

Guliz Ersoy Ozmen, PhD

Postdoctoral Fellow

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Summary

PhD Organic Chemist and Research Scientist with over seven years of experience designing and synthesizing small molecules and fluorescent probes for biomedical imaging and drug delivery applications. Expertise in multi-step organic synthesis, reaction optimization, purification using chromatographic techniques (column, PuriFlash, HPLC), structural characterization via NMR and mass spectrometry. Published researcher, experience in leading projects independently and leading a team, mentoring trainees and collaborating with multidisciplinary teams.

TECHNICAL EXPERTISE

- Small molecule synthesis / multistep synthesis
- Fluorophore (NIR I and NIR II) design
- Single crystal growing
- Microwave synthesis
- Peptide synthesis
- Small molecule-peptide conjugation
- Purification with column chromatography, HPLC and LC-MS
- Characterization of small molecules using ^1H , ^{13}C , ^{19}F NMR, COSY
- HPLC
- FT-IR
- ICP-MS
- Low- and high-resolution Mass Spectrometry
- GC
- Double Beam UV-Visible Spectrophotometer
- Fluorescence Spectrophotometer
- GraphPad Prism
- Microsoft Word, Excel, Power Point
- MestreNova
- Computational Modelling (Gaussian, Spartan, Orca)

PUBLICATIONS

Published

- C. Seudieu, **Guliz Ersoy Ozmen**, Imran Khan, Maged Henary, Kathryn B. Grant, Syntheses, DNA interactions, and photodynamic antimicrobial properties of near-infrared indolium carbocyanine dyes, **RSC Adv.**, **2026**, 16, 21908-21924, DOI: [10.1039/D6RA01566B](https://doi.org/10.1039/D6RA01566B).
- **Guliz Ersoy Ozmen**, Maged Henary, Roadmap for Designing Donor-Acceptor Fluorophores in UV-vis and NIR Regions: Synthesis, Optical Properties and Applications, **Biomolecules**, 15(1), 119 **2025**, <https://doi.org/10.3390/biom15010119>.
- Homan Kang, Seung Hun Park, **Guliz Ersoy Ozmen**, Jason Dinh, Vy Nguyen, Haoran Wang, Sung Ahn, Atsushi Yamashita, Wesley R. Stiles, Satoshi Kashiwagi, Kai Bao, Maged Henary, and Hak Soo Choi. Cartilage Targeting Fluorophores for Early Detection of Arthritis in NIR-II Window. **Chem**, **2025**, DOI: [10.1016/j.chempr.2025.102481](https://doi.org/10.1016/j.chempr.2025.102481).
- **Guliz Ersoy Ozmen**, Z. Gul, M. Henary, Opinion on Cyanine Dye Conjugates for Biomedical Applications, **Determinations in Nanomedicine and Nanotechnology**, 3, 2, 2832-4439 **2024**.

- S. Casa; **Guliz. Ersoy Ozmen**, M. Henary, (Z)-3-(Dicyanomethylene)-4-((5-fluoro-3,3-dimethyl-1-(3-phenylpropyl)-3H-indol-1-ium-2-yl) methylene)-2-(((E)-5-fluoro-3,3-dimethyl-1-(3-phenylpropyl) indolin-2-ylidene) methyl) cyclobut-1-en-1-olate. *Molbank*, **2023**, M1576, <https://doi.org/10.3390/M1576>.
- Z. Essam#, **Guliz Ersoy Ozmen**#, Setiawan, D.; Hamid, R. R.; Abd El-aal, R.; Aneja, R.; Hamelberg, D.; Henary, M., Donor Acceptor Fluorophores: Synthesis, Optical Properties, TD-DFT and Cytotoxicity Studies. *Organic & Biomolecular Chemistry*, **2021**, <https://doi.org/10.1039/d0ob02313b>.

Intellectual Property

- **G. Ersoy Ozmen**, S. Sarasiya, M. Henary, Synthesis of Uracil Hemicyanine Dyes via Unexpected Donor Acceptor Intermediate, Georgia State University, **2025**.

Under Preparation

- **G. Ersoy Ozmen**, Krishna Prasad Bhattarai, Minghui Kong, Yuanning Feng, Topological Design of Woven Inspired Covalent Organic Frameworks, *IJC Invited Review*, **2026**.
- **G. Ersoy Ozmen**, Yuanning Feng, Integrating Molecular Recognition and Near-Infrared Fluorescence in a Cyanine Macrocyclic, **2026**.

RESEARCH EXPERIENCE

Postdoctoral Research Fellow, University of Oklahoma, OK, USA

Advisor: Dr. Yuanning Feng

March 2026 – August 2026

- Designed and synthesized novel supramolecular box and cage molecules
- Developed multistep synthetic routes and optimized reaction conditions to improve product yield
- Performed computational studies on cocrystal and box structures using Gaussian 16

Postdoctoral Research Fellow, University of Oklahoma Health Sciences Center, OK, USA

Advisor: Dr. Lacey McNally

August 2025 – February 2026

- Synthesized NIR probes for optoacoustic imaging
- Developed methods to scale up the synthesis of clinical trial agents
- Performed computational studies with target protein and probe using AutoDock Vina

Doctor of Philosophy in Chemistry, Georgia State University (GSU), Atlanta, USA

Advisor: Dr. Maged Henary

August 2021 – August 2025

- Designed and synthesized 100+ NIR I and NIR II small molecules / dyes / probes for bioimaging applications.
- Characterized synthesized molecules using ^1H , ^{13}C , ^{19}F NMR, HRMS and LC-MS.
- Studied the properties of molecules using FTIR, UV-vis and fluorescence spectroscopy.
- Collaborated with multidisciplinary teams to evaluate biological imaging performance in vitro and in vivo.
- Performed computational studies on small molecules using Spartan and Gaussian 16.
- Published findings in *Chem*, *Biomolecules*, *Organic and Biomolecular Chemistry* and *RSC Advances*.

Master of Science in Organic Chemistry, Georgia State University, Atlanta, USA

Advisor: Dr. Maged Henary

August 2019 – July 2021

Master of Science in Analytical Chemistry, Middle East Technical University (METU), Ankara, Türkiye

August 2017 – August 2019

Bachelor of Science in Chemistry, METU, Ankara, Türkiye

August 2011-June 2017

WORK EXPERIENCE

Instructor, Chem 1211, Principles of Chemistry I Lab

Department of Chemistry, Georgia State University

January 2024 – August 2025

Graduate Teaching and Research Assistant (GRA)

Research and Development Chemist

Nanografi NanoTechnology, Ankara, Türkiye

January 2018 – August 2019

PRESENTATION AND CONFERENCES

- **G. Ersoy Ozmen**, Maged Henary, Oral Talk: Lighting Up Cartilage Tissue with Fluorescent Molecules, **GSU Graduate Conference 2025**
- **G. Ersoy Ozmen**, H. Kang, S. H. Park, J. Dinh, H. Wang, W. Hur, V. Nguyen, S. Ahn, A. Yamashita, W. Stiles, H. Choi, M. Henary, Poster Presentation: Positively Charged NIR Fluorophores for Cartilage Targeting, **Biological Stain Conference 2024**
- **G. Ersoy Ozmen**, B. MacCuaig, L. McNally, M. Henary, Poster presentation: Tailored Hemicyanine Dyes as Potential Optoacoustic Imaging Probes, **SERMACS 2024**
- **G. Ersoy Ozmen**, Henary, M.*, Oral Talk: Red Shifted Donor Acceptor Fluorophores as Potential Theranostic Agents for Breast Cancer, **Chemistry Graduate Research Symposium 2023**
- **G. Ersoy Ozmen**, Henary, M.*, Poster Presentation: Red Shifted Donor Acceptor Fluorophores as Potential Theranostic Agents for Breast Cancer, **Chemistry Graduate Research Symposium 2023**
- **G. Ersoy Ozmen**, Setiawan D., Hamid R., Aneja R., Hamelberg D., Henary M., Cytotoxicity of Red Shifted Donor Acceptor Fluorophores Against Triple Negative Breast Cancer Cells, **GSU Graduate Conference, 2022**
- **G. Ersoy Ozmen**, Setiawan D., Hamid R., Aneja R., Hamelberg D., Henary M., Modified Donor Acceptor Fluorophores as Potential pH Sensitive Probes, **Biological Stain Conference, 2022**
- Essam, Z.; **Ozmen, G. E.**; Setiawan, D.; Hamid, R. R.; Abd El-aal, R.; Aneja, R.; Hamelberg, D.; Henary, M., Donor Acceptor Fluorophores: Synthesis, Optical Properties, TD-DFT and Cytotoxicity Studies, **GSU Chemistry Graduate Student Symposium, 2021**
- **Ozmen, G.E.**; Essam, Z.; Setiawan, D.; Hamid, R. R.; Abd El-aal, R.; Aneja, R.; Hamelberg, D.; Henary, M., Red Shifted Donor Acceptor Fluorophores as Potential Agents for Biomedical Applications, **Southeastern Regional ACS Meeting, 2021**

COMPETITIVE AWARDS

- Alfons L. Baumstark **PhD Fellowship**, Georgia State University, 2025
- Al Baumstark Chemistry **PhD Fellowship**, Georgia State University, 2024
- Molecular Basis of Disease Graduate **Fellowship**, Georgia State University, 2023- 2025
- David W. Boykin Graduate **Fellowship** in Medicinal Chemistry-PhD Level, Georgia State University, 2023
- Best Teaching Assistant, PhD level, Georgia State University, 2022
- Chemistry Graduate Student Association Oral Presentation Award, 2021