Donna Kunkel

6890 S. Prince Way, Littleton, CO (832) 316-0224 donna.ann.kunkel@gmail.com

Education

University of Nebraska, Lincoln, NE
PhD in Physics (3.36 GPA) 8/2014
Honors: Nottingham Prize Recipient, National Science Foundation GAANN Fellowship, Best oral presentation at the 2012 International Conference for Materials, Energy, and the Environment

The University of Texas, Austin, TX
Master of Science in Environmental and Water Resources Engineering (3.72 GPA) 12/2008
Honors: W. H. Espey Memorial Endowed Presidential Scholarship for Civil Engineers in Environmental and Water Resources Engineering
Associate, National Science Foundation's Integrative Graduate Education and Research Traineeship

Texas A&M University, College Station, TX
Bachelor of Science in Physics, Minor in Mathematics (3.25 GPA) 5/2006

Select Recent Experience

Employer: The Dow Chemical Company
Environmental Delivery Specialist, 10/2014 - 2/2022
Supervisor: Jason Ramps

- Discovered and corrected compliance issues at manufacturing facilities, while minimizing risk to the business through use of the Texas audit privilege act.
- Managed environmental compliance implementation at a new manufacturing facility.
- Performed field walkthroughs and internal inspections to ensure compliance with solid waste, water permit, and air quality requirements.
- Implemented management systems for compliance with regulatory changes, permit changes, and a federal consent decree.
- Served as facility focal point for external investigations.
- Documented routine activities via written procedures to ensure consistency in the role and aid in future personnel transitions.
- Completed routine compliance reports for multiple facilities (examples include: Title V deviation reports, semi-annual MACT reports, MACT NOCS reports, FIFRA, TSCA CDR, Chemical Weapons Convention annual reporting, and so forth).
- Performed data collection and calculations to aid in permit applications, both air and water.
- Completed end of year air emissions inventory calculations.
- Facilitated root cause investigations for compliance events to prevent reoccurrence.

Employer: University of Nebraska, 855 N 16th Street, Lincoln, NE 68588-0299
Research Assistant, Condensed Matter Physics, 2/2010 to 8/2014
Supervisor: Dr. Axel Enders
Research Highlights:

- Led team investigating self-assembly and electronic properties of functional organic molecules.
- Communicated technical results at conferences and in peer reviewed publications.
- Coordinated work of newer graduate students and collaborations with other research teams.
- Communicated scientific results to lay audiences at public outreach events.

Employer: The University of Texas, 301 E. Dean Keeton St. Stop C1700, Austin, TX 78712

Research Assistant, Environmental Engineering, 05/2007 – 12/2008

Supervisor: Dr. Richard Corsi

- Led team investigating passive air filtration comparing efficacy of two reactive building materials: activated carbon and unpainted gypsum wallboard.
- Designed and conducted experiments in controlled laboratory and test-house systems to determine real world applicability of passive filtration devices demonstrating excellent problem solving skills.
- Communicated technical engineering results at conferences and seminars.

Publications

D. A. Kunkel, J. Hooper, B. Bradley, L. Schlueter, T. Rasmussen, P. Costa, S. Beniwal, S. Ducharme, E. Zurek, A. Enders "2D Cocrystallization from H-Bonded Organic Ferroelectrics" **J. Phys. Chem. Lett.**, 7 (2016) 435-440.

J. Hooper, D. A. Kunkel, E. Zurek, A. Enders "Interplay between Hydrogen Bonding, Epitaxy, and Charge Transfer in the Self-Assembly of Croconic Acid on Au(111) and Ag(111)" **J. Phys. Chem. C**., 119 (2015) 26429-26437.

T. H. Vo, U. G. E. Perera, M. Shekhirev, M. M. Pour, D. A. Kunkel, H. Lu, A. Gruverman, E. Sutter, M. Cotlet, D. Nykypanchuk, P. Zahl, A. Enders, A. Sinitskii, P. Sutter "Nitrogen-Doping Induced Self-Assembly of Graphene Nanoribbon-Based Two-Dimensional and Three-Dimensional Metameterials" **Nano Letters**, 15 (2015) 5770-5777.

J. Hooper, D. A. Kunkel, S. Simpson, S. Beniwal, A. Enders, E. Zurek "Chiral Surface Networks of 3-HPLN – A Molecular Analog of Rounded Triangle Assembly" **Surf. Sci.** 629 (2014) 65-74.

S. Beniwal, S. Chen, D. A. Kunkel, J. Hooper, S. Simpson, E. Zurek, X. C. Zeng, A. Enders, "Kagome-like Lattice of π-π Stacked 3-hydroxyphenalenone on Cu(111)" **Chem. Commun.** 50 (2014) 8659-8662.

T. H. Vo, M. Shekhirev, D. A. Kunkel, F. Orange, M. Guinel, A. Enders, A. Sinitskii, "Bottom-Up Synthesis of Narrow Nitrogen-Doped Graphene Nano-Ribbons" **Chem. Commun.** 50 (2014) 4172-4174.

T. H. Vo, M. D. Morton, M. Shekkirev, D. Kunkel, E. Berglund, P. Wilson, A. Enders, A. Sinitskii, "Large-Scale Solution Synthesis of Narrow Graphene Nanoribbons with a Large Electronic Bandgap" **Nature Commun**., 5 (2014) 3189.

D. A. Kunkel, J. Hooper, S. Simpson, S. Beniwal, K.L. Morrow, D.C. Smith, K. Cousins, S. Ducharme, E. Zurek, A. Enders "Rhodizonic Acid on Noble Metals: Surface Reactivity and Coordination Chemistry" **J. Phys. Chem. Lett**., 4 (2013) 3413-3419.

S. Simpson, D.A. Kunkel, J. Hooper, J. Nitz, P.A. Dowben, L. Routaboul, P. Braunstein, B. Doudin, A. Enders, E. Zurek "Coverage-Dependent Interaction at the Organics-Metal Interface: Quinonoid Zwitterions on Au(111)" **J. Phys. Chem. C** 117 (2013) 16406-16415.

D. A. Kunkel, J. Hooper, S. Simpson, G.A. Rojas, S. Ducharme, T. Usher, E. Zurek, and A. Enders, "Surface-Stabilized Chiral and Polar Motifs of Croconic Acid" **Phys. Rev. B** 87 (2013) 041402.

P.A. Dowben, D.A. Kunkel, A. Enders, L. G. Rosa, L. Routaboul, B. Doudin, and Pierre Braunstein, "The Dipole Mediated Surface Chemistry of the p-benzoqunonemonoimine Zwitterions" **Top. Cat.** 56 (2013) 1096-1103.

D. Kunkel, S. Simpson, J. Nitz, G. A. Rojas, E. Zurek, L. Routaboul, B. Doudin, P. Braunstein, P. A. Dowben and A. Enders. "Dipole Driven Bonding Schemes of Quinonoid Zwitterions on Surfaces" **Chem. Commun.** 48 (2012) 7143–7145.

G. Rojas, S. Simpson, X. Chen, D. Kunkel, J. Nitz, J. Xiao, P. Dowben, E. Zurek, and A. Enders. "Surface State Engineering of Molecule–Molecule Interactions," **Phys. Chem. Chem. Phys.** 14 (2012) 4971–4976.

G. Rojas, X. Chen, D. Kunkel, M. Bode, and A. Enders, “Temperature Dependence of Metal-Organic Heteroepitaxy”, **Langmuir**, 27 (2011) 14267-14271.

D. Kunkel, E. Gall, J. Siegel, A. Novoselac, G. Morrison, R. Corsi. 2009 “Passive Reduction of Human Exposure to Indoor Ozone” **Building and Environment**, 45 (2010) 445-452.

D. Kunkel, R. Corsi, A. Novoselac, J. Siegel, G. Morrison. 2008 “Passive Ozone Control Through Use of Reactive Indoor Wall and Ceiling Materials” Conference Proceedings of the 2008 Air & Waste Management Association’s Annual Conference & Exhibition, Portland, Oregon

Presentations

"STM-Guided Materials Discovery of 2D Ferroelectric Co-crystals" Presented at the 2014 Physics Electronics Conference, La Crosse, WI.

"Self-assembly and Co-crystalization of Ferroelectric Organics on Noble Metal Surfaces" Presented at the 2014 Annual Meeting of the American Chemical Society, Dallas, TX.

"Organic Topological Ferroelectrics on Noble Metal Surfaces" Presented at the 2013 Midwest Solid State Conference, Lawrence, KS.

"Quinonoid Zwitterions: Dipole Mediated Surface Chemistry" Poster Presented at the 2012 Nebraska Research and Innovation Conference: Nanosciences Symposium.

"Substrate-controlled Intrinsic Charge Dipole of Quinonoid Zwitterions" Presented at 2012 International Conference on Materials, Energy, and the Environment (ICMEE), Toledo, Ohio.

"Passive Ozone Control Through Use of Reactive Indoor Wall and Ceiling Materials" Presented at 2008 Air & Waste Management Associations Annual Conference & Exhibition.

"Reducing Exposure to Indoor Ozone with Passive Techniques" 2008, Presented at University of Texas at Austin's Environmental and Water Resources Engineering Departmental Seminar.