

Alexander G. Agrios

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Al Geib Professor of Environmental Engineering Research and Education
Department of Civil & Environmental Engineering
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EXPERIENCE

University of Connecticut, Department of Civil & Environmental Engineering and Center for Clean Energy Engineering, Storrs, Conn., USA, August 2009 – present

Associate Professor (2016-present). Inventing schemes to improve charge collection and improve voltage produced by in dye-sensitized solar cells, including novel composite semiconductor nanostructures for fast electron transport and dye-anchored nanocatalysts to reduce overpotential losses. Also affiliated with the Chemical Engineering Graduate Faculty.

Royal Institute of Technology (KTH), Stockholm, and **Uppsala University**, Uppsala, Sweden,

Department of Physical Chemistry, 2005–2009 (group moved in January 2008 from KTH to UU)
NSF International Research Fellow and Wallenberg Research Fellow. With Prof. Anders Hagfeldt, studied electron transport in dye-sensitized solar cells made from TiO₂ films deposited by electrostatic layer-by-layer (ELBL) deposition including TiO₂-coated ZnO nanorods, and hole transport in organic dye molecules.

École Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology), Laboratory of Photonics and Interfaces, Lausanne, Switzerland, 2004–2005

NSF International Research Fellow. In the laboratory of Prof. Michael Grätzel, used electrostatic layer-by-layer (LbL) deposition to fabricate novel structured films for use in dye-sensitized solar cells.

École Centrale de Lyon, Laboratory of Photocatalysis and the Environment, Ecully, France, 2004

Postdoctoral Fellow. Conducted research with Prof. Pierre Pichat comparing proximate to remote mechanisms of TiO₂ photocatalytic degradation and assessing the photocatalytic effects of the catalyst sintering temperature, using phenol, anisole, and pyridine as probe molecules.

EDUCATION

Northwestern University, **PhD** June 2003, **MS** Dec 1998, Evanston, Ill.

Department: Civil & Environmental Engineering / Institute for Environmental Catalysis
Advisor: Prof. Kimberly A. Gray
Dissertation: “Visible Light Photocatalysis: Adsorption, Complexation, and Reaction of Chlorophenols on Titanium Dioxide”

Duke University, **BSE** May 1996, Durham, N.C.

First Major: Civil & Environmental Engineering
Second Major: Chemistry

PUBLICATIONS (>2000 citations)

Peer-Reviewed Journal Publications

- Yang, B.; Agrios, A.G. "Attachment of Pt nanoparticles to a metal oxide surface using a thiol–carboxyl bifunctional molecule." *J. Colloid Interf. Sci.* **2018**, 513:464–469. doi:[10.1016/j.jcis.2017.11.058](https://doi.org/10.1016/j.jcis.2017.11.058)
- Manthina, V.; Agrios, A.G. "Facile synthesis of $\text{Zn}_{1-x}\text{Co}_x\text{O}/\text{ZnO}$ core/shell nanostructures and their application to dye-sensitized solar cells." *Superlatt. Microstruct.* **2017**, 104:374–381. doi:[10.1016/j.spmi.2017.02.020](https://doi.org/10.1016/j.spmi.2017.02.020)
- Haynes, V.N.; Ward, J.E.; Russell, B.J.; Agrios, A.G. "Photocatalytic effects of titanium dioxide nanoparticles on aquatic organisms—Current knowledge and suggestions for future research." *Aquat. Toxicol.* **2017**, 185:138–148. doi:[10.1016/j.aquatox.2017.02.012](https://doi.org/10.1016/j.aquatox.2017.02.012)
- Manthina, V.; Agrios, A.G. "Synthesis of hybrid organic-inorganic perovskite platelets by vacuum impregnation." *Solid State Sci.* **2016**, 61:116–120. doi:[10.1016/j.solidstatesciences.2016.08.009](https://doi.org/10.1016/j.solidstatesciences.2016.08.009)
- Manthina, V.; Agrios, A.G. "Single-pot ZnO nanostructure synthesis by chemical bath deposition and their applications," *Nano-Structures & Nano-Objects* **2016** 7:1–11. doi:[10.1016/j.nanoso.2016.03.005](https://doi.org/10.1016/j.nanoso.2016.03.005)
- Correa Baena, J.P.; Artyushkova, K.; Santoro, C.; Atanassov, P.; Agrios, A.G. "Morphological Characterization of ALD and Doping Effects on Mesoporous SnO_2 Aerogels by XPS and Quantitative SEM Image Analysis," *ACS Appl. Mater. Interfaces* **2016** 8:9849–9854. doi:[10.1021/acsami.6b00019](https://doi.org/10.1021/acsami.6b00019)
- Correa Baena, J.P.; Kriz, D.A.; Giotto, M.; Suib, S.L.; Agrios, A.G. "Fluoride additive in epoxide-initiated sol-gel synthesis enables thin-film applications of SnO_2 aerogels." *RSC Adv.* **2016** 6:21326–21331. doi:[10.1039/C6RA01015F](https://doi.org/10.1039/C6RA01015F)
- Manthina, V.; Agrios, A.G. "Blocking layers for nanocomposite photoanodes in dye sensitized solar cells: Comparison of atomic layer deposition and TiCl_4 treatment." *Thin Solid Films* **2016** 598:54–59. doi:[10.1016/j.tsf.2015.11.054](https://doi.org/10.1016/j.tsf.2015.11.054)
- Noor, N.; Lucera, L.; Capuano, T.; Manthina, V.; Agrios, A.G.; Silva, H.; Gokirmak, A. "Blue and white light emission from zinc oxide nanoforests." *Beilstein J. Nanotechnol.* **2015** 6:2463–2469. doi:[10.3762/bjnano.6.255](https://doi.org/10.3762/bjnano.6.255)
- Noor, N.; Manthina, V.; Cil, K.; Adnane, L.; Agrios, A.G.; Gokirmak, A.; Silva, H. "Atmospheric pressure microplasmas in ZnO nanoforests under high voltage stress." *AIP Adv.* **2015** 5:097212. doi:[10.1063/1.4932037](https://doi.org/10.1063/1.4932037)
- Hewage, N.; Yang, B.; Agrios, A.G.; Brückner, C. "Introduction of Carboxylic Ester and Acid Functionalities to meso-Tetrakis(pentafluorophenyl)porphyrin and their Limited Electronic Effects on the Chromophore." *Dyes and Pigments* **2015** 121:159–169. doi:[10.1016/j.dyepig.2015.05.006](https://doi.org/10.1016/j.dyepig.2015.05.006)
- Manthina, V.; Agrios, A.G. "Band edge engineering of composite photoanodes for dye-sensitized solar cells." *Electrochimica Acta* **2015** 169:416–423. doi:[10.1016/j.electacta.2015.04.080](https://doi.org/10.1016/j.electacta.2015.04.080)
- Correa Baena, J.P.; Agrios, A.G. "Transparent Conducting Aerogels of Antimony-Doped Tin Oxide." *ACS Appl. Mater. Interf.* **2014** 6:19127–19134. doi:[10.1021/am505115x](https://doi.org/10.1021/am505115x)

- Kopecky, A.; Liu, G.; Agushi, A.; Agrios, A.G.; Galoppini, E. "Synthesis of bifunctional Ru complexes with 1,2-dithiolane and carboxylate-substituted ligands." *Tetrahedron* **2014** 70:6271-6275 (NANOTEK special issue). doi:[10.1016/j.tet.2014.04.042](https://doi.org/10.1016/j.tet.2014.04.042)
- Correa Baena, J.P.; Agrios, A.G. "Antimony-Doped Tin Oxide Aerogels as Porous Electron Collectors for Dye-Sensitized Solar Cells." *J. Phys. Chem. C* **2014** 118:17028-17035 (Invited paper for Michael Grätzel "Festschrift" special issue). doi:[10.1021/jp500542v](https://doi.org/10.1021/jp500542v)
- Manthina, V.; Patel, T.; Agrios, A.G. "Number Density and Diameter Control of Chemical Bath Deposition of ZnO Nanorods on FTO by Forced Hydrolysis of Seed Crystals." *J. Amer. Ceram. Soc.* **2014** 94:1028-1034. doi:[10.1111/jace.12819](https://doi.org/10.1111/jace.12819)
- Liu, G.; Arellano-Jiménez, M. J.; Carter, C.B.; Agrios, A.G. "Preparation of functionalized platinum nanoparticles: A comparison of different methods and reagents." *J. Nanoparticle Res.* **2013** 15:1744-1756. doi:[10.1007/s11051-013-1744-9](https://doi.org/10.1007/s11051-013-1744-9)
- Wang, X.; Santoro, C.; Cristiani, P.; Squadrito, G.; Lei, Y.; Agrios, A.G.; Pasaogullari, U.; Li, B. "Influence of Electrode Characteristics on Coulombic Efficiency (CE) in Microbial Fuel Cells (MFCs) Treating Wastewater." *J. Electrochem. Soc.* **2013** 160:G3117-G3122. doi:[10.1149/2.019307jes](https://doi.org/10.1149/2.019307jes)
- Manthina, V.; Correa Baena, J.P.; Liu, G.; Agrios, A.G. "ZnO–TiO₂ Nanocomposite Films for High Light Harvesting Efficiency and Fast Electron Transport in Dye-Sensitized Solar Cells." *J. Phys. Chem. C* **2012** 116:23864-23870. doi:[10.1021/jp304622d](https://doi.org/10.1021/jp304622d)
- Santoro, C.; Agrios, A.G.; Pasaogullari, U.; Li, B.K. "Effects of gas diffusion layer (GDL) and micro porous layer (MPL) on cathode performance in microbial fuel cells (MFCs)." *Int. J. Hydrogen Energy* **2011** 36:13096-13104. doi:[10.1016/j.ijhydene.2011.07.030](https://doi.org/10.1016/j.ijhydene.2011.07.030)
- Boschloo, G.; Marinado, T.; Nonomura, K.; Edvinsson, T.; Agrios, A.G.; Hagberg, D.P.; Sun, L.; Quintana, M.; Karthikeyan, C.S.; Thelakkat, M.; Hagfeldt, A. "A comparative study of a polyene-diphenylaniline dye and Ru(dcbpy)₂(NCS)₂ in electrolyte-based and solid-state dye-sensitized solar cells." *Thin Solid Films* **2008** 516:7214-7217.
- Agrios, A.G.; Hagfeldt, A. "Low-temperature TiO₂ films for dye-sensitized solar cells: Factors affecting energy conversion efficiency." *J. Phys. Chem. C* **2008** 112:10021-10026.
- Enríquez, R.; Agrios, A.G.; Pichat, P. "Probing multiple effects of TiO₂ sintering temperature on photocatalytic activity in water by use of a series of organic pollutant molecules." *Catal. Today* **2007** 120:196-202.
- Hurum, D.C.; Agrios, A.G.; Crist, S.E.; Gray, K.A.; Rajh, T.; Thurnauer, M.C. "Probing reaction mechanisms in mixed phase TiO₂ by EPR." *J. Electron Spectrosc. Relat. Phenom.* **2006** 150:155-163.
- Agrios, A.G.; Pichat, P. "Recombination rate of photogenerated charges versus surface area: Opposing effects of TiO₂ sintering temperature on photocatalytic removal of phenol, anisole, and pyridine in water." *J. Photochem. Photobiol., A* **2006** 180:130-135.
- Agrios, A.G.; Cesar, I.; Comte, P.; Nazeeruddin, M.K.; Grätzel, M. "Nanostructured composite films for dye-sensitized solar cells by electrostatic layer-by-layer deposition." *Chem. Mater.* **2006** 18:5395-5397.
- Agrios, A.G.; Pichat, P. "State of the art and perspectives on materials and applications of photocatalysis over TiO₂." *Journal of Applied Electrochemistry* **2005** 33:655-663.

Agrios, A.G.; Gray, K.A.; Weitz, E. "Narrow-band irradiation of a homologous series of chlorophenols on TiO₂: Charge-transfer complex formation and reactivity." *Langmuir* **2004** 20:5911-5917.

Hurum, D.C.; Agrios, A.G.; Gray, K.A.; Rajh, T.; Thurnauer, M.C. "Explaining the Enhanced Photocatalytic Activity of Mixed Phase TiO₂ Using EPR." *J. Phys. Chem. B* **2003** 107:4545-4549.

Agrios, A.G.; Gray, K.A.; Weitz, E. "Photocatalytic transformation of 2,4,5-trichlorophenol on TiO₂ under sub-band-gap illumination." *Langmuir* **2003** 19:1402-1409.

Conference Proceedings

Santoro, C.; Karra, U.; Li, B.; Agrios, A.G.; Squadrito, G.; Cristiani, P. "Effects of Cathodic Platinum Loadings and Organic Substrate Concentrations on the Performance of Single Chamber Microbial Fuel Cells Treating Wastewater." *ECS Trans.* **2013** 50:47-54.

Santoro, C.; Cristiani, P.; Agrios, A.G.; Li, B. "Effects of Anode and Cathode Areas on Organic Compounds Removal and Power Generation in Membraneless Microbial Fuel Cell (MFC)." *ECS Trans.* **2012** 41:57-63.

Santoro, C.; Agrios, A.G.; Li, B.; Cristiani, P. "The Correlation of the Anodic and Cathodic Open Circuit Potential (OCP) and Power Generation in Microbial Fuel Cells (MFCs)." *ECS Trans.* **2012** 41:45-53.

Book Chapters

Manthina, V.; Agrios, A.G.; Ahmad, S. "Photovoltaics—Current and Emerging Technologies and Materials for Solar Power Conversion." In *Sustainability in Mineral and Energy Sectors*; Devasahayam, S.; Dowling, K.; Mahapatra, M.K., Eds., Taylor & Francis, **2016**.

Agrios, A.G.; Gray, K.A. "Photocatalysis and beyond: Novel preparations, uses, and studies of TiO₂." In *Environmental Catalysis*; Grassian, V. H., Ed.; Taylor & Francis: Boca Raton, Fla., **2005**.

PRESENTATIONS

OP = oral presentation; PP = poster presentation; presenter is underlined

Yang, B.; Weiss, I.; Galoppini, E.; Agrios, A.G. "Dye-anchored nanocatalysts." *Gordon Research Conference on Electron Donor–Acceptor Interactions*, Newport, R.I., Aug. 5-10, **2018**. PP

Yang, B.; Weiss, I.; Galoppini, E.; Agrios, A.G. "Investigation of Pt–S bonding for dye-anchored platinum nanocatalysts." *Connecticut Microelectronics and Optoelectronics Symposium (CMOC)*, New Haven, CT, April 4, **2018**. OP (*won best oral presentation award*)

Yang, B.; Weiss, I.; Catsoulis, P.; Galoppini, E.; Agrios, A.G. "Attachment of nanocatalysts to bifunctional dyes for low-overpotential regeneration by iodide/triiodide." *9th International Conference on Hybrid and Organic Photovoltaics (HOPV-17)*, Lausanne, Switzerland, May 21-24, **2017**. OP

Yang, B.; Weiss, I.; Willis, W.; Suib, S.L.; Galoppini, E.; Agrios, A.G. "Investigation of Pt–S bonding for dye-anchored platinum nanocatalysts." *9th International Conference on Hybrid and Organic Photovoltaics (HOPV-17)*, Lausanne, Switzerland, May 21-24, **2017**. PP

- Yang, B.; Weiss, I.; Catsoulis, P.; Galoppini, E.; Agrios, A.G. "Catalyzed dye regeneration by iodide using dithiolane and thiol nanocatalyst anchors." *8th International Conference on Hybrid and Organic Photovoltaics (HOPV-16)*, Swansea, Wales, UK, June 30-July 1, **2016**. OP
- Grulke, E.; Yang, B.; Agrios, A.G. "Environmental Effects on Perovskite Degradation." *2015 MRS Fall Meeting & Exhibit*, Boston, Nov. 30-Dec. 4, **2015**. PP
- Weiss, I.; Catsoulis, P.; Sun, R.; Yang, B.; Agrios, A.G.; Galoppini, E. "Dye Molecule-Anchored Platinum Nanocatalysts." *Supramolecular Photochemistry: Faraday Discussion*, Cambridge, UK, Sept. 15-17, **2015**. PP
- Liu, G.; Kopecky, A.; Yang, B.; Weiss, I.; Galoppini, E.; Agrios, A.G. "Dye-anchored nanocatalysts for reduced voltage loss with inexpensive iodide/triiodide electrolytes." *7th International Conference on Hybrid and Organic Photovoltaics (HOPV-15)*, Rome, May 10-13, **2015**. OP
- Correa Baena, J.P.; Agrios, A.G. "Transparent Conducting Aerogels for Dye-Sensitized Solar Cells." *20th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-20)*, Berlin, Germany, July 27 - Aug 1, **2014**. OP
- Correa Baena, J.P.; Agrios, A.G. "Antimony-Doped Tin Oxide Aerogels in Dye-Sensitized Solar Cells." *6th International Conference on Hybrid and Organic Photovoltaics (HOPV-14)*, Lausanne, Switzerland, May 11-14, **2014**. PP
- Correa Baena, J.P.; Agrios, A.G. "Antimony-Doped Tin Oxide Aerogels for Applications in Dye Sensitized Solar Cells." *2013 MRS Fall Meeting & Exhibit*, Boston, Dec. 1-6, **2013**. PP
- Agrios, A.G.; Manthina, V.; Correa Baena, J.P. "Active Layer-Transport Layer Concept for Composite Semiconductor Films in Nanostructured Solar Cells." *5th International Conference on Hybrid and Organic Photovoltaics (HOPV-13)*, Seville, Spain, May 5-8, **2013**. OP
- Manthina, V.; G. Liu; Agrios, A.G. "Band Edge Engineering of Nanocomposites for Dye Sensitized Solar Cells." *5th International Conference on Hybrid and Organic Photovoltaics (HOPV-13)*, Seville, Spain, May 5-8, **2013**. PP
- Correa Baena, J.P.; Agrios, A.G.. "Characterization of Fluorine-Doped Tin Oxide Aerogels for Applications in Dye Sensitized Solar Cells." *5th International Conference on Hybrid and Organic Photovoltaics (HOPV-13)*, Seville, Spain, May 5-8, **2013**. PP
- Correa Baena, J.P.; Agrios, A.G. "FTO Aerogels as scaffolds for TiO₂ in DSC." *2012 MRS Fall Meeting & Exhibit*, Boston, Nov. 25-30, **2012**. OP
- Manthina, V.; Agrios, A.G. "Facile Synthesis of Zn_{1-x}Co_xO/ZnO Core/Shell Nanostructures and Their Application to Dye-sensitized Solar Cells." *2012 MRS Fall Meeting & Exhibit*, Boston, Nov. 25-30, **2012**. PP
- Manthina, V.; Agrios, A.G. "Control of Hydrothermal ZnO Nanorod Growth and Number Density by Forced Hydrolysis of Seed Crystals." *2012 MRS Fall Meeting & Exhibit*, Boston, Nov. 25-30, **2012**. PP
- Correa Baena, J.P.; Agrios, A.G. "Conducting Aerogels of Fluorine-doped Tin Oxide for Dye-sensitized Solar Cells." *2012 MRS Fall Meeting & Exhibit*, Boston, Nov. 25-30, **2012**. OP

- Correa Baena, J.P.; Agrios, A.G. "Fluorine-Doped Tin Oxide (FTO) Aerogel as Conductive Scaffold for TiO₂-Coated Dye-Sensitized Solar Cells (DSC)." *244th ACS National Meeting*, Philadelphia, Aug. 19-23, **2012**. OP
- Agushi, A.; Kopecky, A.; Galoppini, E.; Agrios, A.G. "Ruthenium chromophores for anchoring platinum nanoparticles to titanium dioxide semiconductors in dye-sensitized solar cells." *ACS Middle Atlantic Regional Meeting (MARM 2012)*, Baltimore, May 31-June 2, **2012**. PP
- Correa Baena, J.P.; Agrios, A.G. "F:SnO₂ (FTO) aerogel as conductive scaffold for TiO₂-coated dye-sensitized solar cells (DSC)." *Connecticut Microelectronics and Optoelectronics Consortium (CMOC) 21st Annual Symposium*, Storrs, Conn., April 11, **2012**. PP
- Liu, G.; Arellano-Jiménez, M.J.; Carter, C.B.; Agrios, A.G. "Preparation of Pt Nanoparticles and the Application as Localized Catalysis for Improved Solar Energy Conversion Efficiency." *Connecticut Microelectronics and Optoelectronics Consortium (CMOC) 21st Annual Symposium*, Storrs, Conn., April 11, **2012**. OP
- Liu, G.; Arellano-Jiménez, M.J.; Carter, C.B.; Agrios, A.G. "Molecularly anchored Pt nanocatalysts for localized catalysis." *243rd ACS National Meeting*, San Diego, March 25-29, **2012**. OP
- Lucera, L.; Adnane, L.; Cil, K.; Manthina, V.; Agrios, A.G.; Silva, H.; Gokirmak, A. "Light emission from electrically stressed ZnO nanorods." *APS March Meeting 2012*, Boston, Feb. 27 - March 2, **2012**. OP
- Santoro, C.; Cristiani, P.; Agrios, A.G.; Li, B. "Effects of anode and cathode areas on organic compounds removal and power generation in membraneless microbial fuel cell (MFC)." *220th Electrochemical Society Meeting*, Boston, Oct. 9-14, **2011**. OP
- Santoro, C.; Agrios, A.G.; Li, B.; Cristiani, P. "The correlation of the anodic and cathodic open circuit potential (OCP) and power generation in microbial fuel cells (MFCs)." *220th Electrochemical Society Meeting*, Boston, Oct. 9-14, **2011**. OP
- Manthina, V.; Agrios, A.G. "Electron Transfer Between TiO₂ and ZnO in nano-composite photoanodes for dye-sensitized solar cells." *220th Electrochemical Society Meeting*, Boston, Oct. 9-14, **2011**. OP
- Manthina, V.; Agrios, A.G. "ZnO-TiO₂ nanocomposite films for high light harvesting efficiency and fast electron transport in dye-sensitized solar cells." *3rd Hybrid and Organic Photovoltaics Conference (HOPV-11)*, Valencia, Spain, May 15-18, **2011**. PP
- Agrios, A.G.; Boschloo, G.; Hagfeldt, A. "Impact of dye-to-dye charge transfer on the performance of dye-sensitized solar cells." *3rd Hybrid and Organic Photovoltaics Conference (HOPV-11)*, Valencia, Spain, May 15-18, **2011**. OP
- Agrios, A.G.; Hagfeldt, A. "A TiO₂ nanoparticle/ZnO nanorod hybrid structure for dye-sensitized solar cells made by electrostatic layer-by-layer deposition." *European Materials Research Society (E-MRS) 2009 Spring Meeting*, Strasbourg, France, June 8-12, **2009**. PP
- Agrios, A.G. "Novel structures for dye-sensitized solar cells." *Gordon Research Conference on Solid State Studies in Ceramics*, Colby-Sawyer College, New London, N.H., Aug. 15-20, **2009**. Invited OP
- Agrios, A.G.; Boschloo, G.; Hagfeldt, A. "Hole transport in TiO₂-adsorbed monolayers of organic dyes containing triarylamine moieties." *17th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-17)*, Sydney, Australia, July 28 - Aug. 2, **2008**. PP

- Agrios, A.G.; Hagfeldt, A. "Nanostructured semiconductor films for DSCs by electrostatic layer-by-layer deposition." *19th Workshop on Quantum Solar Energy Conversion (QUANTSOL 2007)*, Bad Hofgastein, Austria, March 18-24, **2007**. OP
- Agrios, A.G.; Cesar, I.; Compte, P.; Nazeeruddin, M.K.; Grätzel, M.; Hagfeldt, A. "Electron kinetics and solar energy conversion in dye-sensitized solar cells based on nanocomposite electrostatic layer-by-layer TiO₂ films." *16th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-16)*, Uppsala, Sweden, July 2-7, **2006**. PP
- Agrios, A.G.; Pichat, P. "Tradeoff between reduced recombination rate and reduced surface area in effects of increasing TiO₂ sintering temperature on aqueous photocatalytic degradation kinetics of phenol, anisole, and pyridine." *228th ACS National Meeting*, Philadelphia, Aug. 22-26, **2004**. OP
- Agrios, A.G.; Pichat, P. "Competition between TiO₂ surface area and recombination rate of photoproducts in determining photocatalytic removal rates of phenol, anisole, and pyridine in water." *15th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-15)*, Paris, July 4-9, **2004**. PP
- Agrios, A.G.; Gray, K.A. "Detailing interfacial phenomena of 2,4,5-trichlorophenol on TiO₂ surfaces." *222nd ACS National Meeting*, Chicago, Aug. 26-30, **2001**. OP
- Agrios, A.G.; Gray, K.A. "Enhanced adsorption and degradation on TiO₂ due to visible light." *Second International Conference on the Remediation of Chlorinated and Recalcitrant Compounds*, Monterey, Calif., May 22-25, **2000**. PP
- Agrios, A.G.; Gray, K.A. "Visible light effects on a trichlorophenol/TiO₂ system." *23rd Annual Midwest Environmental Chemistry Workshop*, Kalamazoo, Mich., Oct. 6-8, **2000**. OP
- Agrios, A.G.; Gray, K.A. "Photoenhanced adsorption on TiO₂ due to visible light." *22nd Annual Midwest Environmental Chemistry Workshop*, Houghton, Mich., Oct. 2-3, **1999**. OP
- Agrios, A.G.; Gray, K.A. "Photocatalytic polishing of a treated wastewater: Effects of high inorganic anion concentration." *21st Annual Midwest Environmental Chemistry Workshop*, Ann Arbor, Mich., Oct. 16-18, **1998**. OP

PROFESSIONAL MEMBERSHIP

American Chemical Society (ACS), 1998–present
 Materials Research Society (MRS), 2009–present

RESEARCH FUNDING

- "Dye Molecule-Anchored Platinum Nanocatalysts", NSF/CBET, \$254,601 to UCONN (\$501,684 total), 9/1/2014 – 8/31/2017. PI
- "Novel Interfaces for Nanostructured Solar Cells", NSF/CBET, \$89,839, 3/15/2013–2/28/2015. PI
- "Addressing Social Challenges through Creativity, Engineering, Nanotechnology, and Diversity", NSF/NUE, \$200,000, 9/1/2012 – 8/31/2015. Co-PI
- "Composite Nanostructures for Fast Transport in Dye-Sensitized Solar Cells", UConn Research Foundation, \$21,483, 1/1/2012-12/31/2012. PI

“Dye-Anchored Nanocatalysts for Improved Solar Energy Conversion Efficiency”, NSF/CBET, \$56,662 to UCONN (\$107,888 total), 4/1/2011 – 3/31/2013. PI

“Nanofabrication Facility”, UConn Research Foundation, \$297,000, 10/20/2010-6/30/2011. Co-PI

SERVICE

Grant Proposal Peer Reviews

Panelist on 9 panels for NSF and combined NSF/DOE

Ad-hoc reviews for NSF, ACS Petroleum Research Fund, California Energy Commission, Czech Science Foundation, Indo-US Science & Technology Forum

Journal Article Peer Reviews

Reviewer of ~90 articles for *ACS Nano*, *Angewandte Chemie*, *Small*, *J. Phys. Chem. B&C*, *Inorg. Chem.*, *Royal Soc. Chem.*, *Mater. Sci. Engr. B*, *J. Amer. Ceram. Soc.*, *Appl. Catal. A*, *Wat. Sci. Technol.*, *Electrochimica Acta*, *Spectrosc. Lett.*, *Langmuir*, *Optical Mater.*, *Mater. Sci. Semicond. Process.*, *J. Alloys Compounds.*, *Chem. Eng. J.*, *Catal. Sci. Technol.*

Education & Outreach

da Vinci workshop (for K-12 teachers, 2 times)

Hosted Joule fellows (K-12 teacher summer research experience, 2 times)

CT Kids Fueling the Future demos

UCONN Open House, ENVE lab demos

Catalyst Energy Outreach demo

GRADUATE STUDENTS

Graduated PhD Students and Present Employment

Venkata Manthina, May 2014 — Complete Genomics, Inc.

Guangliang (Perry) Liu, May 2014 — Chinese Space Agency

Juan Pablo Correa Baena, Aug 2014 — Faculty, Georgia Tech

Bowen Yang, Aug 2018 — Postdoc, EPFL, Anders Hagfeldt group

Graduated MS (with thesis) Students

Luca Lucera, May 2012

Avinash Badagala, May 2013

Eric Grulke, May 2016