

Ce document présente les productions scientifiques depuis ma promotion au grade de DR2 en octobre 2022. Une liste complète de mes publications est disponible sur Google Scholar :
<https://scholar.google.com/citations?hl=en&user=umk1814AAAAJ>

Conventions: **S. Harrisson** : auteur; * : auteur correspondant ; **[M]** étudiant(e) en masters/L3 encadré(e) **[D]** doctorant(e) encadré(e) ; **[P]** postdoctorant(e) encadré(e).

1- Articles

1.1 Scientific articles

1. Memory Effect in Thermoresponsive Proline-Based Polymers
M. Badreldin **[D]**, R. Le Scouarnec **[M]**, S. Lecommandoux, **S. Harrisson***, C. Bonduelle*
Angew. Chem. Int. Ed. 61, e202209530 (2022) [HAL-03874319](#)
2. Thermo-responsive lipophilic NIPAM-based block copolymers as stabilizers for lipid-based cubic nanoparticles
A. Balestri, B. Lonetti*, **S. Harrisson**, B. Farias-Mancilla **[D]**, J. Zhang, H. Amenitsch, U. Schubert, C. Guerrero-Sanchez, C. Montis*, D. Berti
Colloids Surf. B. 220, 112884 (2022) [HAL-04289606](#)
3. Lactide-derived monomers for radical thiocarbonyl addition ring-opening copolymerization
O. Ivanchenko, S. Mazières, **S. Harrisson***, M. Destarac*
Polym. Chem. 13, 5525-5529 (2022) [HAL-03775825](#)
4. Effect of N-alkylation in N-carboxyanhydride (NCA) ring-opening polymerization kinetics
P. Salas-Ambrosio, A. Tronnet, M. Badreldin **[D]**, S. Ji, S. Lecommandoux, **S. Harrisson**, P. Verhaeghe, C. Bonduelle*
Polym. Chem. 13, 6149-6161 (2022) [HAL-03813069](#)
5. Ring size-reactivity relationship in radical ring-opening copolymerisation of thionolactones with vinyl pivalate
O. Ivanchenko, S. Mazières, R. Poli, **S. Harrisson***, M. Destarac*
Polym. Chem. 13, 6284-6292 (2022) [HAL-03846177](#)
6. Oxygen-Enhanced Atom Transfer Radical Polymerization through the Formation of a Copper Superoxido Complex
K. Parkatzidis, N. P. Truong, R. Whitfield, C. E. Campi, B. Grimm-Lebsanft, S. Buchenau, M. A. Rübhausen, **S. Harrisson**, D. Konkolewicz, S. Schindler, A. Anastasaki*
J Am Chem Soc, 145, 1906-1915 (2023) [HAL-03989301](#)
7. On Demand Degradation of Thioester/Thioacetal Functions in Vinyl Pivalate-Derived Copolymers with Thionolactones
O. Ivanchenko, S. Mazières, **S. Harrisson***, M. Destarac*
Macromolecules, 56, 4163-4171 (2023) [HAL-04144456](#)
8. Controlling the Composition Profile of Acrylic Acid Copolymers by Tuning the pH of Polymerization in Aqueous Dispersed Media
C. Debie, N. Coudert, J. Abdul, **S. Harrisson***, O. Colombani, J. Rieger*
Macromolecules, 56, 8497-8506 (2023) [HAL-04289635](#)
9. Spontaneous Gradients by ATRP and RAFT: Interchangeable Polymerization Methods?
K. G. E. Bradford, R. D. Gilbert, M. A. S. N. Weerasinghe, **S. Harrisson**, D. Konkolewicz
Macromolecules, 56, 8784-8795 (2023) [HAL-04289653](#)
10. Hydrogels of Amphiphilic Triblock Copolymers with Independently Tunable pH and Temperature-Controlled Exchange Dynamics
N. Coudert, C. Debie, **S. Harrisson**, J. Rieger, T. Nicolai, O. Colombani*
Macromolecules, 56, 9584-9594 (2023) [HAL-04642255](#)
11. Micellar N-heterocyclic carbene-like organic catalysis from polymeric nanoreactors immobilizing benzimidazolium acetate motifs in Their core
A.L. Wirotius, R. Lambert, T. Dardé, **S. Harrisson**, D. Taton*
ACS Catal, 14, 10271-10279 (2024) [HAL-04642283](#)
12. Thermal Solution Depolymerization of RAFT Telechelic Polymers
N. De Alwis Watuthanthrige, R. Whitfield, **S. Harrisson**, N. P. Truong, A. Anastasaki*
ACS Macro Lett, 13, 806-811 (2024) [HAL-04649299](#)

13. Toward Synthetic Intrinsically Disordered Polypeptides (IDPs): Controlled Incorporation of Glycine in the Ring-Opening Polymerization of *N*-Carboxyanhydrides
M. Baldredin **[D]**, P. Salas-Ambrosio, S. Bourasseau, S. Lecommandoux, **S. Harrison***, C. Bonduelle*
Biomacromolecules, 25, 3033-3043 (2024) [HAL-04649402](#)
14. SI-ATRP grafting of polymers from polydopamine-modified cellulose nanocrystals
Y. You, Z. Zhang*, **S. Harrison**, G. Sèbe*
Carbohydr Polym, 341, 122346 (2024) [HAL-04649417](#)
15. Morphology and thermal transitions of self-assembled NIPAM-DMA copolymers in aqueous media depend on copolymer composition profile
B. Farias-Mancilla **[D]**, A. Balestri, J. Zhang, H. Frielinghaus, D. Berti, C. Montis, M. Destarac, U. S. Schubert, C. Guerrero-Sanchez*, **S. Harrison**, B. Lonetti*
J. Colloid Interface Sci, 662, 99-108 (2024) [HAL-04642323](#)
16. Polypeptide- and Protein-Based Conjugate Nanoparticles via Aqueous Ring-Opening Polymerization induced self-assembly (ROPISA)
H. Beuseroy, C. Grazon, S. Antoine, M. Baldredin **[D]**, P. Salas-Ambrosio, **S. Harrison**, E. Garanger, S. Lecommandoux*, C. Bonduelle*
Macromol Rapid Commun, 45, 2400079 (2024) [HAL-04649380](#)
17. Synthesis of degradable polyethylene and poly(ethylene-co-vinyl acetate) by radical co- and terpolymerization of ethylene, ϵ -thionocaprolactone and vinyl acetate
N. D. Vu, O. Ivanchenko, F. Baffe, Y. Guillaneuf, D. Gimes, **S. Harrison**, V. Monteil, M. Destarac*, F. D'Agosto*
Macromolecules, 57, 4516-4523 (2024) [HAL-04649325](#)
18. Radical Copolymerization of Thionoglycolide and Derivatives for Preparation of Degradable Vinyl Polymers
O. Ivanchenko, S. Mazières, S. Mallet-Ladeira, **S. Harrison**, M. Destarac*
Macromolecules, 57, 8059-8066 (2024) [HAL-04684378](#)
19. IUPAC recommended experimental methods and data evaluation procedures for the determination of radical copolymerization reactivity ratios from composition data
A. A. A. Autzen, S. Beuermann, M. Drache, C. M. Fellows, **S. Harrison**, A. M. van Herk*, R. A. Hutchinson, A. Kajiwara, D. J. Keddie, B. Klumperman, G. T. Russell
Polym. Chem., 15, 1851-1861 (2024) [HAL-04649362](#)
20. Effect of pH on the incorporation of acrylic acid units in the core of polymer nanoparticles prepared by PISA and on their morphology
C. Debie, N. Coudert, J. M. Guignier, F. Coumes, C. Guibert, **S. Harrison**, F. Stoffelbach, O. Colombani*, J. Rieger*
Polym. Chem., 15, 2462-2475 (2024) [HAL-04649351](#)
21. Exploiting machine learning and automated synthesis in continuous flow for process optimization of the organocatalyzed ring-opening polymerization of L-lactide
G. K. K. Clothier **[P]**, D. Taton, **S. Harrison***
ACS Polym. Au, 5, 603-612 (2025) [HAL-05268607](#)
22. Fluorescent molecular rotor-based polymer materials for local microviscosity mapping in microfluidic channels
D. Nalatambay **[D]**, F. Gibouin, M. Zitouni, J. Renaudeau, G. Clisson, P. Lidon, **S. Harrison***, Y. Medina-Gonzalez*
Chem. Eng. J., 520, 165459 (2025) [HAL-05164472](#)
23. Structure and Dynamics of Self-Assembled Thermo-Associative PNIPAM-PDMA-PNIPAM Triblock Copolymers of High Molar Mass
T. Merland*, L. Despax **[M]**, M. Destarac, **S. Harrison**, L. Benyahia, T. Nicolai, C. Chassenieux*
Macromolecules, 20, 11408-11417 (2025) [HAL-05316716](#)
24. Calcium/lithium and calcium/magnesium systems for the anionic copolymerization of butadiene and styrene
T. La Porta, R. Perrin, M. Ray, **S. Harrison**, B. Gadenne, C. Dire, S. Carlotti*
Polymer, 332, 128560 (2025) [HAL-05177010](#)
25. Experimental methods and data evaluation procedures for the determination of radical copolymerization reactivity ratios from composition data (IUPAC Recommendations 2025)
A. A. A. Autzen, S. Beuermann, M. Drache, C. M. Fellows, **S. Harrison**, A. M. van Herk*, R. A. Hutchinson, A. Kajiwara, D. J. Keddie, B. Klumperman, G. T. Russell
Pure Appl. Chem., 97, 1455-1463 (2025) [HAL-05362350](#)

26. Comment on "Multidimensional kinetic study on the organocatalyzed ring-opening polymerization (ROP) of L-lactide via a robotic high-throughput flow platform" by B. Zhang and T. Junkers, Chem. Sci., 17, 4706 (2026)
G. K. K. Clothier **[P]**, **S. Harrisson***
Chem. Sci., 17, 12142-12146 (2026) [HAL-05237075](#)
27. Taming the Tiger: Bayesian optimization of organocatalyzed ring-opening polymerization in flow
G. K. K. Clothier **[P]**, O. Doat **[P]**, B. Li **[P]**, D. Taton, **S. Harrisson***
Polym. Chem., 17, 3275-3286 (2026)

1.2 Review articles

1. Thermoresponsive Polymers: from Natural Proteins to Amino-Acid Based Synthesis
M. Baldredin **[D]**, P. S. Ambrosio, E. Garanger, S. Lecommandoux, **S. Harrisson***, C. Bonduelle*
Progr. Polym Sci. 147, 101752 (2023) [HAL-04272131](#)
2. Synthesis of Polypeptides by Ring-Opening Polymerization: A Concise Review
M. Badredin **[D]**, P. Salas-Ambrosio, M. Ayala, **S. Harrisson***, C. Bonduelle*
Curr. Org. Chem. 28, 1154-1163 (2024) [HAL-04775415](#)
3. Atom Transfer Radical Polymerization
S. Harrisson*, R. Whitfield*, A. Anastasaki*, K. Matyjaszewski*
Nat. Rev. Methods Primers, 5, 2 (2025) [HAL-05033414](#)

2- Production in conferences / congresses and research seminars

Invited talks in a national or international conference

1. Update and Critical Reanalysis of IUPAC Benchmark Rate Propagation Coefficient Data
S. Harrisson
Pacific Polymer Conference PPC17, Brisbane (Australie), 11-14 December 2022
2. Limits of Precision in Chain Polymerization
S. Harrisson
SCM-10, Amsterdam (Pays-Bas), 1-3 February 2023
3. Neither block nor random: controlling comonomer distribution in asymmetric and gradient copolymers
S. Harrisson
Polymer Meeting 15 (PM-15), Bratislava (Slovakia), September 4-7, 2023
4. Controlling comonomer distribution in asymmetric and gradient copolymers
S. Harrisson
IUPAC Macro 2024, Warwick, UK (July 1-4, 2024)
5. Discussion Leader: Leveraging Mechanistic Understanding in Polymer Synthesis.
S. Harrisson
Gordon Research Conference on Polymers, South Hadley MA, USA (June 8-13, 2025)
6. Exploiting Machine Learning and Automated Synthesis in Continuous Flow
S. Harrisson
Journées GFP Est FRMNGE, Mulhouse, France (June 30-July 1, 2025)
7. Data-driven polymerization in flow : Machine Learning Strategies for Accelerated Polymer Discovery
S. Harrisson
ACTPAC Symposium New Trends in Polymer Science, Bordeaux, France (April 25, 2026)
8. Data-driven polymerization in flow : Machine Learning Strategies for Accelerated Polymer Discovery
S. Harrisson
EUPOC 2026 Designing New Polymers by Combining High-Throughput and Artificial Intelligence Tools, Bertinoro, Italy (May 18-21, 2026)
9. Flow Polymerization and AI : Towards Data-driven Polymer Synthesis
S. Harrisson
École Thématique: Synthèse en Flux dans les domaines de la Chimie Organique, la Chimie Macromoléculaire, et la Chimie Organique
Aussois, France (June 8-12)

Invited seminars in a French or a foreign university

1. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
University of Ghent, August 24, 2023
2. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
Imperial College London, Kensington, UK, October 9, 2023
3. Three Rings: Synthesis, Copolymerization and Degradation of rROP Monomers
S. Harrisson
University of Surrey, Guildford, UK, October 10, 2023
4. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
University of Nottingham, Nottingham, UK, October 11, 2023
5. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
University of Leeds, Leeds, UK, October 12, 2023
6. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
University of Warwick, Coventry, UK, October 16, 2023
7. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
ETH, Zurich, Switzerland, October 18, 2023
8. Three Rings: Synthesis, Copolymerization and Degradation of rROP Monomers
S. Harrisson
Friedrich-Schiller Universität, Jena, Germany, October 20, 2023
9. Neither block nor random: controlling comonomer distribution in asymmetric copolymers
S. Harrisson
University of Rouen, Mont-Saint-Aignan, January 25, 2024
10. Optimizing Lab-scale polymer synthesis with Flow Chemistry and Machine Learning
S. Harrisson
SoftMat, Toulouse, January 18, 2026
11. Flow Polymerization and AI : Towards Data-driven Polymer Synthesis
S. Harrisson
University of Hasselt, Diepenbeek, Belgique, June 16, 2026

Oral communications in a national or international conference (* = presenting author)

1. Interpenetrated networks in silicone hydrogel contact lenses
B. Farias Mancilla **[P]**, R. Jagu, O. Sandre, **S. Harrisson**
51^{ème} colloque annuel du GFP, Bordeaux, France (November 20-24, 2023)
2. Amphiphilic Polymer Conetworks In Novel Formulations for Silicone Hydrogel Contact Lenses
B. Farias Mancilla* **[P]**, R. Jagu, O. Sandre, **S. Harrisson**
18th Pacific Polymer Conference, Puerto Vallarta, Mexico (December 3-7, 2023)
3. Optimization of ring-opening polymerization through automation in flow
G. Clothier **[P]**, F. Hajji **[M]**, **S. Harrisson**, D. Taton
Journées GFP Sud-Ouest, Pau, France (March 19, 2024)
4. Optimization of Organocatalyzed Ring-Opening Polymerization of Lactide via Flow Chemistry
G. Clothier **[P]**, D. Taton, **S. Harrisson***
Workshop POLY-Cordiale, Manchester, UK (April 2-4, 2025)
5. Optimization of Ring-Opening Polymerization through automation in flow
G. Clothier **[P]***, D. Taton, **S. Harrisson**
Journées SynthFlux, Rouen (June 4-6, 2025)

6. Optimization of polylactide synthesis using flow chemistry
G. Clothier **[P]**, D. Taton, **S. Harrisson***
IUPAC World Chemistry Congress, Kuala Lumpur, Malaysia (July 14-18, 2025)
7. Optimizing Lab-Scale Polymer Synthesis with Flow Chemistry and Machine Learning
S. Harrisson*
S3 Congress 2025 – Smart, Safe & Sustainable Polymers, Lyon, France (November 5-6, 2025)
8. Exploitation of flow chemistry and machine learning for the optimization of organocatalyzed ring-opening polymerization
G. K. K. Clothier **[P]***, D. Taton, **S. Harrisson**
53ème Colloque National du Groupe Français de Polymères, Lille, France (November 24-28, 2025)
9. Présentation de la plateforme AMETHYST
G. K. K. Clothier **[P]***
Introduction au Deep Learning pour la classification d'images et la détection d'objets (formation DIADEM Academy), ICMCB, Talence, May 19 2025
10. Machine-learning driven optimization of polymerizations in flow
D. Taton, **S. Harrisson**, O. Doat, G. K. K. Clothier **[P]***
PDS26 AI for the Process Industries, webinar, (June 11-12, 2026)
11. Bayesian Optimization of Valerolactone Polymerization : Effects of Algorithm and Data Set
G. K. K. Clothier **[P]**, O. Doat **[P]**, B. Li **[P]**, D. Taton, **S. Harrisson***
IUPAC Macro2026, Kuching, Sarawak, Malaysia (July 28-31, 2026)

Poster communications in a national or international conference

1. Stimuli-responsive asymmetric copolymers: effect of monomer distribution on the self-assembly
B. Farias Mancilla **[P]***, S. Harrisson
18th Pacific Polymer Conference, Puerto Vallarta, Mexico (December 3-7, 2023)
Prix du meilleur poster
2. Optimization of Ring Opening Polymerizations using Automated Flow Chemistry
G. Clothier **[P]**, D. Taton S. Harrisson*
Gordon Research Conference on Polymers, South Hadley MA, USA (June 8-13, 2025)
3. Synthesis of photo-polymerizable and self-foamable oligohydroxyurethanes for the accelerated discovery and optimization of sustainable foams
E. Diomar **[D]***, T. Vidil, **S. Harrisson**
JEPO, Villarcieux, France (October 13-17, 2025)
4. Bayesian Optimization of Valerolactone Polymerization: Effects of Algorithm and Data Set
G. K. K. Clothier **[P]**, B. Li **[P]**, D. Taton, **S. Harrisson***
Assemblée Générale du PEPR Diadem, Saclay, France (November 24-26, 2025)
5. Synthesis of photo-polymerizable and self-foamable oligo-hydroxyurethanes for the accelerated discovery and optimization of sustainable foams
E. Diomar **[D]***, T. Vidil, **S. Harrisson**
Assemblée Générale du PEPR Diadem, Saclay, France (November 24-26, 2025)
6. Bayesian Optimization of Valerolactone Polymerization: Effects of Algorithm and Data Set
G. K. K. Clothier **[P]**, B. Li **[P]**, D. Taton, **S. Harrisson***
53ème Colloque National du Groupe Français des Polymères, Lille, France (November 24-28, 2025)
7. Synthesis of photo-polymerizable and self-foamable oligo-hydroxyurethanes for the accelerated discovery and optimization of sustainable foams
E. Diomar **[D]***, T. Vidil, **S. Harrisson**
EDSC, Talence, France (April 23, 2026)
8. Synthesis of photo-polymerizable and self-foamable oligo-hydroxyurethanes for the accelerated discovery and optimization of sustainable foams
E. Diomar **[D]***, T. Vidil, **S. Harrisson**
EUPOC 2026: Designing New Polymers By Combining High-Throughput And Artificial Intelligence Tools, Bertinoro, Italy, May 18-22, 2026
Prix du meilleur poster

9. Synthesis of photo-polymerizable and self-foamable oligo-hydroxyurethanes for the accelerated discovery and optimization of sustainable foams
E. Diomar **[D]***, T. Vidil, **S. Harrison**
Bordeaux Polymer Conference, Talence, France (June 1-4, 2026)
10. Machine-Learning Driven Optimization of Ring-Opening Polymerizations in Flow
O. Doat **[P]***, G. K. K. Clothier **[P]**, D. Taton, **S. Harrison**
Bordeaux Polymer Conference, Talence, France (June 1-4, 2026)

4- Patents

Filed patents

1. Synthetic Polymers and Polymers with Hysteresis Properties
C. Bonduelle, **S. Harrison**, S. Lecommandoux, M. Badreldin **[D]**, R. Le Scouarnec **[M]**
WO2024033398A1 (08/10/2022)

Licenced patents

1. Process for the free radical polymerization of thionolactones or thionocarbonates
M. Destarac, **S. Harrison**
FR3109152B1, déposé 2020-04-09, date de publication 2021-10-15
(WO2021205123A1 Process for the radical polymerization of thionolactones or thionocarbonates)
License : Ecolanka (SIRET: 94382056300014)
2. Process for the radical polymerization of thionolactides
O. Ivanchenko, **S. Harrison**, M. Destarac, S. Mazières
FR3133613B1, déposé 2022-03-17, date de publication 2023-09-22
(WO2023175121A1 Method for radical polymerisation of thionolactides)
License : Ecolanka (SIRET: 94382056300014)