Robert A. Wanat, PhD

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PROFESSIONAL HIGHLIGHTS

Award-winning Cornell educated PhD chemist with 30+ years of expertise in the chemical industry. Earned 10 personal US patents and oversaw >20 additional granted patents. Led research and development, intellectual property, and litigation initiatives around the world, serving as scientist, global director of research, director of manufacturing, and CTO for multi-billion-dollar chemical companies. Expertise in:

Polymers	Plastics	Adhesives
Composites	Film and sheet	Nanotechnology
(Meth)acrylics	Polyurethanes	Polyesters
Fluoropolymers	Light management/optics	Aerosols
Intellectual property	Coatings	Failure analysis

Expert Witness on:

- more than a dozen intellectual property cases including inter partes reviews (IPRs), post grant reviews (PGRs), and patent infringement cases
- multiple product failure/liability cases
- 5 depositions as expert
- 3 expert testimonies at trial and in arbitration

Expert in product development and commercialization of numerous new products with cumulative sales exceeding two-billion dollars for use in automotive, aerospace, cosmetics, energy, medical, construction, packaging, display, lighting, optical, and marine applications

Supervised teams of 200+ technical professionals and >300 manufacturing employees

Partnered with attorneys to secure dozens of patents and to reach favorable resolutions in multi-million-dollar litigations

Served on the Board of Directors for the Adhesives and Sealants Council and judged the 2019, 2020, and 2021 Adhesives and Sealants Innovation Awards

Expert in process scale-up and manufacturing

EDUCATION AND TEACHING EXPERIENCE:

- PhD in Chemistry, from Cornell University
  Dissertation: *The Structure and Reactivity of Organometallic Compounds*
  Advisor: Dr. David B. Collum
  Received Tunis Wentink 'Graduate Student of the Year' award and Rohm and Haas Fellowship
- Master of Science in Chemistry, Cornell University
- Cal Tech Certificate in Technology Management
- BS in Chemistry from Univ. of Scranton. Graduated in 3 years, Magna Cum Laude
- Taught Chemistry Laboratory courses to Cornell undergraduate students
- Taught and mentored PhD, MS, and BS employees for Arkema and Bostik in chemistry, polymer science, optics, and project management

EMPLOYMENT EXPERIENCE AND ACCOMPLISHMENTS:

6/2018- present: **President;** innov8 chem LLC (www.innov8chem.com)
Providing chemistry, leadership, and strategic problem solving to the chemical industry with expertise in polymers, plastics, materials, and adhesives

- Served as expert witness for 13+ intellectual property and inter partes reviews in polymers, plastics, chemicals, materials, and adhesives, providing insights, reports, depositions, and testimony
- Provided product liability and failure analysis reports in cases involving polymers, plastics, and chemicals
- Defined research and commercialization strategy for multiple chemical industry start-ups
- Provided business, market, and competitive analysis
- Conducted safety and regulatory reviews for workplace and environmental exposure

2/2016-6/2018: **Chief Technology Officer;** Bostik Americas and **Global Director of R&D;** Bostik Global Industrial Adhesives

- Led Industrial Adhesives Americas and Global R&D organizations and shared-services group including Americas Pilot Plant, Analytical, and Regulatory groups (>200 reports)
- Oversaw research, development, and commercialization for polyester, polyurethane, olefin, hot melt, and multiple other adhesives, resulting in successful commercialization of patented products for packaging, renewable polymers
- Served as technical lead for Bostik Americas Executive Team, Global and Regional Industrial Adhesives Business Teams, and Bostik Global Innovation Committee
- Elected to the Board of Directors of the Adhesive and Sealant Council
- Completed M&A due diligence

2006-2016: **Global Director of Research**; Altuglas International Division of Arkema
2009-2011: Dual role of **Global Director of Research + Regional Director of Manufacturing**

- As a world-leading expert in acrylic plastics, oversaw global R&D program of Altuglas, commercializing numerous new products and won Innovation Award for LED Lighting (2015), R&D 100 award for Rnew biopolymer alloys (2012), Prix Pierre Potier for ShieldUp sheet (2012), Arena Award for Solarkote Capstock (2010), and was finalist for the Arena Award (LED diffusion resins) in 2015
- Recruited, hired, and trained employees on science, patents, and project management
- Secured and defended multiple patents and guided global patent strategy
- Led programs resulting in 2x to 4x increase in average new product selling price and unit margins
- Led Americas manufacturing group of 300+ employees producing over 200,000,000 pounds of product annually
- Oversaw capital, research, technical service, and operations budgets exceeding $20M

1999-2006: **R&D MANAGER;** ALTUGLAS INTERNATIONAL DIVISION OF ARKEMA

- Led research and development of high performing polymers for automotive, construction, lighting, optical storage, medical, and recreation applications
- Upgraded Altuglas coextrusion and compounding capabilities to be models for King of Prussia R&D facility. Established high through-put capabilities for physical property testing and emulsion polymerization
- Led and presented failure analysis studies of plastic and composite materials including failures from weathering, thermal degradation, chemical attack, and fracture
- Established Univ. of Mass. (a top-3 Polymer Science graduate school) recruiting program to improve R&D talent and led program for over a decade

1996-1998: **TECHNICAL MARKETING SPECIALIST**; ELF ATOCHEM N.A., ATOGLAS DIVISION

- Initiated Solarkote product line by identifying market need, developing product concept, selling idea with senior management, designing first two products to launch, and branding products

1985-1996: **SR. RESEARCH SCIENTIST**; ROHM AND HAAS AND ALTUGLAS PRECURSOR COMPANIES

- Led development and commercialization of patented and trade secret '-101' technology products. Project was budgeted as 5-year development but by redefining the approach, my solution was validated at commercial scale in ~3 months. Technology has generated several billion dollars of sales
- Developed proprietary binder system for injection molding of powdered metal and ceramic substrates. Binder technology was later patented, and licensed
- Developed novel 1K shelf-stable silane-crosslinking emulsion technology for multiple applications

PATENTS:

- Acrylic photovoltaic module backsheet, US Patent 10,640,672. May 2020
- Optical light diffuser and method for measurement thereof, US Patent 10,539,290. January 2020
- Acrylic composites with improved surface properties, US Patent Application US20210403653A1, November 2018.
- Impact resistant transparent thermoplastic compositions, US Patent 9,988,527. June 2018
- Multilayer composition with high gloss, US Patent 8,034,441. Oct. 2011
- Molded object exhibiting a polychromatic effect, US Patent 7,879,927. Feb. 2011
- Thermoformable photovoltaic backsheet, US patent application US20120024353A1. Mar. 2010
- Weather resistant high impact strength acrylic compositions, US Patent 7,294,399. Nov. 2007
- Acrylic polymer capstock with improved adhesion to structural plastics, US Patent 6,852,405. Feb. 2005
- Stabilization of methacrylic polymers against sterilizing radiation, US Patent 5,258,423. Nov. 1993
- Clear impact resistant plastics, US Patent 5,063,259. Nov. 1991
- Polymers stabilized against light and heat degradation. US Patent 5,066,696. Nov. 1991

Patents awarded under Dr. Wanat's supervision

- Polymeric articles having a textured surface and frosted appearance, US 7067188 B1. June 2006
- Stabilized UV transparent acrylic composition, US7407998B2. Aug. 2005
- Thermoplastic article with a printable matte surface, US7435462B2. Oct. 2008
- Polymeric articles having a textured surface and frosted appearance, US7547736B2. June 2009
- Plastic compositions having mineral-like appearance, US7592394B2. Sept. 2009
- High optical purity copolymer film, US7811659B2. Dec. 2014
- Polymeric articles having a textured surface and frosted appearance, US7868062B2. Jan. 2011

- Impact modified acrylics having a bimodal distribution of impact modifier sizes, US7915346B2. March 2011
- Transparent bullet-resistant acrylic sheet, US8119231B2. February 2012
- White light diffusing thermoplastic composition, US8163827B2. April 2012
- Multi-layer screen composites, US8208204B2. June 2012.
- White light diffusing thermoplastic composition, US8357744B2. January 2013
- Transparent chemical resistant impact acrylic alloy, US8524826B2. Sept. 2013
- Multilayer polymeric article having a metallic variegated look, US8658716B2. Feb. 2014
- Impact resistant acrylic alloy, US8835544B2. September 2014
- Fluoropolymer modified acrylic capstock, US9056974B2. June 2015
- Acrylic/thermoplastic olefin composite, US9272490B2. March 2013
- Photovoltaic module using PVDF based flexible glazing film, US9960300B2. May 2018
- Multilayer structures containing biopolymers, US9987820B2. June 2018
- High temperature acrylic sheet, US10043930B2. Aug. 2018.
- Photovoltaic modules having a polyvinylidene fluoride backsheet, US10050164B2. Aug. 2018

Publications:

- Solid-state and solution studies of lithiated 2-carbomethoxycyclohexanone dimethylhydrazone and lithiated cyclohexanone phenylimine. Robert A. Wanat, David B. Collum, Greg. Van Duyne, Jon. Clardy, Randall T. DePue, *Journal of the American Chemical Society* 1986, *108* (12), 3415-3422
- On the origin of the stereoselectivity of hydrazone alkylations. Investigation of aggregation effects and solution kinetics. Robert A. Wanat and David B. Collum, *Journal of the American Chemical Society* 1985, *107* (7), 2078-2082
- Approaches to the Synthesis and Detection of a Transient Palladium(0) Alkylidene. Robert A. Wanat and David B. Collum, *Organometallics* 1986, *5*, 120-127
- Substituent effects on the stereochemistry of substituted cyclohexanone N,N-dimethylhydrazone alkylations. An X-ray crystal structure of lithiated cyclohexanone N,N-dimethyl 1-hydrazone. Collum, D.B.; Kahne, D.; Gut, S.A.; DePue, R.T.; Mohamadi, F.; Wanat, R.A.; Clardy, J.; VanDuyne, G., *Journal of the American Chemical Society* 1984, *106*, 4865.

AWARDS (granted to Dr. Wanat and to his team):

- Innovation Award for LED lighting (2015)
- Arena Award finalist for LED diffusion resins (2015)
- R&D 100 award for Rnew biopolymer alloys (2012)
- Prix Pierre Potier for ShieldUp sheet (2012)
- Arena Award for Solarkote Capstock (2010)
- Cornell University Tunis Wentink Award (1985)
- Rohm and Haas Fellowship (1983)

MEMBERSHIPS AND AFFILIATIONS:

- American Chemical Society *(current member)*
- Society of Plastics Engineers *(current member)*
- Adhesives and Sealants Council *(past Board of Directors)*
- Society of Automotive Engineers *(past member)*