

Matthew Egbe

Norristown, PA 19403

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Scientist and Principal Chemist

A scientist and principal chemist with 25 years of experience in support of the semi-conductor, plastics, emulsion polymerization, latex and organic chemical industries. Expertise includes synthetics, polymer, organic, physical and photo research and development, new products and innovation, life cycle management, deployment, technology implementation, prototyping, project management, sustainability, REACH/TSCA management, collaboration and team leadership. Known for solving complex technical challenges leading to revenue breakthroughs.

Willing to relocate: Anywhere

Authorized to work in the US for any employer

Work Experience

Adjunct Faculty Member

Alvernia University - Reading, PA

August 2022 to Present

I am an Adjunct Faculty member at ALVERNIA UNIVERSITY teaching in the Chemistry department. I am teaching General Chemistry and Organic Chemistry

Senior Analytical Chemist / Senior R&D Manager

Custom Processing Services - Reading, PA

May 2022 to Present

Method development in hemp analysis including terpenes, potency (cannabinoids), residual solvents, pesticides, mycotoxins, and heavy metals using GC/MS, HPLC, LC/MS/MS and ICP/MS. Get the company prepared for ISO17025 certification.

Adjunct Faculty, Department of Chemistry

TEMPLE UNIVERSITY - Philadelphia, PA

January 2017 to Present

- Teach both undergraduate and graduate level courses

Scientist and Principal Chemist - Consultant

MIE CONSULTING - Norristown, PA

January 2015 to Present

Provide a research services within emphasis in polymer synthesis, formulation, UV-/light and photo curing, adhesives/pressure sensitive adhesives.

- Spent 2 years helping a start-up company to synthesizing monomers and polymers for adhesives.
- Helping the start-up company to developing underwater water adhesives.
- Developed a class of emulsion polymer for coating applications.
- Developed a class of pressure sensitive adhesives acrylics polymers/co-polymers.
- Developed formulations for adhesives and pressure sensitive adhesive tapes.

- Developed an acrylic polymer synthesis and formulation resulting in \$2M of new annual revenues.
- Help developed biobased monomers and oligomers for 3D printing formulation.
- Synthesize as well identify appropriate curing agents for 3D printing.
- Resolved 3D photo curing wavelength issue by developing new adhesives, dental resins and acrylic/acrylate coating resulting in \$500K reduction in R&D costs and opening up a new market segment.
- Solved a latex coating emulsion quality issue that prevented the manufacturing of product.
- Design and develop new fluoropolymers.
- Develop new polyurethanes.

Technology Manager - Electronics Division

January 2013 to December 2015

Responsible for the development, implementation, integration, continuous improvement and assessment of sustainability practices to reduce waste, improve customer satisfaction and create renewable revenue streams. Coached team of three (3) scientist, managed an annual budget of \$15M and provided reports to

Matthew Egbe mattegbe@comcast.net executive leadership. Identified and addressed commercial EHS needs, REACH, TSCA and regulatory issues.

Served as consultant to the polymer group in designing and synthesis of monomers for vinyl polymers and polyolefins.

- Initiated and led helium recovery project that reduced client emission levels and allowed for the recapture of helium leading to \$500K of new revenues annually.
- Led ceria slurry reclaim and reformulation project leading to a reduction of \$100K in annual waste costs.
- Resolved a chemical mechanical planarization polisher recovery ceria issue that saved \$155K annually.
- Developed a class of fluoropolymer emulsion for high performance coatings.

AIR PRODUCTS AND CHEMICALS, INC. - Allentown, PA

January 2004 to December 2015

A global industrial gas firm with \$10B+ in revenue and 16,000 employees.

R&D Manager - Advanced Chemical Technologies

January 2004 to December 2013

Managed all aspects of global research and development support in support of the Back End of Line (BEOL) high-value strippers and cleaners. Also help synthesize and develop for high performance coatings working with the polymer group. Responsible for product lifecycle management including the stage gate process, cross-functional leadership, best practices, business and technology integration, competitive analysis and IP management. Managed the pilot production plant and scale-up lab. Supported both marketing and external customers. Hired and trained a team of ten (10) scientists and budget of \$20M.

- Synthesized and developed a class of emulsion polymers for high performance coatings.
- Synthesis and development of Pressure Sensitive Adhesive (PSA) formulation for PSA Tapes.
- Development of low temperature PSA formulations.
- Synthesis and formulation of novel acrylic pressure sensitive adhesive composition.
- Synthesize novel monomers for 3D printing applications.
- Synthesize polymers for formulations of biodegradable 3D products.
- Formulate 3D printing for different applications.
- Developed and introduced ten (10) new products leading to a 10% increase or \$12M in new revenues.
- Invented the NE stripper product that resulted in significant improvement in safety of a highly hazardous chemical and resulted in \$2M in new annual revenues.

- Provided critical support in starting up the pilot production plant, scale-up lab and process optimization.
- Translated and integrated new technology to commercial successes.
- Initiated RCA (Root Cause Analysis) and FMEA (Failure Mode and Effects Analysis) within team.
- Hired and mentored three (3) team members including two (2) PhD scientists and one (1) senior chemist.

Senior Staff Development Chemist

ASHLAND, INC (Advanced Chemical Technologies Business Unit purchased by Air Products)

January 1998 to December 2004

Responsible for technical leadership for management of strategic accounts relationships, new product launches, competitive benchmarking and co-supplier relationships to support sales growth and new product development. Created technical data packages, presentations and sales tools. Maintained strong relationships with customers and suppliers. Performed laboratory work as required. Promoted from Staff

Development Chemist

3M

January 2002 to December 2002

- Developed and introduced five (5) new products leading to of \$21.3M in new annual revenues.
- Increased annual revenues by \$500K by inventing novel product for cleaning high-k devices.
- Invented and developed a new product for copper technology resulting in \$15M of new revenues.
- Increased annual revenues by \$2M by inventing a new product for single wafer tool.
- Developed a new product for a new ultra-low-k device resulting in \$5M to annual revenues.
- Invented a processing flexible chip device resulting in \$800k in new annual revenues.

Senior Process Engineer - Semiconductor Systems Division

AXCELIS TECHNOLOGIES (acquired by Eaton Corporation and formally known as Fusion)

January 1997 to December 1998

Responsible for developing processes, making technical recommendations, troubleshooting and identifying improvement opportunities to improve existing products in manufacturing.

- Resolved a multi-million-dollar process recipe issue by developing a new photostabilization process for post lithographic resist processing that improved resist for etch and implant and thermal curing.
- Developed a plasma chemistry for etch tools resulting in \$1M+ in new revenues.

Program Manager/Senior Research Chemist

MICROLITHOGRAPHY CHEMICAL CORPORATION - Newton, MA

January 1995 to December 1997

Responsible for the research and development of 193 nm resist and new generation of 248 nm resist

- Developed a new photoresist for 193 nm technology resulting in \$100k of new annual revenues.
- Invented a new class of onium salts synthesized leading to new annual revenues of \$50k.
- A new set of monomers were synthesized and developed for next generation of resists.
- The monomers were also developed for 3D printing applications.

Senior Research Scientist

POLAROID CORPORATION - Waltham, MA

January 1990 to December 1995

Exploratory research in synthesis and development of acrylic polymers and other water-soluble polymers using solution polymerization, emulsion polymerization, bulk polymerization and suspension polymerization. Mentored a team including two (2) research scientists and two (2) associate scientists.

- Synthesized a new monomer and emulsion polymer which was formulation to coat the aqueous-L of the photographic film resulting in new annual revenues of \$300k.
- Invented a novel monomer and emulsion polymer for the receiving layer of the instant photographic film.

Assistant Professor in Chemistry

Southern University - Baton Rouge, LA

Summer Research Fellow

U.S. Department of Energy - Bartlesville, OK

Post-Doctoral Research Fellow

Louisiana State University - Baton Rouge, LA

Post-Doctoral Research Fellow; Teaching and Research Assistant

Mississippi State University - Starkville, MS

Education

Ph.D. in Chemistry

Mississippi State University - Starkville, MS

August 1985 to August 1989

B.S. in Chemistry

Southern University - Baton Rouge, LA

August 1977 to August 1982

Skills

- Polymers and Synthetics
- New Market Penetration
- New Product Development
- Sustainability
- Physical and Photo
- Team Leadership
- Process Engineering
- Project Management
- Analytical
- Emulsion polymerization.
- Organic Synthesis
- Latex technology SAP, CAD
- "Composition for removing photoresist and/or etching residue from a substrate and use thereof"
- Blackboard
- Scientific research
- Laboratory experience

- Teaching

Links

<http://www.linkedin.com/in/mattegbe>

Certifications and Licenses

PMP

Lean Six Sigma Green Belt