Yaniv D. Scherson

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Education

Stanford University – M.S. & Ph.D. in Mechanical Engineering **September 07 - Present**

Research in nitrogen removal, resource recovery, and energy generation from wastewater. Developed innovative wastewater treatment process for removal of **nitrogen waste** and phosphorus with **renewable energy** generation for municipal-scale wastewater treatment. Key research concepts include catalysis, "green" power systems, bioreactors, short-circuit nitrification/denitrification, systems design.

University of California Berkeley – B.S. **August 03 – May 07**

Double major in Mechanical Engineering and Materials Science. Gradated honors with GPA 3.65.
Relevant coursework: Heat Transfer, Mechanics, Fluids, Materials, Thermodynamics.

Work Experience

Stanford University **September 08 - Present**

- **Researcher**: Developed new wastewater treatment process for nitrogen removal and energy recovery with end goal of net energy neutral/surplus treatment. Process generates clean power from ammonia waste; based on high rate microbial production and catalytic decomposition of nitrous oxide.
- Project supported by Stanford University Woods Institute for the Environment
- Two pending patents**,** application numbers**:** 12/799677 and 61/328431
- Press: http://news.stanford.edu/news/2010/july/waste-072610.html

Stanford University **September 07 – December 09**

- **Researcher:** on a Pratt & Whitney Rocketdyne project characterizing and testing catalytic decomposition of Nitrous Oxide in a monopropellant gas generator/igniter and investigating feasibility of mico-scale thrusters.

Stanford University EPGY Program **June 10 – Present**

- **Educator:** Developing and teaching two 4-week summer courses (12.5 hrs/wk) on advanced engineering topics as part of the Stanford Education Program for Gifted Youth (EPGY) to high-school students from around the world.

Ventions LLC (San Francisco) **November 08 – May 09**

- **Design Engineer:** for a NASA-Ames project designing and building a test rig for a small-scale Hydrogen Peroxide monopropellant rocket.

University of California Irvine **June 06 – August 06**

- **Researcher**: studied the effects of manufacturing imperfections on performance of Micro-Electro-Mechanical-Systems (MEMS) distributed mass gyroscope.

University of California Santa Barbara **June 05 - August 05**

- **Researcher:** investigated nano-scale gold indentation and failure modes on a MEMS switch for use in electronic and telecommunication devices.

University of California Berkeley Pre-Engineering Partnership (PEP) Program **September 05 – June 06**

- **Tutor/Educator:** teaching and designing lesson plans, curriculum, and activities for High School physics students.

Volunteer

Emeryville High School **September 04 – June 07**

- Coordinator of tutoring program for Spanish speaking student at underprivileged high school.
- Biweekly two-hour sessions to help recently immigrated Spanish speaking students at a disadvantaged high school learn science while they learned English. Instructed a group of three to five students.

Best Buddies Organization **September 01 – June 03**

- Organization that establishes one-on-one friendships with developmental disabled student. Also organized summer camps and social activities

Awards

- Stanford University Mechanical Engineering Department Fellowship Award 2007
- Barry M. Goldwater Scholarship Award (national merit-based award) 2006
- NSF Honorable Mention 2006 & 2009
- Heisman Scholar Athlete 2003

Publications

Surface Structure and Reactivity of Rhodium Oxide (Rh_2O_3), Y.D. Scherson, S.J. Aboud, J. Wilcox, B.J. Cantwell, The Journal of Physical Chemistry C, 115, 12, 11036-11044 (2011).

Microbial Production of Nitrous Oxide Coupled with Chemical Reaction of Gaseous Nitrous Oxide, B.J. Cantwell, C.S. Criddle, Y.D. Scherson, G.F. Wells, United States Patent Application Publication, Publication Number: US 2011/0207061 A1 (Aug, 25 2011).

A Monopropellant Gas Generator Based on N_2O Decomposition for Fully "Green" Propulsion and Power Applications, Y.D. Scherson, K.A. Lohner, B. W. Lariviere, B.J. Cantwell, T.W. Kenny, AIAA 2009, 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, Denver, CO (8-11 July 2009).

Nitrous Oxide Monopropellant Gas Generator Development, K.A. Lohner, Y.D. Scherson, B. W. Lariviere, B.J. Cantwell, T.W. Kenny, presented at JANNAF / 3rd Spacecraft Propulsion Joint Subcommittee Meeting, December 2008.

Skills

- Fluent in Spanish and English
- Matlab, Solidworks, Labview, MS Office, "hands-on" experience building hardware/test beds.