

SAJJAD DADASHI SILAB

Postdoctoral Associate



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EDUCATION & TRAINING

- 2023-Present **Postdoctoral Associate**
Department of Chemistry, **Princeton University**
Advisor: Prof. Erin Stache
- 2021-2023 **Postdoctoral Associate**
Department of Chemistry and Chemical Biology, **Cornell University**
Advisor: Prof. Erin Stache
- 2016-2021 **PhD in Chemistry**
Department of Chemistry, **Carnegie Mellon University**
Advisor: Prof. Krzysztof Matyjaszewski
- 2012-2015 **MSc in Chemistry**
Department of Chemistry, **Istanbul Technical University** (Istanbul, Turkey)
Advisor: Prof. Yusuf Yagci
- 2007-2012 **BSc in Polymer Engineering**
Department of Polymer Engineering, **Amirkabir University of Technology** (Tehran, Iran)

RESEARCH INTERESTS

Polymers and polymer chemistry, controlled radical polymerizations and polymer catalysis, photopolymerization and photochemistry, macromolecular engineering, complex macromolecular architectures

PUBLICATIONS

44. C. Preston-Herrera, **S. Dadashi-Silab**, D. G. Oblinsky, G. D. Scholes, E. E. Stache, Molecular Photothermal Conversion Catalyst Promotes Photocontrolled Atom Transfer Radical Polymerization, *J. Am. Chem. Soc.*, **2024**, *146*, 8852–8857
43. K. Kim, D. Nguyen, J. Strong, **S. Dadashi-Silab**, M. Sun, H. Dau, A. Keyes, R. Yin, E. Harth, K. Matyjaszewski, Block Copolymers of Polyolefins with Polyacrylates: Analyzing And Improving The Blocking Efficiencies Using Milrad/ATRP Approach, *Macromol. Rapid Commun.*, **2024**, 202300675
42. F. Lorandi, M. Fantin, H. Jafari, A. Gorczynski, G. Szczepaniak, **S. Dadashi-Silab**, A. A. Isse, K. Matyjaszewski, Reactivity Prediction of Cu-Catalyzed Halogen Atom Transfer Reactions Using Data-Driven Techniques, *J. Am. Chem. Soc.*, **2023**, *145*, 21587–21599
41. **S. Dadashi-Silab**, C. Preston-Herrera, E. E. Stache, Vitamin B₁₂ Derivative Enables Cobalt-Catalyzed Atom Transfer Radical Polymerization, *J. Am. Chem. Soc.*, **2023**, *145*, 19387–19395
40. J. Sobieski, **S. Dadashi-Silab**, L. Thevenin, K. Matyjaszewski, C. Fliedel, R. Poli, Termination of the Carbomethoxyisopropyl Radical, a Poly(methyl methacrylate) Model, in the Presence of Copper Complexes and Proton Donors, *Macromolecules*, **2023**, *56*, 6339–6353
39. **S. Dadashi-Silab**, E. E. Stache, Sticky or Not: Adhesion by Architectural Design, *ACS Cent. Sci.*, **2023**, *9*, 134–136 (First Reactions, *invited highlight*)

38. M. Sun, G. Szczepaniak, **S. Dadashi-Silab**, T.-C. Lin, T. Kowalewski, K. Matyjaszewski, Cu-Catalyzed Atom Transfer Radical Polymerization: The Effect of Cocatalysts, *Macromol. Chem. Phys.*, **2022**, 2200347
37. G. Szczepaniak, J. Jeong, K. Kapil, **S. Dadashi-Silab**, S. S. Yerneni, P. Ratajczyk, S. Lathwal, D. J. Schild, S. R. Das, K. Matyjaszewski, Open-Air Green-Light-Driven ATRP Enabled by Dual Photoredox/Copper Catalysis, *Chem. Sci.*, **2022**, 13, 11540-11550 (2022 Chemical Science HOT Article Collection)
36. **S. Dadashi-Silab**, E. E. Stache, A Hydrometalation Initiation Mechanism via a Discrete Cobalt-Hydride for a Rapid and Controlled Radical Polymerization, *J. Am. Chem. Soc.*, **2022**, 144, 13311–13318
35. **S. Dadashi-Silab**, K. Kim, F. Lorandi, G. Szczepaniak, S. Kramer, L. Peteanu, K. Matyjaszewski, Red-Light-Induced, Copper-Catalyzed Atom Transfer Radical Polymerization, *ACS Macro Lett.*, **2022**, 11, 376–381
34. **S. Dadashi-Silab**,* K. Kim,* F. Lorandi, D. J. Schild, M. Fantin, K. Matyjaszewski, Effect of Halogen and Solvent on Iron-Catalyzed Atom Transfer Radical Polymerization, *Polym. Chem.*, **2022**, 13, 1059-1066 (*Polymer Chemistry Recent HOT Article*)
33. M. Sun, F. Lorandi, R. Yuan, **S. Dadashi-Silab**, T. Kowalewski, K. Matyjaszewski, Assemblies of Polyacrylonitrile-Derived Photoactive Polymers as Blue and Green Light Photo-Cocatalysts for Cu-Catalyzed ATRP in Water and Organic Solvents, *Front. Chem.*, **2021**, 9, 734076
32. **S. Dadashi-Silab**, F. Lorandi, M. J. DiTucci, M. Sun, G. Szczepaniak, T. Liu, K. Matyjaszewski, Conjugated Cross-linked Phenothiazines as Green or Red Light Heterogeneous Photocatalysts for Copper-Catalyzed Atom Transfer Radical Polymerization, *J. Am. Chem. Soc.*, **2021**, 143, 9630–9638 (*highlighted on JACS Spotlights*)
31. M. R. Martinez, **S. Dadashi-Silab**, F. Lorandi, Y. Zhao, K. Matyjaszewski, Depolymerization of P(PDMS11MA) Bottlebrushes via Atom Transfer Radical Polymerization with Activator Regeneration, *Macromolecules*, **2021**, 54, 5526–5538
30. N. J. Shah, **S. Dadashi-Silab**, M. D. Galluzzo, S. Chakraborty, W. S. Loo, K. Matyjaszewski, N. P. Balsara, Effect of Added Salt on Disordered Poly(ethylene oxide)-Block-Poly(methyl methacrylate) Copolymer Electrolytes, *Macromolecules*, **2021**, 54, 1414–1424
29. F. Lorandi, S. Lathwal, M. R. Martinez, **S. Dadashi-Silab**, G. Szczepaniak, J. Cuthbert, Reflection on the Matyjaszewski Lab Webinar Series and the Rise of Webinars in Polymer Chemistry, *ACS Macro Lett.*, **2021**, 10, 54–59
28. G. Szczepaniak, M. Łagodzińska, **S. Dadashi-Silab**, A. Gorczyński, K. Matyjaszewski, Fully Oxygen-Tolerant Atom Transfer Radical Polymerization Triggered by Sodium Pyruvate, *Chem. Sci.*, **2020**, 11, 8809–8816 (*highlighted in Chemistry World*)
27. **S. Dadashi-Silab**,* I.-H. Lee,* A. Anastasaki, F. Lorandi, B. Narupai, N. D. Dolinski, M. L. Allegrezza, M. Fantin, D. Konkolewicz, C. J. Hawker, K. Matyjaszewski, Investigating Temporal Control in Photoinduced Atom Transfer Radical Polymerization, *Macromolecules*, **2020**, 53, 5280–5288
26. W. Yan, **S. Dadashi-Silab**, K. Matyjaszewski, N. D. Spencer, E. M. Benetti, Surface-Initiated Photoinduced ATRP: Mechanism, Oxygen Tolerance, and Temporal Control during the Synthesis of Polymer Brushes, *Macromolecules*, **2020**, 53, 2801–2810
25. **S. Dadashi-Silab**, K. Matyjaszewski, Iron Catalysts in Atom Transfer Radical Polymerization, *Molecules*, **2020**, 25, 1648 (*invited review*)
24. M. R. Martinez, J. Sobieski, F. Lorandi, M. Fantin, **S. Dadashi-Silab**, G. Xie, M. Olszewski, X. Pan, T. G. Ribelli, K. Matyjaszewski, Understanding the Relationship between Catalytic Activity and Termination in photoATRP: Synthesis of Linear and Bottlebrush Polyacrylates, *Macromolecules*, **2020**, 53, 59–67
23. **S. Dadashi-Silab**, G. Szczepaniak, S. Lathwal, K. Matyjaszewski, Iodine-Mediated PhotoATRP in Aqueous Media with Oxygen Tolerance, *Polym. Chem.*, **2020**, 11, 843–848
22. **S. Dadashi-Silab**, K. Matyjaszewski, Iron-Catalyzed Atom Transfer Radical Polymerization of Semifluorinated Methacrylates, *ACS Macro Lett.*, **2019**, 8, 1110–1114
21. Y. Wang, **S. Dadashi-Silab**, F. Lorandi, K. Matyjaszewski, Photoinduced Atom Transfer Radical Polymerization in ab initio Emulsion, *Polymer*, **2019**, 165, 163–167

20. **S. Dadashi-Silab**, F. Lorandi, M. Fantin, K. Matyjaszewski, Redox-Switchable Atom Transfer Radical Polymerization, *Chem. Commun.*, **2019**, *55*, 612–615
19. Y. Wang, **S. Dadashi-Silab**, K. Matyjaszewski, Photoinduced Miniemulsion Atom Transfer Radical Polymerization, *ACS Macro Lett.*, **2018**, *7*, 720–725
18. **S. Dadashi-Silab**, K. Matyjaszewski, Temporal Control in Atom Transfer Radical Polymerization Using Zerovalent Metals, *Macromolecules*, **2018**, *51*, 4250–4258
17. **S. Dadashi-Silab**, X. Pan, K. Matyjaszewski, Photoinduced Iron-Catalyzed Atom Transfer Radical Polymerization with ppm Levels of Iron Catalyst under Blue Light Irradiation, *Macromolecules*, **2017**, *50*, 7967–7977
16. Z. Wang, X. Pan, J. Yan, **S. Dadashi-Silab**, G. Xie, J. Zhang, Z. Wang, H. Xia, K. Matyjaszewski, Temporal Control in Mechanically Controlled Atom Transfer Radical Polymerization Using Low ppm of Cu Catalyst, *ACS Macro Lett.*, **2017**, *6*, 546–549
15. **S. Dadashi-Silab**, X. Pan, K. Matyjaszewski, Phenyl Benzo[*b*]phenothiazine as a Visible Light Photoredox Catalyst for Metal-Free Atom Transfer Radical Polymerization, *Chem. Eur. J.*, **2017**, *23*, 5972–5977
14. X. Pan, N. Malhotra, **S. Dadashi-Silab**, K. Matyjaszewski, A Simplified Fe-Based PhotoATRP Using Only Monomers and Solvent, *Macromol. Rapid Commun.*, **2017**, *38*, 1600651
13. **S. Dadashi-Silab**, S. Doran, Y. Yagci, Photoinduced Electron Transfer Reactions for Macromolecular Syntheses, *Chem. Rev.*, **2016**, *116*, 10212–10275
12. **S. Dadashi-Silab**, Y. Yagci, Copper(II) Thioxanthone Carboxylate as a Photoswitchable Photocatalyst for Photoinduced Click Chemistry, *Tetrahedron Lett.*, **2015**, *56*, 6440–6443
11. M. Kara, **S. Dadashi-Silab**, Y. Yagci, Phenacyl Ethyl Carbazolium as a Long Wavelength Photoinitiator for Free Radical Polymerization, *Macromol. Rapid Commun.*, **2015**, *36*, 2070–2075 (featured on MaterialsViews)
10. **S. Dadashi-Silab**, C. Aydogan, Y. Yagci, Shining a Light on an Adaptable Photoinitiator: Advances in Photopolymerizations Initiated by Thioxanthenes, *Polym. Chem.*, **2015**, *6*, 6595–6615
9. O. S. Taskin, **S. Dadashi-Silab**, J. Weber, B. Kiskan, Y. Yagci, Highly Efficient and Reusable Microporous Schiff Base Network Polymer as Heterogeneous Catalyst for CuAAC Click Reaction, *Macromol. Chem. Phys.*, **2015**, *216*, 1746–1753
8. O. Yetiskin,* **S. Dadashi-Silab**,* S. B. Khan, A. M. Asiri, Y. Yagci, Visible-Light-Induced Copper(I)-Catalyzed Azide-Alkyne Cycloaddition Initiated by Zinc Oxide Semiconductor Nanoparticles, *Asian J. Org. Chem.*, **2015**, *4*, 442–444
7. **S. Dadashi-Silab**, Y. Yar, H. Y. Acar, Y. Yagci, Magnetic Iron Oxide Nanoparticles as Long Wavelength Photoinitiators for Free Radical Polymerization, *Polym. Chem.*, **2015**, *6*, 1918–1922
6. **S. Dadashi-Silab**, B. Kiskan, M. Antonietti, Y. Yagci, Mesoporous Graphitic Carbon Nitride as a Heterogeneous Catalyst for Photoinduced Copper(I)-Catalyzed Azide-Alkyne Cycloaddition, *RSC Adv.*, **2014**, *4*, 52170–52173
5. **S. Dadashi-Silab**, M. A. Tasdelen, Y. Yagci, Photoinitiated Atom Transfer Radical Polymerization: Current Status and Future Perspectives, *J. Polym. Sci., Part A: Polym. Chem.*, **2014**, *52*, 2878–2888
4. **S. Dadashi-Silab**,* H. Bildirir,* R. Dawson, A. Thomas, Y. Yagci, Microporous Thioxanthone Polymers as Heterogeneous Photoinitiators for Visible Light Induced Free Radical and Cationic Polymerizations, *Macromolecules*, **2014**, *47*, 4607–4614
3. **S. Dadashi-Silab**, A. M. Asiri, S. B. Khan, K. A. Alamry, Y. Yagci, Semiconductor Nanoparticles for Photoinitiation of Free Radical Polymerization in Aqueous and Organic Media, *J. Polym. Sci., Part A: Polym. Chem.*, **2014**, *52*, 1500–1507
2. **S. Dadashi-Silab**, M. A. Tasdelen, B. Kiskan, X. C. Wang, M. Antonietti, Y. Yagci, Photochemically Mediated Atom Transfer Radical Polymerization Using Polymeric Semiconductor Mesoporous Graphitic Carbon Nitride, *Macromol. Chem. Phys.*, **2014**, *215*, 675–681
1. **S. Dadashi-Silab**, M. A. Tasdelen, A. M. Asiri, S. B. Khan, Y. Yagci, Photoinduced Atom Transfer Radical Polymerization using Semiconductor Nanoparticles, *Macromol. Rapid Commun.*, **2014**, *35*, 454–459

* Co-first authors | *h*-index: 28 | 2700+ citations

BOOK CHAPTERS

Y. Yagci, M. A. Tasdelen, B. Kiskan, M. Ciftci, **S. Dadashi-Silab**, O. S. Taskin, G. Yilmaz, Visible Light Induced Atom Transfer Radical Polymerization for Macromolecular Syntheses, in *Controlled Radical Polymerization: Mechanisms*, Eds. K. Matyjaszewski, B. S. Sumerlin, N. K. Tsarevsky, J. Chiefari, American Chemical Society: Washington, DC, 2015; Vol. 1187, pp 145-158 (*peer-reviewed*)

CONFERENCE PRESENTATIONS

7. **S. Dadashi-Silab**, C. Preston-Herrera, E. E. Stache, Cobalt Catalysis in Atom Transfer Radical Polymerization, *Controlled Radical Polymerization*, Charleston, SC, **2023** (*poster presentation*)
6. **S. Dadashi-Silab**, K. Matyjaszewski, Investigating Temporal Control in Atom Transfer Radical Polymerization, *Gordon Research Conference (GRC Polymers)*, Mount Holyoke College, South Hadley, MA, **2019**
5. **S. Dadashi-Silab**, K. Matyjaszewski, External Control in Atom Transfer Radical Polymerization, *257th ACS National Meeting*, Orlando, FL, **2019** (*Excellence in Graduate Polymer Research Symposium*)
4. **S. Dadashi-Silab**, X. Pan, K. Matyjaszewski, Visible Light-Induced Atom Transfer Radical Polymerization, *254th ACS National Meeting*, Washington, DC, **2017** (*poster presentation*)
3. **S. Dadashi-Silab**, Y. Yagci, Copper(II)-thioxanthone: a photoswitchable catalyst for the copper(I)-catalyzed azide-alkyne cycloaddition, *International Symposium on Polymers from Renewable Resources*, **2015**, Istanbul (*poster presentation*)
2. **S. Dadashi-Silab**, H. Bildirir, R. Dawson, A. Thomas, Y. Yagci, Microporous Thioxanthone Polymers as Heterogeneous Photoinitiators for Visible Light Induced Free Radical and Cationic Polymerizations, *5th EuCheMS Congress*, **2014**, Istanbul (*poster presentation*)
1. **S. Dadashi-Silab**, H. Eslami, Synthesis of Large Poly(Methyl Methacrylate) and Various Nonspherical Shaped Particles via Dispersion and Seeded Dispersion Polymerization, *10th International Seminar on Polymer Science and Technology*, **2012**, Tehran (*oral presentation by Dr. H. Eslami*)

AWARDS & PROFESSIONAL ACTIVITIES

Awards and fellowships:

- Excellence in Graduate Polymer Research Award (ACS 2019)
- Mellon College of Science Travel Award (2019)
- John and Nancy Harrison Legacy Graduate Fellowship in Chemistry and Biochemistry (2020)

Memberships:

- American Chemical Society (ACS), ACS Poly and PMSE Divisions
- Royal Society of Chemistry (RSC)
- American Association for the Advancement of Science (AAAS)

Service and outreach:

- Reviewer for scientific journals
- Co-organizer of the Matyjaszewski Lab Webinar Series 2020