

# WILLIAM L. KOSTEDT IV, Ph.D.

---

*kostedt@unfettered.com*

## PROFILE

- Diverse background in electrical, mechanical, chemical and environmental engineering
- Able to effectively solve problems involving multiple engineering disciplines
- Possess Engineer-In-Training Certification (Texas #31767) transferable to another state

## EDUCATION

**UNIVERSITY OF FLORIDA**, Gainesville, FL

**Doctor of Philosophy in Environmental Engineering** . . . . . May 2008

- Concentration in physical-chemical unit operation design and advanced materials for environmental applications
- Performance enhancement of a magnetically agitated photocatalytic reactor (MAPR) for water recovery during long-term space missions
- 3.97/4.00 GPA, Alumni Fellow

**TRINITY UNIVERSITY**, San Antonio, TX

**Bachelor of Science in Engineering** . . . . . May 2002

- Concentration in Chemical Engineering, Minor in Mathematics
- 3.40/4.00 GPA, Presidential Scholar

## EXPERIENCE

**GENERAL ELECTRIC COMPANY**, Niskayuna, NY . . . . . May 2008 - Present

**Chemical Engineer - Environmental Technology Laboratory**

- Design remedial and water treatment systems for sites contaminated with PCBs, chlorinated solvents and radionuclides
- Perform laboratory experiments to evaluate fate/transport and remediation performance
- Critically evaluate new technologies for cost, performance, and fundamental understanding

**UNIVERSITY OF FLORIDA**, Gainesville, FL . . . . . June 2004 - May 2008

**Graduate Research Assistant**

- Performed research involving photocatalytic mineralization of graywater for re-use during long-term space missions
- Reviewed manuscripts for several environmental engineering publications
- Instructed an introductory environmental engineering course
- Improved performance of the magnetically agitated photocatalytic reactor by 400 percent

**AFFTON HIGH SCHOOL**, St. Louis, MO . . . . . August 2002 - May 2004

**Special Education Instructor**

- Implemented vocational skills program that has successfully employed many disabled students
- Devised and modified physics curriculum for learning-disabled students
- Developed strong ability to present subject matter in context tailored to individual students' needs

**TRINITY UNIVERSITY**, San Antonio, TX . . . . . August 1998 - May 2002

**Student, Department of Engineering Science (1998 - 2002)**

- Responsible for the design, development, implementation, and validation of several projects in a four-year sequence of design courses, of which the capstone experience was the design of a passive radio frequency radiation detector for a US Air Force weapons detection system using diazolumelanin (DALM)

**NSF/SRC ENGINEERING RESEARCH CENTER FOR ENVIRONMENTALLY BENIGN**

**SEMICONDUCTOR MANUFACTURING**, Tucson, AZ . . . . . Summer 2000

**Undergraduate Research Intern**

- Conducted research on copper chemical mechanical polishing (CMP) with hydroxylamine
- Optimized static etch rate based on concentration and pH
- Discovered novel result and presented at the National Conference of Semiconductor Manufacturers at Stanford University

## PUBLICATIONS

**Kostedt, W. L., IV;** Sharma, P.; Mazyck, D. W.; Moudgil, B. M. Three-step Microemulsion Synthesis of a Nanometer Scale Magnetic Photocatalyst, In preparation, 2010

**Kostedt, W. L., IV;** Byrne, H. E.; Mazyck D. W. A High Surface Area Magnetic Photocatalyst With Controlled Pore Size Distribution. *Environmental Progress & Sustainable Energy* **2010**, 29(1), 10-16.

Byrne, H. E.; **Kostedt, W. L., IV;** Stokke, J. M.; Mazyck D. W. Characterization of a Silica-Titania Composite with Degussa P25. *Journal of Non-Crystalline Solids* **2009**, 355, 525-530.

**Kostedt, W. L., IV;** Ismail, I. I.; Mazyck D. W. Synthesis and characterization of ZnO-TiO<sub>2</sub> nanoparticles via sol-gel technique for wastewater treatment *Industrial & Engineering Chemistry Research* **2008**, 47(5), 1483-1487.

**Kostedt, W. L., IV;** Mazyck, D. W. Evaluation of a Photocatalytic Water Treatment Process. *Florida Water Resources Journal* **2006**, 58(11), 44-48.

**Kostedt, W. L., IV;** Drwiega, J; Mazyck, D. W.; Lee, S.-W.; Sigmund, W.; Wu, C.-Y.; Chadik, P. Magnetically agitated photocatalytic reactor for photocatalytic oxidation of aqueous phase organic pollutants. *Environmental Science & Technology* **2005**, 39(20), 8052-8056.

**Kostedt, W. L., IV\*;** Mazyck, D. W. High Surface Area Magnetic Photocatalyst. AICHE Annual Meeting, Salt Lake City UT, November 4-9, 2007.

**Kostedt, W. L., IV\*;** Mazyck, D. W. Improvement of a Magnetic Photocatalyst. AICHE Annual Meeting, Salt Lake City UT, November 4-9, 2007. (*Poster*)

**Kostedt, W. L., IV\*;** Mazyck, D. W. Oscillating Magnetic Field Gradient Induced Motion of a Magnetic Photocatalyst. AICHE Annual Meeting, San Francisco CA, November 12-17, 2006.

**Kostedt, W. L., IV\*;** Mazyck, D. W. Performance of a Magnetically Agitated Photocatalytic Reactor for Oxidation of Ersatz Water. In Proceedings of the 36th International Conference on Environmental Systems, Society of Automotive Engineers (SAE): Norfolk, Virginia, July 17-20, 2006. 2006-01-2084.

**Kostedt, W. L., IV\*;** Mazyck, D. W.; Powell, T.; Butters, B. Effect of Photocatalyst Type on Oxidation of Ersatz Water Using a Photocatalytic Reactor with Slurry Separation. In Proceedings of the 36th International Conference on Environmental Systems, Society of Automotive Engineers (SAE): Norfolk, Virginia, July 17-20, 2006. 2006-01-2085.

**Kostedt, W. L., IV\*;** Mazyck, D. W.; Powell, T.; Butters, B. A Photocatalytic Water Recovery Solution Using Nanoparticles: Utilization of a Magnetic Field for Agitation and Confinement. 36th International Conference on Environmental Systems, Society of Automotive Engineers (SAE): Norfolk, Virginia, July 17-20, 2006. 2006ICESPS-4. (*Poster*)

**Kostedt, W. L., IV\*;** Mazyck, D. W. Magnetic Field Induced Containment and Agitation of a Particulate Magnetic Photocatalyst. Industrial Advisory Board Meeting for the Particle Engineering Research Center, Gainesville FL, November 27-December 1, 2005.

**Kostedt, W. L., IV\*;** Mazyck, D. W. Evaluation of a Photocatalytic Water Treatment Process. In Proceedings of the Florida Section American Water Works Association, Orlando FL, November 27-December 1, 2005.

**Kostedt, W. L., IV\*;** Mazyck, D. W. Composite magnetic photocatalyst with nano-sized TiO<sub>2</sub> for oxidation of aqueous organic contaminants. ACS National Meeting, Washington D.C., August 28-September 1, 2005; American Chemical Society: Washington, DC, 2005; ENVR-59.

**Kostedt, W. L., IV;** Witwer, M. A.; Mazyck, D. W.\*; Powell, T.; Butters, B. A slurry-based photocatalytic reactor with slurry separation for water recovery. In Proceedings of the 35th International Conference on Environmental Systems, Society of Automotive Engineers (SAE): Rome, Italy, July 11-14, 2005. 2005-01-2994.

**Kostedt, W. L., IV\*;** Mazyck, D. W.; Wu, C.-Y.; Chadik, P. Optimization of a magnetically agitated photocatalytic reactor for water recovery. In Proceedings of the 35th International Conference on Environmental Systems, Society of Automotive Engineers (SAE): Rome, Italy,

## CONFERENCE PROCEEDINGS & PRESENTATIONS

July 11-14, 2005. 2005-01-2995.

\* indicates presenter

**AWARDS &  
HONORS**

Tau Beta Pi Engineering Honor Society, Order of the Engineer, Trinity University Presidential Scholarship, University of Florida Alumni Fellow, American Water Works Association Roy Likins Scholarship, Priede-Excellence Scholarship, National Society of Collegiate Scholars, Alpha Lambda Delta National Honor Society, Kappa Mu Epsilon National Math Honor Society, Golden Key International Honor Society, Life Member of Alpha Phi Omega National Service Fraternity, Life Member of National Eagle Scout Association

**TRAINING**

Lean Six Sigma Green Belt - GE  
IP Skills for Technologists - GE  
Presentation Skills at GE  
Radiation Safety Officer Training - Harvard School of Public Health  
Introduction to Gamma Spectroscopy - Canberra Industries  
General Theory of Gamma Spectroscopy - Canberra Industries