



Molly E. Payne Ph.D.*

Patent Agent

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Dr. Molly Payne is a registered patent agent in the Firm's New Orleans office and is also a member of the Firm's Intellectual Property Group.

Dr. Payne concentrates her practice on U.S. patent prosecution for the physical science, life science, pharmaceutical, and biotechnology industries. With her diversity of technical knowledge, Dr. Payne provides clients with a unique perspective that bridges the physical and life sciences with patent prosecution strategy and global portfolio management.

Having earned her Ph.D. in Chemistry (Organic/Polymer) from Tulane University as a Louisiana Board of Regents Graduate Student Fellow, Dr. Payne's Ph.D. dissertation focused on synthesis and characterization of synthetic polymers with biological applications. As a senior doctoral student, she led a consulting project with a major microdevices company characterizing batch samples and presenting findings to their research and development team.

Dr. Payne's areas of technical knowledge encompass chemistry, polymer science and engineering, polymer and polymeric materials characterization, polymer chemistry, organic and polymer synthesis, analytical chemistry, organic chemistry, chemical biology, bioorganic chemistry, biotechnology, pharmaceuticals, molecular biology, biochemistry, immunotherapies, small molecule therapies, biomedical devices, and analytical devices.

Prior to joining Baker Donelson, Dr. Payne held internship positions with:

- an industrial chemical reaction monitoring start-up conducting prior art searches and providing research assistance and documentation preparation for Freedom to Operate Analysis
- Tulane Office of Technology Transfer and Intellectual Property evaluating technologies for commercialization potential, drafting provisional patent applications, and conducting market research analysis
- a major pulp and paper manufacturer

Dr. Payne is the first author and supporting author for numerous peer-reviewed publications, as well as an invited author for a technical spotlight by a major chemical distributor. She has presented numerous poster and oral presentations at national chemistry and physics conferences.

Professional Honors & Activities

- Member – American Chemical Society (2013 – present)
- Executive Vice President (Elected) – Tulane Graduate and Professional Student Association (2016 – 2018)
- Chair – Tulane's Women in Science and Engineering (WISE) (2016 – 2017)

Publications

- Lead Author – "Spectrometry Investigation into the Oxidative Degradation of Polyethylene Glycol," *Polymer Degradation and Stability* (2021)

- Lead Author – "Comparison of Crosslinked Branched and Linear Polyethyleneimine Microgel Microstructures and Its Impact in Antimicrobial Behavior, Metal Chelation, and Carbon Dioxide Capture," *ACS Applied Polymer Materials* (2020)
- Contributing Author – "Synthesis and Characterization of Poly lactide – PAMAM 'Janus-Type' Linear-Dendritic Hybrids," *Journal of Polymer Science Part A Polymer Chemistry* (2019)
- Lead Author – "Characterization of Synthetic Polymers via Matrix Assisted Laser Desorption Ionization Time of Flight (MALDI-TOF) Mass Spectrometry," *Journal of Visualized Experiments* (2018)
- Lead Author – "MALDI-TOF Characterization of Functionalized Polymers," *Sigma-Aldrich Technical Spotlight* (2017)
- Contributing Author – "The synthesis of cyclic poly (ethylene imine) and exact linear analogs: an evaluation of gene delivery comparing polymer architectures," *Journal of the American Chemical Society* (2015)



Education

- Tulane University, Ph.D. in Chemistry (2019)
 - Louisiana Board of Regents Graduate Student Fellowship (2014 – 2018)
- University of Tennessee, Knoxville, B.S. in Chemistry and Biological Sciences – Concentration in Biochemistry, Cellular and Molecular Biology (2014), *cum laude*
 - University of Tennessee Chancellor's Honors Program (2010 – 2014)



Admissions

- U.S. Patent and Trademark Office, 2022

* Baker Donelson professional not admitted to the practice of law.