

Silvia Grama, Ph.D.

Philadelphia, PA +1 (267)-244-6796

gramasilvia84@gmail.com; <https://www.linkedin.com/in/silvia-grama-ph-d-a5027048/>

https://scholar.google.com/citations?hl=en&user=BGX9awAAAAJ&view_op=list_works&sortby=pubdate

Highlights

Chemist with expertise in the design, synthesis and characterization of organic and polymer materials.
Preparation and characterization of multifunctional polymer particles with biomedical applications.
Materials physical-chemical characterization techniques of polymers and organic compounds.
Deadline driven researcher with experience in managing multiple projects simultaneously.

Professional Experience

Nov 2015 – present

Postdoctoral Research Fellow
University of Pennsylvania, Roy & Diana Vagelos Laboratories, Department of Chemistry
Project Title: “*Synthetic Methods and Strategies for Organic, Supramolecular and Macromolecular Chemistry*”
Mentor: **Professor Virgil Percec**
Demonstration that the synthesis of sterically hindered aliphatic polyamide dendrimers is self-interrupted at a predictable low generation number, controlled by the core conformation.
Performing ultrafast-living radical polymerization of hydrophobic acrylates in novel solvent-water mixtures.
Mentoring undergraduate, master and graduate students.

Jul 2012 – Oct 2015

Postdoctoral Research Fellow
Academy of Sciences of the Czech Republic, Institute of Macromolecular Chemistry
Department of Polymer Particles
Project Title: “*Preparation of Multifunctional Polymer Microparticles for Biomedical Applications*”
Mentor: **Dr. Daniel Horák**
Silanization of poly(glycidyl methacrylate) microspheres providing biocompatible organic/inorganic hybrid materials by a sol-gel approach.

Education

Oct 2008 – Nov 2011

PhD Student in Chemistry
“Gheorghe Asachi” Technical University of Iasi, Romania, Faculty of Chemical Engineering and Environmental Protection, Department of Natural and Synthetic Polymers
Thesis Title: “*Association Phenomena Studied in Photo-Sensitive Supramolecular Systems*”
Mentor: **Professor Nicolae Hurduc**
Designing amphiphilic azo-polymeric systems capable of generating micelles that are sensitive to UV and visible radiation with direct application to the controlled immobilization and release of small molecules.
Creating a porphyrin-based polysiloxane micromaterial that preserves the optical properties of the porphyrinic dye, with application in sensor devices construction.

Oct 2007 – Jul 2008

Master of Science
“Gheorghe Asachi” Technical University of Iasi, Romania, Faculty of Chemical Engineering and Environmental Protection, Department of Natural and Synthetic Polymers
Specialization: Polymeric Biomaterials
Thesis Title: “*Study of Association Phenomena of Some Polymers with Conformational Photo-Control Capacity*”
Mentor: **Professor Nicolae Hurduc**
Engineering polymer systems capable of self-assembly and disassembly in response to light stimuli.

Oct 2003 – Jun 2007

Bachelor of Technological Biochemistry
“Alexandru Ioan Cuza” University of Iasi, Faculty of Chemistry. Main field of study: Chemistry
Specialization: Technological Biochemistry

Research stages

Feb 2014 – Jul 2014	Eindhoven University of Technology, Eindhoven, Netherlands
Feb 2015 – Mar 2015	Department of Chemical Engineering and Chemistry, Laboratory of Polymer Materials Growing poly(ethylene glycol) brushes from the poly(glycidyl methacrylate) microparticle surface using living radical polymerization techniques.
Apr 2010 - Jun 2010	University Pierre et Marie Curie, Paris, France Laboratory of Polymer Chemistry Generating hydrogen-bonded supramolecular systems based on light-sensitive azobenzene chromophores and urea derivatives.

Course

Jun 18 – June 20, 2014	Condensed Course on Emulsion Polymerization Eindhoven University of Technology, Eindhoven, Netherlands
------------------------	---

Laboratory skills	Materials physical-chemical characterization techniques: Thermal Analysis; Differential Scanning Calorimetry; ATR FT-IR, ¹ H/ ¹³ C-NMR, Fluorescence and UV-Vis Spectroscopy; Contact Angle Analysis; Dynamic Light Scattering; Particles Size Analysis; Mercury Intrusion Porosimetry; Surface Area Measurements, MALDI-ToF, High-performance liquid chromatography, Gel Permeation Chromatography. Synthesis, modification and characterization of different polymers and organic/inorganic compounds: (polysiloxane, poly(glycidyl methacrylate), polyethylene glycol, polyamide amine, poly-methyl methacrylate, poly-butyl acrylate, oligo(ethylene oxide) methyl ether acrylate, azophenol, azobenzene-crown-ether, silica, 2,2-bis(azidomethyl)propionic acid, etc.)
-------------------	--

Publications and Presentations	Published 21 papers in peer-reviewed journals. Attended 29 national and international conferences with oral or poster presentations. Full list on following pages.
--------------------------------	--

Awards	Bronze Medal for “Azo-polymers with Biological Application”, Raicu (Luca) A., Epure E.L., Grana S. , Nor I., Hurduc N., at International Conference “Inventics – Performance and Technical Creativity” Euro Invent 2010, 7th-9th of May 2010, Iasi, Romania.
--------	--

Affiliations	Member of American Chemical Society
--------------	-------------------------------------

References

Professor Virgil Percec

University of Pennsylvania
Roy & Diana Vagelos Laboratories
Department of Chemistry
231 S. 34 Street, Philadelphia, PA
19104-6323, United States
E-mail: percec@sas.upenn.edu
Tel: [215 573 5527](tel:2155735527)

Dr. Daniel Horák

Academy of Sciences of the Czech Republic
Institute of Macromolecular Chemistry
Heyrovského Sq. 2, 162 06 Prague 6,
Czech Republic
E-mail: horak@imc.cas.cz

Professor Nicolae Hurduc

Technical University of Iasi,
Faculty of Chemical Engineering and Environmental Protection
Department of Natural and Synthetic Polymers
Mangeron Avenue 71, 700050, Iasi,
Romania
E-mail: nhurduc@ch.tuiasi.ro

PUBLICATIONS

21. Moreno, A., **Grama, S.**; Liu, T.; Galià, M.; Gerard Lligadas, G.; Percec, V. SET-LRP Mediated by TREN in Biphasic Water-Organic Solvent Mixtures Provides the Most Economic and Efficient Process. *Polymer Chemistry* **2017**, DOI: 10.1039/C7PY01841J. Advance Article.
20. **Grama, S.**; Lejnicks, J.; Enayati, M.; Smail, R.B.; Ding, L.; Lligadas, G.; Monteiro, M.J.; Percec, V. Searching for Efficient SET-LRP Systems via Biphasic Mixtures of Water with Carbonates, Ethers and Dipolar Aprotic Solvents. *Polymer Chemistry* **2017**, *8*, 5865–5874.
19. Lligadas, G.; **Grama, S.**; Percec, V. SET-LRP Platform to Practice, Develop and Invent. *Biomacromolecules*, **2017**, *18*, 2981–3008.
18. Lligadas, G.; Enayati, M.; **Grama, S.**; Smail, R.; Sherman, E. S.; Percec, V. Ultrafast SET-LRP with Peptoid Cytostatic Drugs as Monofunctional and Bifunctional Initiators. *Biomacromolecules*, **2017**, *18*, 3610–2622.
17. Jezorek, R.L.; Enayati, M.; Smail, R.B.; Lejnicks, J.; **Grama, S.**; Monteiro, M.J.; Percec, V. The Stirring Rate Provides a Dramatic Acceleration of the Ultrafast Interfacial SET-LRP in Biphasic Acetonitrile-Water mixtures. *Polymer Chemistry* **2017**, *8*, 3405–3424. Front Cover.
16. Smail, R.B.; Jezorek, R.L.; Lejnicks, J.; Enayati, M.; **Grama, S.**; Monteiro, M.J.; Percec, V. Acetone–Water Biphasic Mixtures as Solvents for Ultrafast SET-LRP of Hydrophobic Acrylates, *Polymer Chemistry* **2017**, *8*, 3102–3123.
15. Lligadas, G.; **Grama, S.**; Percec, V. Recent Developments in the Synthesis of Biomacromolecules and their Conjugates by SET-LRP. *Biomacromolecules*, **2017**, *18*, 1039–1063. Selected as ACS Editor's Choice and Front Cover of the issue No. 4.
14. Jishkariani, Davit.; MacDermaid, C.M.; Timsina, Y.N.; **Grama, S.**; Gillani S.S.; Divar, M.; Yadavalli, S.S.; Moussodia, R.-O.; Leowanawat, P.; Berrios Camacho, A.M.; Walter, R.; Goulian, M.; Klein, M.L.; Percec, V. Self-Interrupted Synthesis of Sterically Hindered Aliphatic Polyamide Dendrimers. *PNAS*, Early Edition March 7, **2017**. Highlighted by Alison Sundermier on Penn News and in other news media: <https://news.upenn.edu/news/penn-researchers-push-limits-organic-synthesis>
13. Enayati, M.; Smail, R.B.; **Grama, S.**; Jezorek, R.L.; Monteiro, M.J.; Percec, V. The Synergistic Effect During Biphasic SET-LRP in Ethanol-Nonpolar Solvent-Water Mixtures. *Polymer Chemistry* **2016**, *7*, 7230–7241.
12. Antonyuk, V.; **Grama, S.**; Plichta, Z.; Magorivska, I.; Horak, D.; Stoika, R. Use of Specific Polysaccharide-Immobilized Monodisperse Poly(Glycidyl Methacrylate) Core-Silica Shell Microspheres for Affinity Purification of Lectins. *Biomedical Chromatography* **2015**, *9*, 783–787.
11. **Grama, S.**; Horak, D. Preparation of Monodisperse Porous Silica Particles Using Poly(Glycidyl Methacrylate) Microspheres as a Template. *Physiological Research* **2015**, *64*, 11–17.
10. **Grama, S.**; Boiko, N.; Bilyy, R.; Klyuchivska, O.; Antonyuk, V.; Stoika, R.; Horak, D. Novel Fluorescent Poly(Glycidyl Methacrylate) - Silica Microspheres. *European Polymer Journal* **2014**, *56*, 92–104.
9. **Grama, S.**; Plichta, Z.; Trchová, M.; Kovářová, J.; Beneš, M.; Horák, D. Monodisperse Macroporous Poly(Glycidyl Methacrylate) Microspheres Coated with Silica: Design, Preparation and Characterization. *Reactive and Functional Polymers* **2014**, *77*, 11–17.
8. Prisacaru, A. I.; **Grama, S.**; Durdureanu-Angheluta, A.M.; Pinteala, M.; Hurduc, N. Azo-Polysiloxane Micelles Charged with Nifedipine. *Central European Journal of Chemistry* **2013**, *11*, 1431–1438.
7. **Grama, S.**; Moleavin, I.-A.; Hodorog-Rusu, A.; Hurduc, N.; Prisacaru, I.; Ibanescu, C. Photosensitive Azo-Polysiloxanes for Drug Delivery Applications. *Materiale Plastice* **2013**, *50*, 60–64.
6. Popa, V.I.; Căpraru, A.M.; **Grama, S.**; Măluțan, Th. Nanoparticles Based on Modified Lignin's with Biocide Properties. *Cellulose Chemistry and Technology* **2011**, *45*, 221–226.
5. Gîlcă, I.A.; Căpraru, A.M.; **Grama, S.**; Popa, V.I. Agents for Wood Bioprotection Based on Natural Aromatic Compounds and Their Complexes with Copper and Zinc. *Cellulose Chemistry and Technology* **2011**, *45*, 227–231.
4. **Grama, S.**; Lisă, G.; Hurduc, N. Photo-Sensitive Azo-Polysiloxanic Micelles. *Bulletin of the Polytechnic Institute of Iasi, Section Chemistry and Chemical Engineering Tome* **2011**, *57*, 153–162.
3. **Grama, S.**; Hurduc, N.; Făgădar-Cosma, E.; Armeanu, I.; Vasile, M.; Tarabukina, E.; Făgădar-Cosma, Gh. Novel Porphyrin-Based Polysiloxane Micromaterial. *Digest Journal of Nanomaterials and Biostructures* **2010**, *5*, 959–973.

2. Moleavin, I.; **Grama, S.**; Cârlescu, I.; Hurduc, N. Photosensitive Micelles Based on Functionalized Polysiloxanes Containing Azobenzene Moieties. *Polymer Bulletin* **2010**, *65*, 69–81.

1. Resmeriță, A.M.; Epure, L.E.; **Grama, S.**; Ibănescu, C.; Hurduc, N. Photochromic Behaviour of Nano-Structurable Azo-Polysiloxanes, with Potential Application in Biology. *Open Chemical and Biomedical Methods Journal* **2009**, *2*, 91–98.

PRESENTATIONS

29. Jishkariani, D.; MacDermaid, C.M.; Timsina, Y.N.; **Grama, S.**; Gillani, S.S.; Divar, M.; Yadavalli, S.S.; Moussodia, R.O., Leowanawat, P.; Berrios Camacho, A.M., Walter, R.; Goulian, M.; Klein, M.L.; Percec, V. Self-Interrupted Synthesis of Sterically Hindered Aliphatic Polyamide Dendrimers. *254th American Chemical Society National Meeting & Exposition*, Washington, DC, August 20–24, **2017**.

28. **Grama, S.**; Timsina, Y.; Jishkariani, D.; MacDermaid, C.; Gillani, S.; Divar, M.; Moussodia, R.O., Leowanawat, P.; Berrios Camacho, A.M., Klein, M.L.; Percec, V. Divergent-Convergent Strategy for the Synthesis of Aliphatic Polyamide Dendrimers. *252nd American Chemical Society National Meeting & Exposition*, Philadelphia, PA, August 21–25, **2016**.

27. Timsina, Y.; Jishkariani, D.; **Grama, S.**; MacDermaid, C.; Gillani, S.; Divar, M.; Moussodia, R.O., Leowanawat, P.; Berrios Camacho, A.M., Klein, M.L.; Percec, V. Divergent Synthesis of Four Generations of Aliphatic Polyamide Dendrimers. *252nd American Chemical Society National Meeting & Exposition*, Philadelphia, PA, August 21–25, **2016**.

26. **Grama, S.**; Horák, D. Functional Surface Modification of Poly(Glycidyl Methacrylate) Microspheres for Biological Applications. *Functional Polymers at Bio-Material Interfaces*, Prague, Czech Republic, June 28 –July 2, **2015**.

25. **Grama, S.**; Heuts, H.; Horák, D. Polymerization of Oligo(Ethylene Glycol) Methacrylate from Monodisperse Poly(Glycidyl Methacrylate) Microspheres to Reduce Non-Specific Protein Adsorption. *Fourth International Symposium Frontiers in Polymer Science*, Riva del Garda, Italy, May 20–22, **2015**.

24. **Grama, S.**; Stoika, R.; Heuts, H.; Horák, D. Biocompatible Monodisperse Poly(Glycidyl Methacrylate) Microspheres Intended for Biological Applications. *4th Zing Polymer Chemistry Conference*, Cancun, Mexico, December 10–13, **2014**.

23. **Grama, S.**; Stoika, R.; Horák, D.; Biocompatible Fluorescent Poly(Glycidyl Methacrylate)-Silica Microspheres for Biological Applications. *Frontiers of Polymer Colloids: From Synthesis to Macro Scale and Nano-Scale Applications*, Prague, Czech Republic, July 20–24, **2014**.

22. **Grama, S.**; Stoika, R.; Horák, D. Biocompatible Poly(Glycidyl Methacrylate)&Silica Microspheres as Potential Sorbents for Affinity Chromatography. *Dutch Polymer Days*, Lunteren, Netherlands, March 17–18, **2014**.

21. **Grama, S.**; Horák, D. Poly(Glycidyl Methacrylate-co-Ethylene Dimethacrylate) Microspheres Coated with Silica. *Career in Polymers V*, Prague, Czech Republic, July 12–13, **2013**.

20. **Grama, S.**; Plichta, Z.; Horák, D. Preparation and Characterization of Monodisperse Silica-Coated Poly(Glycidyl Methacrylate) Microspheres. *European Polymer Congress*, Pisa, Italy, June 16–21, **2013**.

19. **Grama, S.**; Prisăcaru, A. I.; Hurduc, N. Aggregation/Disaggregation Capacity of Amphiphilic Azo-Polymers Under Light Stimuli. *10th International Symposium of Cosmetics and Flavourings "Cosmetology - Progress and Prospects"*, Iasi, Romania May 31– June 3, **2011**.

18. Moleavin, I.; Epure, L.E.; **Grama, S.**; Rusu, A.; Raicu, A.; Rocha, L.; Ibănescu, C.; Hurduc, N. Stimuli Responsive Polymeric Systems, with Potential Applications in Biology. *Journées de Chimie Organométallique, Supramoléculaire et Catalyse*, The Romanian Academy, Bucharest, Romania, April 14–15, **2011**.

17. **Grama, S.**; Hurduc, N. Self-Assembling Amphiphilic Azo-Polysiloxanes in Micellar Structures, *Student Scientific Session*, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania May, **2011**.

16. Popa, V.I.; Căpraru, A.M.; **Grama, S.**; Măluțan, Th. Biocides Based on Lignin Derivates for Wood Protection. *3rd Nordic Wood Biorefinery Conference*, Stockholm, Sweden, March 22–24, **2011**.

15. Popa, V.I.; Căpraru, A.M.; **Grama, S.**; Măluțan, Th., Studies Concerning the Obtaining of Nanoparticles with Biocides Properties Based on Modified Lignin's. *The 3rd International Conference on Advanced Composite Materials Engineering*, Brasov, Romania, October 27–29, **2010**.

14. Popa, V.I.; Căpraru, A.M.; **Grama, S.**; Măluțan, Th. Nanoparticles Based on Modified Lignin's with Biocide Properties. *The 14th International Symposium on Cellulose Chemistry Symposium* Iasi, Romania, September **2010**.

13. Gîlcă, I.A.; Căpraru, A.M.; **Grama, S.**; Popa, V.I. Agents for Wood Bioprotection Based on Natural Aromatic Compounds and Their Complexes with Copper and Zinc. *The 14th International Symposium on Cellulose Chemistry Symposium* Iasi, Romania. September **2010**.

12. Căpraru, A.M.; Ungureanu, E.; **Grama, S.**; Popa, V.I. Aspect Concerning Treatment of Birch Veneer with Lignin's Epoxy Derivatives with Biocides Properties. *56th Annual Scientific, with international participation, Symposium: Horticulture - Science, Quality, Diversity and Harmony*, University of Agricultural Sciences and Veterinary Medicine „Ion Ionescu de la Brad”, Iasi, Romania, May 27–28, **2010**.
11. Raicu, A.; Epure, L.E.; **Grama, S.**; Nor, I.; Hurduc, N. Azo-Polymers with Biological Application. *International Conference “Inventics – Performance and Technical Creativity” Euro Invent*, Iasi, Romania 7–9 May, **2010**.
10. Hodorog, A.D.; **Grama, S.**; Lisa, G.; Ibănescu, C.; Hurduc, N. Photo and Thermo-Sensitive Micelles. *Days of Faculty of Chemical Engineering and Environmental Protection, 7th Edition, 90th anniversary of the birth of Academician Christopher I. Simionescu*, Iasi, Romania, November 17–19, **2010**.
9. Moleavin, I.; Epure, E.L.; **Grama, S.**; Raicu, A.; Hodorog, A.; Resmeriță, A.M.; Nor, I.; Hurduc, V.; Hurduc, N. Azo Polysiloxanes for Complex Photo-Sensible Supramolecular Systems. *1^{er} Colloque Franco-Roumain en Chimie Moleculaire*, Toulouse, France, February 18–19, **2009**.
8. **Grama, S.**; Epure, E.L.; Moleavin, I.; Hurduc, N.; Molecular Modelling Studies of Some Photosensitive Complex Azo-Systems. *International Conference on Materials Science and Engineering*, Brasov, Romania, February 26-28, **2009**.
7. **Grama, S.**; Resmeriță, A.M.; Raicu, A.; Cârlescu, I.; Hurduc, N. Association Phenomena and Photo-Chromical Study of Azo-Polysiloxanes Modified with Donor-Acceptor Groups. *International Conference on Materials Science and Engineering*, Brasov, Romania, February 26-28, **2009**.
6. Moleavin, I.; Resmeriță, A.M.; Epure, E.L.; **Grama, S.**; Raicu, A.; Doroftei, F.; Scutaru, D.; Hurduc, N. Azo-Polysiloxanes for Complex Light-Sensitive Supramolecular Systems. *Second Cristofor I. Simionescu Symposium: Frontiers in Macromolecular and Supramolecular Science*, Institute of Macromolecular Chemistry „Petru Poni”, Iasi, Romania, June 2–3, **2009**.
5. **Grama, S.**; Moleavin, I.; Hurduc, N. Photo-Sensitive Complex Systems with Potential Application in Cosmetics. *9th International Symposium of Cosmetics and Flavourings “Cosmetology - Multidisciplinary Field”*, Iasi, Romania, June 2–5, **2009**.
4. Epure, E.L.; Moleavin, I.; Resmeriță, A.M.; **Grama, S.**; Raicu, A.; Hodorog, A.; Nor, I.; Hurduc, N. Light-Stimuli Polymeric Systems with Potential Applications in Biology. *International Conference NanoRomania*, Alexandru Ioan Cuza University, Iasi, Romania, June, 2–5, **2009**.
3. **Grama, S.**; Hurduc, N. Photo-Chromic Properties of Some Complex Based on Azo-Polysiloxanes. *Academic Days of Iasi*, The Romanian Academy, Iasi, Romania, October 8–10, **2009**.
2. **Grama, S.**; Hurduc, N. Photosensitive Azo-Polysiloxanes with Self-Assembly Capacity. *Days of Faculty of Chemical Engineering and Environmental Protection, 6th Edition, New Frontiers in Chemistry and Chemical Engineering*, Iasi, Romania, November 18–20, **2009**.
1. Moleavin, I.; Epure, L.E.; **Grama, S.**; Raicu, A.; Hurduc, N. Photo-Sensitive Micelles Based on Azo-Polysiloxanes. *Days of Faculty of Chemical Engineering and Environmental Protection, Innovative Materials and Processes*, Iasi, Romania, November 19–21, **2008**.