) (October 2014 – present)

REFERENCES:

Prof. Steven Armes (Post-doctoral research supervisor)

Department of Chemistry, University of Sheffield
Sheffield, United Kingdom

Email: s.p.arnes@sheffield.ac.uk

Prof. Hermis Iatrou (M.Sc. supervisor)

Department of Chemistry, National and Kapodistrian
University of Athens

Athens, Greece

Email: iatrou@chem.uoa.gr

Prof. Rachel K. O'Reilly (Ph.D. supervisor)

Head of School of Chemistry, University of
Birmingham

Birmingham, United Kingdom

Email: r.oreilly@bham.ac.uk

Dr. Panayiotis Bilalis (M.Sc. co-supervisor)

Research Scientist, King Abdullah University of
Science and Technology (KAUST)

Thuwal, Saudi Arabia

Email: panagiotis.bilalis@kaust.edu.sa