

RON OZER

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INNOVATIVE CHEMICAL ENGINEER

Accelerate Process Development Via Quality Research, Design Experimentation, Mitigating Risk and Driving Rapid Commercialization

Versatile and creative consultant, strong in technical know-how, judgement, networking and organization. Responsive and approachable, listening to clients, understanding needs and identifying right approach. Communicate effectively with all levels, especially chemists. Technologically-savvy, innovative and safety-focused, motivating and supervising teams, developing processes for next level.

EXPERTISE IN:

- Renewable chemistry and biofuels
- Catalysis and reaction engineering
- Conceptual engineering and basic data
- Distillation
- Workstream development
- Scale-up from lab to pilot plant

PROFESSIONAL EXPERIENCE

Ron Ozer Consulting LLC, Arden, Delaware – Owner

2016 – Present

Adjunct Faculty, School of Chemical and Biochemical Engineering, University of Delaware, Newark, Delaware & Affiliated Professional, Catalysis Center for Energy Innovation

2016 – Present

DUPONT, Experimental Station, Wilmington, Delaware

2007 – 2016

Principal Investigator

Research team leader for 3 major efforts in Central Research and Development determining technological feasibility and demonstrating process chemistry at semiworks and pilot scale

- Led joint venture pilot plant development collaborative team between ADM and DuPont, conceiving and implementing recently announced new initiative for improved PET bottles, significantly accelerating process demonstration in crucial step due to impact on design and operation of laboratory reactor.
- Led technology development of new processes for Guerbet catalytic reaction of ethanol to butanol and higher alcohols for fuels and solvent markets.
- Licensed patents to startup firm for commercialization of technology closely related to laboratory experimentation.
- Invented Biofuels technologies, enabling production of diesel additives from ethanol with fuels showing excellent properties but not economical for commercialization thus far.
- Directed workstream for liquid and vapor phase catalytic process development of furfural derived chemicals for monomer applications resulting in design build and operation of pilot facility and readiness for commercialization with site partner identified.
- Functioned as technical guardian for above described pilot plant operations (catalytic focus) in China for DuPont with 3 extended trips in 2013, supervising Chinese personnel in person and remotely from US.

Pilot Plant Leader

Created laboratory and pilot plant experimental designs leading to development of new pigment processes through innovative milling techniques. Supervised technicians and pilot plant operators, interfaced with chemists, sales and marketing and product development teams.

- Mastered rapid learning curve in new technology for pigment finishing for coatings and plastics industries, growing into leading coating and color science projects for paints and plastics.
- Demonstrated large-scale pilot plant implementation (Netzsch Mill) for new technology with quick success, achieving plant implementation and startup.
- Developed 4 new pigment products from laboratory to pilot to commercial. These products directly led to the commercial implementation described above.
- Performed as technology expert for new finishing process, leading to fully implemented \$7M 2007 capital project.

**DUPONT NYLON (then INVISTA®), Sabine Labs, Orange, Texas and
Experimental Station, Wilmington, Delaware**

1990 – 2005**Engineering Associate**

Devised planning experiments, analyzing and reporting results and planning technology development for long range R&D. Supervised shift crews of technicians and mentored chemists and engineers in area. Directed control system design and implementation for ABB / Bailey and Rockwell PLC systems in 8 different major units.

- Completed 10 years of laboratory work and wrote first patents, resulting in INVISTA patents now being commercialized as new adiponitrile technology in China.
- Brought new product from lab to pilot plant to toll manufacturing for Nylon specialties business.. ultimately at > \$4M per year revenue.
- Specialized in statistically designed process development for scale-up, overseeing experimental planning for semiworks operations including Six Sigma-based evaluation of process variability.
- Led process area for investigation of economic opportunities in Nylon intermediates research, building and operating 2 major pilot facilities at small scale for technology evaluation.
- Administered all process hazard evaluations by leading safety reviews, writing safety procedures and conducting what-if analyses for 5 unit startups at Orange, Texas Lab R&D for Nylon business.
- Interfaced between discovery chemist function and commercialization engineering, patenting discoveries in 2 steps of new Caprolactam process.
- Orchestrated joint technical effort for major research project between DuPont and DSM Caprolactam (Geleen, The Netherlands). Joint DuPont – DSM patents resulted from this effort, as well as technology reports.
- Designed, constructed and operated pilot facility for new technology demonstration as part of DSM joint effort – US and Netherlands sites. Process feasibility was demonstrated, final techno-economic analysis led to project early termination after patenting and documentation.
- Evaluated technology utilizing flowsheeting, economic analysis, and results interpretation, developing competitive intelligence for relevant patent estate.

EDUCATION

- **Doctor of Philosophy (PhD)**, Chemical Engineering, Focus: Catalysis and Kinetics, Cornell University, Ithaca, New York
- **Bachelor of Chemical Engineering (BChE)**, University of Delaware, Newark, Delaware

COURSES

- Crystallization
- Reactive Distillation
- Strategy of Experimentation
- ASPEN Plus Flowsheet Simulation
- Six Sigma Green Belt Certified

COMMUNITY INVOLVEMENT

Negotiate contracts and produce 20 concerts annually for Arden Gild Hall (300 capacity) in Arden, Delaware with all-volunteer staff to raise over \$20K annually for community organization.

LIST OF PATENTS AND PUBLICATIONS

- 5 as yet unpublished patent applications not included
- Paul Joseph Fagan, Thomas G Calvarese, Ronald James Davis and Ronnie Ozer, "Conversion of ethanol to a reaction product comprising 1-butanol using hydroxyapatite catalysts" US Patent 9,211,529; December 2015
- David Richard Corbin, Paul Joseph Fagan, Ronnie Ozer, Bhuma Rajagopalan and Eric J. Till, "Process for the production of furfural" US Patent 9,181,211; November 2015
- Paul Joseph Fagan, Ronnie Ozer, Eric J. Till, "Process for the production of furfural" US Patent 9,181,209; November 2015
- Ronnie Ozer (sole inventor), "Vapor-phase decarbonylation process" US Patent 9,067,904; June 2015
- David Richard Corbin, Ronnie Ozer et. Al., "Process for the production of furfural" US Patent 9,012,664; April 2015
- Paul Joseph Fagan, Thomas G. Calvarese, Ronald James Davis, Ronnie Ozer, "Conversion of ethanol to a reaction product comprising 1-butanol using hydroxyapatite catalysts" US Patent 8,962,896; February 2015
- Ronnie Ozer and Ke Li, "Vapor-phase decarbonylation process" US Patent 8,754,245; June 2014
- Ronnie Ozer and Ke Li, "Vapor-phase decarbonylation process" US Patent 8,710,251; April 2014
- Ronnie Ozer and Ke Li, "Decarbonylation process" US Patent 8,653,287; February 2014
- Ronnie Ozer, Paul Joseph Fagan, Thomas G. Calvarese, "Conversion of butanol to a reaction product comprising 2-ethylhexanol using hydroxyapatite catalysts" US Patent 8,431,753; April 2013
- Ke Li and Ronnie Ozer, "Vapor-phase decarbonylation process" US Patent 8,404,871; March 2013
- Ronnie Ozer and Michael B. D'Amore, "Process for making a composition comprising at least two different dialkyl ethers" US Patent 8,398,728; March 2013

- Kostantinos Kourtakis, Ronnie Ozer, Michael B. D'Amore, "Process for producing guerbet alcohols using water tolerant basic catalysts" US Patent 8,318,989; November 2012
- Ronnie Ozer and Kostantinos Kourtakis, "Catalytic conversion of ethanol and hydrogen to a 1-butanol-containing reaction product using a thermally decomposed hydrotalcite / metal carbonate" US Patent 8,071,823; December 2011
- Ronnie Ozer and Kostantinos Kourtakis, "Catalytic conversion of ethanol and hydrogen to a 1-butanol-containing reaction product using a thermally decomposed hydrotalcite containing the anion of ethylenediaminetetraacetic acid" US Patent 8,071,822; December 2011
- Thomas Foo, James Michael Garner, Ron Ozer, Paul S. Pearlman, "Hydrocyanation of pentenenitriles" US Patent 8,088,943; January 2012
- Thomas Foo, Sigridur S. Kristjansdottir, Ronald J. McKinney, Ron Ozer, Paul S. Pearlman, "Process for making and refining 3-pentenenitrile, and for refining 2-methyl-3-butenenitrile" US Patent 7,977,502; July 2011
- Thomas Foo, Sigridur S. Kristjansdottir, Ronald J. McKinney, Ron Ozer, Paul S. Pearlman, "Process for making 3-pentenenitrile by hydrocyanation of butadiene" US Patent 7,880,028; February 2011
- Thomas Foo, Sigridur S. Kristjansdottir, Ronald J. McKinney, Ron Ozer, "Process for making 3-pentenenitrile by hydrocyanation of butadiene" US Patent 7,709,673; May 2010
- Thomas Foo, James Michael Garner, Ron Ozer, Paul S. Pearlman, "Hydrocyanation process with reduced yield losses" US Patent 7,709,674; May 2010
- Thomas Foo, James Michael Garner, Ron Ozer, "Hydrocyanation process with reduced yield losses" US Patent 7,659,422; February 2010
- Kostantinos Kourtakis, Ronnie Ozer, "Lanthanum-promoted supported metal catalysts and process for producing guerbet alcohols using same" US Patent 7,807,857; October 2010
- Ronnie Ozer and Kevin R. Gerzevske, "Method for removing color from polymeric material" US Patent 7,947,750; May 2011 (Ciba)
- Emilio E. Bunel, Marisa Bonilla, Ronnie Ozer, "Process For Making 5-Formylvaleronitrile Using Reactivated Catalyst" US Patent 6,750,362; June 2004
- Emilio E. Bunel, Theodore A. Koch, Ronnie Ozer, Sourav K. Sengupta, "Production of 6-aminocaproic acid" US Patent 6,372,939; April 2002
- Emilio E. Bunel, Theodore A. Koch, Ronnie Ozer, Sourav K. Sengupta, "Production of alkyl 6-aminocaproate" US Patent 6,365,770; April 2002
- Emilio Enrique Bunel, Theodore Augur Koch, Ronnie Ozer, Shawn Homer Phillips, Sourav Kumar Sengupta, "Process for the production of 6-aminocapronitrile and / or hexamethylenediamine" US Patent 5,986,126; November 1999
- Bruce Murphree, Ronnie Ozer, "Preparation of Pentenoic Acid" US Patent 5,536,873; July 1996
- Surface Structure Studies of Silver Bromides, P. Tangyunyong, T. N. Rhodin, R. Ozer, D. Batchelor, Y.T. Tan, and K. J. Lushington, published in the proceedings of XAF-V, Seattle (2 papers), 1988. (Also see MRS Bulletin, May 1989, Y. T. Tan editor).
- EPR and EXAFS Studies of Glucose Isomerase, S. Branner, G. Marg, R. Ozer, D. S. Clark, Bioproc. Eng., 1 (1986) 71-77.
- Modeling Phenolic Resins and Their Thermolysis, R. Ozer, M. Monaco, F. Petrocelli, M. Klein, Macromolecules, 18 (1985) 491.