

Biography

Dr. Aaron Bruckbauer is an applied R&D engineer and polymer scientist with expertise in formulation, process development, and scale-up of bio-based material systems. Specializing in the development of high-performance bio-based and biodegradable polyurethane systems including foams, elastomers and coating that replace petroleum incumbents. Currently, Aaron serves as a Senior Polymer Chemist at Algenesis, leading the end-to-end R&D and commercialization of advanced bio-based polyurethane materials. With an emphasis on design-of-experiments and processing, including injection molding, reactive extrusion, twin-screw extrusion and 2K mixing systems. In product commercialization and scale-up, Aaron leads manufacturing qualification efforts for their partners in the U.S, Asia, and Europe. In his role at Algenesis, Aaron has also worked to establish and certify the company's ISO 14001 Environmental Management System, and is currently establishing the company's ISO 9001 quality management systems for process controls and operational excellency.



Prior to joining Algenesis, Aaron earned his doctorate at UC San Diego, where he pioneered the formulation of 100% bio-based polyurethane systems made from plant sources. The work led to two pending patents and multiple first author publications in Chemistry of Materials, Macromolecules, and more. During his time at UCSD, Aaron assisted R&D collaborations with industry and national laboratories on bio-based polymer systems and their plausibility at commercial scale. He also served as the Materials Research and Science Engineering Team Lead for the National Science Foundation MRSEC program at UCSD, where he fostered collaboration and strengthened trainee development of more than 20 graduate level researchers and organized symposia to promote collaborative research between academia and industry.

Aaron earned his Ph.D. in Chemistry and Biochemistry and an MBA certificate from the Rady School of Management at UC San Diego in 2025 and a B.S. in Chemistry, with Departmental Honors, from the University of Wisconsin-Eau Claire in 2021. He is a 2024 AlgePrize Finalist, 2025 AlgaePrize Grand Champion and an NSF Graduate Research Fellow. Aaron also frequently speaks on topics related to sustainable materials at events such as TEDxEncinitasBlvd and was the keynote speaker for Zero Plastic 2040 Forum. Dedicated to supporting early-stage innovation and future founders, Aaron also serves as a mentor for The Basement program at UC San Diego.