

Michael Willy

Chemical Engineer

West Chester, PA - Email me on Indeed: [indeed.com/r/Michael-Willy/506abefd2bdfed9d](https://www.indeed.com/r/Michael-Willy/506abefd2bdfed9d)

Authorized to work in the US for any employer

WORK EXPERIENCE

Associate Investigator

DuPont - Wilmington, DE - September 2014 to Present

Material Purification & Qualification Engineer

- Scale-up organic semiconductor material purification and thin-film device fabrication
- Vacuum deposition solids purification process operations and improvement

Process & Application Engineer

Morgan Advanced Materials - Allentown, PA - March 2012 to June 2014

- Product development of chemical vapor deposition (CVD) diamond film applied in advanced-node semiconductor manufacturing – chemical mechanical planarization (CMP)
- CMP process development to benchmark conditioners with pads and slurries; applied DOE to target performance rate, uniformity, and defectivity
- Led qualification and validation of process changes through customer white paper approval
- Calculated equipment specifications, interfaced with vendors, and provided economic justification for capital projects; conducted hazard review and technician SOP training

Undergraduate Research Assistant

Drexel University Dept. of Chemical and Biological Engineering - Philadelphia, PA - January 2008 to March 2011

- Numerical MATLAB diffusion model accounting for composition-dependent phase partition
- E.F. Small, M.C. Willy, P.A. Lewin, and S.P. Wrenn. "Ultrasound-Induced Transport Across Lipid Bilayers: Influence of Phase Behavior." Colloids and Surfaces A: Physicochemical and Engineering Aspects. 2011.

Product Development Engineer Co-op

DePuy Synthes - West Chester, PA - March 2010 to September 2010

- Designed cGMP production process of implantable resorbable polymer drug delivery device
- Scale-up included equipment sizing, waste reduction, and bottleneck mitigation using PFD's, material and energy balances, and experimentation
- Modeled and tested polymer suspension homogeneity, powder moisture absorption rate, and product in vitro drug release rate

Molecular Biologist Co-op

Tetralogic Pharmaceuticals - Malvern, PA - March 2009 to September 2009

- Developed reproducible tissue homogenization and protein purification method
- Incorporated pharmacokinetic clearance rate into mathematical model to explain dose-dependent apoptosis inhibiting protein efficacy observed in animal tissue western blot analysis

Production Engineer Co-op

Sartomer - West Chester, PA - March 2008 to September 2008

- Supported production of acrylate and methacrylate monomer coatings, inks, and precursors
- Documented Management of Change and statistical significance of process trial results

EDUCATION

Bachelor of Science in Chemical Engineering

Drexel University, Pennoni Honors College - Philadelphia, PA
2011

LINKS

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