ERIK ANDERSON, PH.D.

Education

B.S. - Chemistry, Gustavus Adolphus College, St. Pater, MN

M.S. – Biological Science, University of Minnesota, Twin-cities

Ph.D. – Biosystems Engineering, University of Minnesota, Twin-cities

Professional Experience

Erik Anderson joined SCS Energy in 2023 as a Senior Project Manager. He has 14 years of engineering and process design experience in the renewable fuels sector, including anaerobic digestion, biodiesel, and gasification/pyrolysis technologies. He has worked on projects from concept development through front-end engineering design and construction management. His body of work includes modeling of renewable energy technologies for technological and economic due diligence or life-cycle analysis. Feasibility assessment combined with lab-scale testing and analytics. Engineering and design of pilot and commercial scale anaerobic digestion systems focused on waste reduction and renewable energy production.

He is named inventor on several U.S. patents related to bio energy and served as commissioner on the National Biodiesel Accreditation Committee from 2014-2021.

Anaerobic Digestion (AD) Projects

Techno-economic Due Diligence Study for Anaerobic Digestion– Brush, CO – Complete engineering and financial review of a feed-lot manure to RNG anaerobic digestion study for client investors. Project was scaled at over 75,000 head of cattle feeding into an AD biogas to RNG sales model.

Engineering Review for Chicken Manure to RNG plant with Ammonia Removal– Netherlands, EU – Engineering and financial review of a chicken manure to RNG anaerobic digestion study for client investors. Project was sized for 200 tons/yr of feed into an AD biogas to RNG sales model.

Anaerobic Digestion Design Feasibility Study for Beef Slaughterhouse Wastewater– Corpus Christi, TX – Project feasibility and design work for beef slaughterhouse wastewater, integrating with current water treatment technologies. Co-digestion of multiple slaughterhouse waste streams considered for energy and RNG generation.

Two-stage Anaerobic Digestion of Food Waste and Wastewater– Kerman, CA – Complete engineering design of an 800 cfm above ground AD project using food waste sourced from local processors. Project included upfront material loading, AD engineering and design.

Anaerobic Digestion of Meat and Bone Meal – Vernon, CA – Complete engineering design of a 1 MW above ground AD project using a combination of Meat and Bone Meal and waste from an animal rendering plant. Project included upfront material loading, AD engineering and design, and biogas processing.

Single and Two-stage Anaerobic Digestion Study of Multiple Substrates – Minneapolis, MN – 2-year research project focused on optimizing AD for several organic waste substrates e.g., animal manure,

meat and bone meal from animal renderings, and food wastes. Research and testing of pilot-scale digesters with varying substrate loadings and operational parameters for optimal design scaling.

Ammonia Stripping of AD Manure Effluent – St. Paul, MN – Designed, built, and operated pilot-scale continuously-stirred anaerobic digester coupled to a circulating vacuum flash evaporator to remove ammonia levels and promote high solids loading.

Other Projects

8 MMGPY Biodiesel Plant Expansion – San Diego, CA – Process design engineer for a 4 to 12 MMGPY grant expansion project, including Mass and Energy Balance, PFDs, P&IDs, FDS, Instrument & Equipment List, and Layout.

Flash Evaporative Drying of Used Cooking Oil (UCO) – San Diego, CA – Designed and built a continuous flash distillation system with reflux to dry vegetable oil prior to entering methyl ester production facility. System currently operates commercially at 12 MMGPY.

Tru-Zero, LLC's Zero-liquid Discharge Technology – Bakersfield, CA – Designed, engineered, and fabricated a 25,000 gpd automated water-processing and remediation technology. A skid-mounted reverse osmosis-coupled flash evaporation system was commissioned based on pilot-scale development work. The system included heating and cooling utilities.

Microwave-Assisted Pyrolysis – St. Paul, MN – Pilot-scale development; design, engineering, and fabrication of two generations of systems; a 15 kg/hr and an 80kg/hr biomass to syn-gas pyrolysis reactor, based on parameters outlined in the first patent listed below.

Microwave-Assisted Gasification – St. Paul, MN – Pilot-scale development; design, engineering, and fabrication of a 6 kg/hr gasification system. Scale-up parameters were obtained from empirical lab research.

Intense-Pulsed Light (UV) System – St. Paul, MN – Pilot-scale system development for bacterial reduction in food powder.

Patents & Applications

U.S. Patent No. US 17/498,287. (n.d.). Washington, DC: U.S. Patent and Trademark Office. System and Method of Recovering Methyl Esters from Biodiesel Vacuum Distillation Bottoms Using Microwave-Assisted Pyrolysis.

U.S. Patent No. US 9745530B2. (2021). Washington, DC: U.S. Patent and Trademark Office. Production of Biodiesel from Scum.

U.S. Patent No. US 63/224,245 and 63/232,566. (n.d.). Washington, DC: U.S. Patent and Trademark Office. Multiple Product Pathway from Renewable Oils to Petroleum Alternatives and Lubricants Comprising Same.

U.S. Patent No. US 17/810,475. (2022). Washington, DC: U.S. Patent and Trademark Office. Water Reclamation System Using Oil as a Heat Transfer Medium and Liquid Salt Collector.