

## Eleni A. Kyriakidou

Assistant Professor

Department of Chemical and Biological Engineering

### Work Address:

613 Furnas Hall  
University at Buffalo  
Buffalo, New York 14260  
(716) 645-1629  
elenikyr@buffalo.edu

### EDUCATION

Ph.D., Chemical Engineering, University of South Carolina (USC) (Columbia, SC), Dec 2014

Advisor: Dr. Michael D. Amiridis

Dissertation Title: Synthesis of Au and Ag Catalysts with Controlled Sizes of Metal Particles

Diploma, Chemical Engineering (5-year curriculum; MS equivalent), Aristotelian University of Thessaloniki (Thessaloniki, Greece), Nov 2007

Advisor: Dr. Michael Stoukidis

Thesis Title: Catalytic and electrocatalytic production of hydrogen (H<sub>2</sub>) Water Gas Shift (WGS) reaction in a proton-conduction cell-reactor using a Pd (palladium) catalyst.

### PROFESSIONAL EXPERIENCE

**Assistant Professor, Dept. of Chemical and Biological Engineering (CBE)** Jan 2017 – present  
University at Buffalo (UB), Buffalo, NY

**Postdoctoral Research Associate, National Transportation Research Center** Sept 2014 – Dec 2016  
Oak Ridge National Laboratory, Knoxville, TN

### HONORS AND AWARDS

- 2022 UB's Exceptional Scholar: Young Investigator Award, UB, Aug 2022
- 2021 School of Engineering and Applied Sciences (SEAS) Early Career Researcher of the Year, UB, Mar 2022
- "Catalysis" Gordon Research Conference Travel Award, Gordon Research Conference, Jun 2018
- Richard J. Kokes Award, North American Catalysis Society Meeting (NACS) (Louisville, KY), Jun 2013
- Travel award for American Institute of Chemical Engineers (AIChE) Annual Conference, USC Graduate School Office, Nov 2013
- Student Poster Gold Award, 7<sup>th</sup> International Dendrimer Symposium (Gaithersburg, MD), Jun 2011
- Graduate fellowship (**Only** Chemical Engineering graduate from the country to receive full graduate fellowship to study in the US), State Scholarships Foundation of Greece, Aug 2008 – Aug 2011

### GRANTS TO STUDENTS

( \* and + denote UB graduate and undergraduate students advised by E.A. Kyriakidou, respectively)

5. Ms. Chih-Han Liu\*, Uniquely Structured Catalysts for Vehicle Emissions Remediation, Apr 2021 – Mar 2022, Mark Diamond Research Fund (MDRF) (UB) (Grant Number: SP-21-05), \$2717.17
4. Mr. Junjie Chen\*, Atomically Dispersed Pt Catalysts for Low Temperature Diesel Oxidation Applications, Apr 2020 – Mar 2021, Mark Diamond Research Fund (MDRF) (UB) (Grant Number: FA-20-02), \$2249.93

3. Mr. Lakshay Chopra<sup>+</sup>, Synthesis of Catalysts for Nitrogen Oxide and Hydrocarbon Capture at Low Temperatures, Oct 2017 – Apr 2018, Center of Undergraduate Research & Creative Activities Fund (CURCA) (UB), \$373
2. Mr. Yiran Chen<sup>\*</sup>, Novel Catalysts Synthesis for Low Temperature Automotive Applications, Jul 2017 – Jun 2018, Mark Diamond Research Fund (MDRF) (UB) (Grant Number: SU-17-04), \$1,269.85
1. Ms. Yuhan Mei<sup>\*</sup>, Catalytic Conversion of Methane to Useful Chemicals, Jul 2017 – Jun 2018, Mark Diamond Research Fund (MDRF) (UB) (Grant Number: SU-17-12), \$1,346

#### Prior to UB:

(<sup>□</sup> denotes USC undergraduate students advised by E.A. Kyriakidou)

2. Preparation of Supported Silver Nanoparticles via a Dendrimer-Mediated Synthetic Route, Awardee: Ms. Christina Papadimitriou<sup>□</sup>, May 2012 – Aug 2013, Magellan Undergraduate Research Fellowship (USC), \$2,500
1. Synthesis of Ag Catalysts with relatively Small Nanoparticles, Awardee: Ms. Christina Papadimitriou<sup>□</sup>, Aug 2012 – May 2013, Magellan Mini-grant Undergraduate Research Fellowship (USC), \$1,000

#### **PUBLICATIONS** (Google Scholar Citations: 546, h-index: 13, i10-index: 16)

Google Scholar: <https://scholar.google.com/citations?user=4WtLfCYAAA&hl=en>

ORCID: <https://orcid.org/0000-0003-1094-0162>

ResearcherID: <https://publons.com/researcher/2260181/eleni-a-kyriakidou/>

Web of Science: <https://www.webofscience.com/wos/author/record/15711887>

(<sup>°</sup>, <sup>\*</sup>, <sup>+</sup>, and <sup>□</sup> denote UB postdoctoral associates, graduate, UB undergraduate, and USC undergraduate students advised by E.A. Kyriakidou, respectively, <sup>†</sup> indicates the corresponding author(s), and <sup>◇</sup> indicates equal contribution of authors)

#### Patents

1. E.A. Kyriakidou, T.J. Toops, J.-S. Choi, M.J. Lance, J.E. Parks II, “Exhaust Treatment Catalysts with Enhanced Hydrothermal Stability and Low-Temperature Activity.” US Patent 10,427,137 B2 (October 1, 2019). **Citations: 6.**

#### Review Articles

1. J. Lee<sup>\*</sup>, J.R. Theis, E.A. Kyriakidou<sup>†</sup>, Vehicle emissions trapping materials: successes, challenges, and the path forward, *Applied Catalysis B: Environmental*, 243, 397-414 (2019). **IF: 21.4. Citations: 125.**

#### Refereed Journal Articles

##### *Published*

25. J. Canavan<sup>+</sup>, K. Giewont<sup>\*</sup>, E.A. Kyriakidou<sup>†</sup>, E.A. Walker<sup>†</sup>, The Feasibility of Methane Oxidation on SSZ-13 Bridged Pd<sub>2</sub>O<sub>x</sub> Sites: A Theoretical Study, *The Journal of Physical Chemistry C*, 126, 17123-17134 (2022). **IF: 4.1.**
24. H. Tabassum<sup>◇</sup>, S. Mukherjee<sup>◇</sup>, J. Chen<sup>◇\*</sup>, D. Holiharimanana<sup>◇</sup>, S. Karakalos, N.M. Adli, X. Yang, S. Hwang<sup>†</sup>, T. Zhang, B. Lu, M. Chen, Z. Tang, E.A. Kyriakidou<sup>†</sup>, Q. Ge<sup>†</sup>, G. Wu<sup>†</sup>, Hydrogen Generation via Ammonia Decomposition on Highly Efficient and Stable Ru-free Catalysts: Approaching Complete Conversion at 450 °C, *Energy & Environmental Science*, 15, 4190-4200 (2022). **IF: 38.5. Citations: 3.**
23. S. Liu, C. Dun, J. Chen<sup>\*</sup>, S. Rao, M. Shah, J. Wei, K. Chen, Z. Xuan, E.A. Kyriakidou, J.J. Urban, M.T. Swihart<sup>†</sup>, A General Route to Flame Aerosol Synthesis and in situ Functionalization of Mesoporous Silica, *Angewandte Chemie International Edition*, 61, e202206870 (2022). **IF: 15.3. Citation: 1.**

22. S. Liu, C. Dun, M. Shah, J. Chen\*, S. Rao, J. Wei, E.A. Kyriakidou, J.J. Urban, M.T. Swihart†, Producing Ultrastable Ni-ZrO<sub>2</sub> Nanoshell Catalysts for Dry Reforming of Methane by Flame Synthesis and Ni Exsolution, *Chem Catalysis*, 2, 1-13 (2022). **IF: 19.7. Citation: 1.**
21. J. Lee\*, J. Chen\*, K. Giewont\*, T. Mon\*, C.-H. Liu\*, E.A. Walker, E.A. Kyriakidou†, Effect of Cobalt Incorporation on the Stability of Ionic Pd in the presence of Carbon Monoxide over Pd/BEA Passive NO<sub>x</sub> Adsorbers, *Chemical Engineering Journal*, 440, 135834 (2022). **IF: 14.7. Citation: 1.**
20. J. Chen\*, K. Giewont\*, E.A. Walker, J. Lee\*, Y. Niu, E.A. Kyriakidou†, Cobalt-Induced PdO Formation in Low-Loading Pd/BEA Catalysts for CH<sub>4</sub> Oxidation, *ACS Catalysis*, 11(21), 13066-13076 (2021). **IF: 13.7. Citations: 6.**
19. J. Lee\*, K. Giewont\*, J. Chen\*, C.-H. Liu\*, E.A. Walker, E.A. Kyriakidou†, Ag/ZSM-5 Traps for C<sub>2</sub>H<sub>4</sub> and C<sub>7</sub>H<sub>8</sub> Adsorption under Cold-Start Conditions, *Microporous and Mesoporous Materials*, 327, 111428 (2021). **IF: 5.5. Citations: 3.**
18. J. Chen\*, T. Buchanan†, E.A. Walker, T.J. Toops, Z. Li, P. Kunal, E.A. Kyriakidou†, Mechanistic Understanding of Methane Combustion over Ni/CeO<sub>2</sub>: A Combined Experimental and Theoretical Approach, *ACS Catalysis*, 11(15), 9345-9354 (2021). **IF: 13.7. Citations: 10.**
17. K. Giewont\*, E.A. Kyriakidou, E.A. Walker†, Investigation of Potential Active Sites for the Methane Oxidation Reaction on Pd/SSZ-13: A DFT Perspective, *Journal of Physical Chemistry C*, 125(28), 15262-15274 (2021). **IF: 4.1. Citations: 7.**
16. C.-H. Liu<sup>\*,†</sup>, J. Chen<sup>\*,†</sup>, T.J. Toops, J.-S. Choi, C. Thomas, M.J. Lance, E.A. Kyriakidou†, Hydrothermally Stable Pd/SiO<sub>2</sub>@Zr Core@Shell Catalysts for Diesel Oxidation Applications, *Chemical Engineering Journal*, 425, 130637 (2021). **IF: 14.7. Citations: 5.**
15. T.J. Toops†, A.J. Binder†, P. Kunal, E.A. Kyriakidou, J.-S. Choi, Analysis of Ion-Exchanged ZSM-5, BEA, and SSZ-13 Zeolite Trapping Materials under Realistic Exhaust Conditions, *Catalysts*, 11(4), 449 (2021). **IF: 3.9. Citations: 11.**
14. M.M. Mohammadi, C. Shah, S. Dhandapani, J. Chen\*, S. Abraham, W. Sullivan, R.D. Buchner, E.A. Kyriakidou, H. Lin, C. Lund, M. Swihart†, Single-step Flame Aerosol Synthesis of Active and Stable Nanocatalysts for the Dry Reforming of Methane, *ACS Applied Materials & Interfaces*, 13(15), 17618-17628 (2021). **IF: 10.4. Citations: 13.**
13. C.-H. Liu\*, K. Giewont\*, T.J. Toops, E.A. Walker, C. Horvatits\*, E.A. Kyriakidou†, Non-catalytic gas phase NO oxidation in the presence of decane, *Fuel*, 286, 119388 (2021). **IF: 6.6. Citations: 15.**
12. E.A. Kyriakidou†, J. Lee\*, J.-S. Choi, M. Lance, T.J. Toops†, A comparative study of silver- and palladium-exchanged zeolites in propylene and nitrogen oxide adsorption and desorption for cold-start applications, *Catalysis Today*, 360, 220-233 (2021). **IF: 6.8. Citations: 23.**
11. C. Horvatits\*, J. Lee\*, E.A. Kyriakidou, E.A. Walker†, Characterizing Adsorption Sites on Ag/SSZ-13 Zeolites: Experimental Observations and Bayesian Inference, *Journal of Physical Chemistry C*, 124, 19174-19186 (2020). **IF: 4.1. Citations: 11.**
10. J. Chen\*, B.D. Carlson†, T.J. Toops, Z. Li, M.J. Lance, J.-S. Choi, E.A. Kyriakidou†, Methane combustion over Ni/Ce<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> catalysts: impact of ceria/zirconia ratio, *ChemCatChem*, 12, 5558-5568 (2020). **IF: 5.7. Citations: 13.**
9. J. Chen\*, P. Rohani, M.J. Lance, T.J. Toops, M.T. Swihart, E.A. Kyriakidou†, Boron-hyperdoped Silicon for the Selective Oxidative Dehydrogenation of Propane to Propylene, *Chemical Communications*, 56, 9882-9885 (2020). **IF: 7.2. Citations: 23.**
8. C. Horvatits\*, D. Li, M. Dupuis, E.A. Kyriakidou, E.A. Walker†, Ethylene and Water Co-Adsorption on Ag/SSZ-13 Zeolites: A Theoretical Study, *Journal of Physical Chemistry C*, 124, 7295-7306 (2020). **IF: 4.1. Citations: 17.**
7. S. Hoang, Y. Guo, A.J. Binder, W. Tang, S. Wang, J. Liu, H. Tran, X. Lu, Y. Wang, Y. Ding, E.A. Kyriakidou, J. Yang, T.J. Toops, T.R. Pauly, R. Ramprasad, P.-X. Gao†, Activating Low-Temperature Diesel Oxidation by Single-Atom Pt on TiO<sub>2</sub> Nanowire Array, *Nature Communications*, 11(1), 1-10 (2020). **IF: 17.7. Citations: 79.** [featured in Editor's Highlights]
6. S. Du, W. Tang, Y. Guo, A. Binder, E.A. Kyriakidou, T.J. Toops, S. Wang, Z. Ren, S. Hoang, P.-X. Gao†, Understanding Low Temperature Oxidation Activity of Nano-Array Based Monolithic

Catalysts: from Performance Observation to Structural and Chemical Insights, *Emission Control Science and Technology*, 3, 18-36 (2017). **IF: 1.6. Citations: 21.**

#### Prior to UB:

5. A.P. Wong, E.A. Kyriakidou, T.J. Toops, J.R. Regalbuto<sup>†</sup>, The Catalytic Behavior of Precisely Synthesized Pt-Pd Bimetallic Catalysts for Use as Diesel Oxidation Catalysts, *Catalysis Today*, 267, 145-156 (2016). **IF: 6.8. Citations: 51.**
4. M.-Y. Kim, E.A. Kyriakidou, J.-S. Choi<sup>†</sup>, T.J. Toops, A.J. Binder, C. Thomas, J.E. Parks II, V. Schwartz, J. Chen, D.K. Hensley, Enhancing Low-Temperature Activity and Durability of Pd-based Diesel Oxidation Catalysts Using ZrO<sub>2</sub> Supports, *Applied Catalysis B: Environmental*, 187, 181-194 (2016). **IF: 21.4. Citations: 60.**
3. E.A. Kyriakidou, O.S. Alexeev, A.P. Wong, C. Papadimitriou<sup>□</sup>, M.D. Amiridis, J.R. Regalbuto<sup>†</sup>, Synthesis of Ag Nanoparticles on Oxide and Carbon Supports from Ag Diammine Precursor, *Journal of Catalysis*, 334, 749-756 (2016). **IF: 7.9. Citations: 17.**
2. E.A. Kyriakidou, K. Khivantsev, T.M. Gostanian<sup>□</sup>, O.S. Alexeev<sup>†</sup>, M.D. Amiridis<sup>†</sup>, Silica-Supported Gold/Dendrimer Nanocomposites with Controlled Sizes of Gold Particles, *Applied Catalysis A: General* 504, 482-492 (2015). **IF: 5.7. Citations: 6.**
1. Z. Nazarpour, K. Khivantsev, Eleni A. Kyriakidou, C. Kubicki, S. Ma, P.T. Fanson, O.S. Alexeev<sup>†</sup>, M.D. Amiridis<sup>†</sup>, Dendrimer-Mediated Synthesis of Supported Rhodium Nanoparticles with Controlled Size: Effect of pH and Dialysis, *Journal Colloid & Interface Science* 398, 22-32 (2013). **IF: 8.1. Citations: 18.**

#### *In Review*

2. C.-H. Liu<sup>\*</sup>, S. Porter, J. Chen<sup>\*</sup>, H. Pham, E.J. Peterson, P. Khatri<sup>○</sup>, T.J. Toops, A. Datye, E.A. Kyriakidou<sup>†</sup>, Enhanced Low Temperature Performance of Bimetallic Pd/Pt/SiO<sub>2</sub>(core)/Zr(shell) Diesel Oxidation Catalysts, Submitted, In Second Review, Jan 2023.
1. J. Chen<sup>\*</sup>, T.J. Toops, Z. Li, E.A. Kyriakidou<sup>†</sup>, Ni/CeO<sub>2</sub> Catalysts with Optimized CeO<sub>2</sub> Support Morphologies for CH<sub>4</sub> Oxidation, Submitted, In Third Review, Jan 2023.

## TECHNICAL PRESENTATIONS

### Invited Talks

(presenter name underlined; \* UB graduate students; + UB undergraduate students)

16. T. Mon<sup>\*</sup>, C.-H. Liu<sup>\*</sup>, J. Chen<sup>\*</sup>, E.A. Kyriakidou, Effect of Pd Speciation on CH<sub>4</sub> Oxidation and Passive NO<sub>x</sub> Adsorption/Desorption Performance over Zeolite-based Catalysts, ACS Fall 2022 – Platinum Group Metal-based Sustainable Catalysts for Emission Control & Efficient CH<sub>4</sub> Conversion, Chicago, IL, Aug 2022
15. C.-H. Liu<sup>\*</sup>, J. Chen<sup>\*</sup>, T.J. Toops, M.J. Lance, H. Pham, A.K. Datye, T. Mon<sup>\*</sup>, E.A. Kyriakidou, Three-Way Catalysts: Achieving an Enhanced Low-Temperature Performance and Hydrothermal Stability, Alkegen, Tonawanda, NY, Jul 2022
14. C.-H. Liu<sup>\*</sup>, J. Chen<sup>\*</sup>, T.J. Toops, C. Thomas, M.J. Lance, S.J. Porter, H.N. Pham, A.K. Datye, J.-S. Choi, E.A. Kyriakidou, Novel Configured Low-Temperature Diesel Oxidation and Three-Way Catalysts for Emission Control Applications, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022 (**Keynote Lecture**)
13. J. Chen<sup>\*</sup>, J. Lee<sup>\*</sup>, E.A. Kyriakidou, Breaking the NO<sub>x</sub> Desorption Temperature Limit of Pd/BEA Passive NO<sub>x</sub> Adsorbers by Second Metal Incorporation, ACS Spring 2022 – Catalysts for Emission Control, San Diego, CA, Mar 2022
12. C.-H. Liu<sup>\*</sup>, J. Chen<sup>\*</sup>, T.J. Toops, C. Thomas, M.J. Lance, S. Porter, H. Pham, E.J. Peterson, A.K. Datye, J.-S. Choi, Z. Li, E.A. Kyriakidou, Toward Rational Synthesis of Catalysts for Low Temperature Emissions Control, SUNY Buffalo State College – Department of Chemistry, NY, Oct 2021

11. C.-H. Liu\*, J. Chen\*, T.J. Toops, C. Thomas, M.J. Lance, S. Porter, H. Pham, E.J. Peterson, A.K. Datye, J.-S. Choi, Z. Li, E.A. Kyriakidou, Novel Structured Low-Temperature Oxidation Catalysts for Future Emission Control Applications, 24<sup>th</sup> Cross-Cut Lean Exhaust Emissions Reduction Simulations (CLEERS) Workshop, *virtual due to COVID-19 pandemic*, Sept 2021 (**Stuart Daw Memorial Presentation**)
10. J. Chen\*, C.-H. Liu\*, T.J. Toops, Z. Li, E.A. Kyriakidou, Pt-CeO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> nanosheet catalysts with enhanced lean/rich hydrothermal aging stability for TWC applications, ACS Fall 2021 – Current Progress in Emission Control Catalysis, *virtual due to COVID-19 pandemic*, Aug 2021
9. K. Giewont\*, E.A. Kyriakidou, E.A. Walker, Investigation of Potential Active Sites for the Methane Oxidation Reaction on Pd/SSZ-13, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Session: Advances in Zeolites Science and Technology III – Future Horizons (Invited Talks), Nov 2020
8. E.A. Kyriakidou, Precise Catalyst Design for Emission Control Applications: from Diesel to Compressed Natural Gas Vehicles, The University of Tennessee – Department of Chemical and Biomolecular Engineering, Knoxville, TN, Feb 2020
7. E.A. Kyriakidou, Novel Catalytic Materials for Low Temperature Vehicle Emission Remediation, Clarkson University – Department of Chemical and Biomolecular Engineering, Potsdam, NY, Jan 2020
6. E.A. Kyriakidou, Rational Design of Catalytic Materials to Meet Automotive Emissions Regulations, West Virginia University - Department of Chemical and Biomedical Engineering, Morgantown, WV, Jan 2018
5. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and BEA-Zeolites for Low Temperature Passive Adsorption, ACS Fall 2017 - Advanced Nanomaterials Catalysts for Sustainable Energy & Fuel, Washington, DC, Aug 2017
4. E.A. Kyriakidou, Minimizing low temperature emissions through advances in metal oxide catalysts, supports and traps, UB, The State University of New York - Department of Civil, Structural and Environmental Engineering, Buffalo, NY, Mar 2017
3. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, Minimizing low temperature emissions through advances in metal oxide catalysts, supports and traps, Annual Catalysis Society of Metropolitan New York Meeting (NYCS), Clinton, NJ, Mar 2017

#### Prior to UB:

2. E.A. Kyriakidou, Rational Design of Catalytic Materials to Meet Automotive Emissions Regulations, UB, The State University of New York - Chemical & Biological Engineering Department, Buffalo, NY, Sept 2016
1. E.A. Kyriakidou, Synthesis of Rh and Au Catalysts with Controlled Sizes of Metal Particles, Oak Ridge National Laboratory - National Transportation Research Center, Knoxville, TN, Apr 2014

#### Abstracts and Other Conference Presentations

(*presenter name underlined; \* graduate students; + undergraduate student*)

#### *Oral Presentations*

46. J. Liu, T. Mon\*, E.A. Kyriakidou, V.J. Cybulskis, Improving Low-temperature CH<sub>4</sub> Oxidation Performance with High-silica Pd/CHA Zeolite Catalysts, AIChE Annual Conference, Phoenix, AZ, Nov 2022
45. T. Mon\*, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, High-silica Pd/H-LTA Catalysts for Low Temperature CH<sub>4</sub> Oxidation, AIChE Annual Conference, Phoenix, AZ, Nov 2022
44. T. Mon\*, C.-H. Liu\*, J. Chen\*, E.A. Kyriakidou, Effect of Pd Speciation on CH<sub>4</sub> Oxidation and Passive NO<sub>x</sub> Adsorption/Desorption Performance over Zeolite-based Catalysts, AIChE Annual Conference, Phoenix, AZ, Nov 2022

43. C.-H. Liu\*, J. Chen\*, T.J. Toops, M.J. Lance, E.A. Kyriakidou, Novel Configured CeO<sub>2</sub>(core)@ZrO<sub>2</sub>(shell) Supported Three-way Catalysts, ACS Spring 2022 – Catalysts for Emission Control, San Diego, CA, Mar 2022
42. C.-H. Liu\*, S.J. Porter, J. Chen\*, H.N. Pham T.J. Toops, A.K. Datye, E.A. Kyriakidou, Hydrothermally Stable Pd, Pt/SiO<sub>2</sub>@Zr Core@Shell Catalysts for Diesel Oxidation Applications, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022
41. C.-H. Liu\*, J. Chen\*, T.J. Toops, M.J. Lance, E.A. Kyriakidou, Novel Configured Pt/CeO<sub>2</sub>(core)@ZrO<sub>2</sub>(shell) Supported Three-Way Catalysts, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2021
40. S. Liu, J. Chen\*, S. Rao, M. Shah, A. Kumar, E.A. Kyriakidou, M. Swihart, Flame Aerosol Synthesis of Mesoporous Silica for Application in CO<sub>2</sub> Oxidative Dehydrogenation of Propane, AIChE Annual Conference, Boston, MA, Nov 2021
39. S. Liu, M. Shah, J. Chen\*, S. Rao, M.M. Mohammadi, E.A. Kyriakidou, M. Swihart, Flame Aerosol Synthesis of Stable Ni/ZrO<sub>2</sub> Nanocatalyst for Dry Reforming of Methane, AIChE Annual Conference, Boston, MA, Nov 2021
38. J. Lee\*, J. Chen\*, K. Giewont\*, P. Kunal, T.J. Toops, E.A. Walker, E.A. Kyriakidou, Effect of Cobalt Incorporation on the Stability of Ionic Pd in the Presence of Carbon Monoxide over Pd/BEA Passive NO<sub>x</sub> Adsorbers, AIChE Annual Conference, Boston, MA, Nov 2021
37. J. Chen\*, C.-H. Liu\*, T.J. Toops, Z. Li, E.A. Kyriakidou, Pt-CeO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> Nanosheet Catalysts with Enhanced Lean/Rich Hydrothermal Aging Stability for TWC Applications, AIChE Annual Conference, Boston, MA, Nov 2021
36. T. Mon\*, J. Chen\*, C.-H. Liu\*, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, Development of Zeolite-based Catalysts with Improved Low-Temperature CH<sub>4</sub> Conversion, Natural Gas Vehicle Technology Forum (NGVTF) 2021, *virtual due to COVID-19 pandemic*, May 2021
35. J. Lee\*, J. Chen\*, E.A. Kyriakidou, Bimetallic PdCo/BEA zeolites for passive NO<sub>x</sub> adsorption, 23<sup>rd</sup> CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2020
34. J. Chen\*, P. Rohani, M.T. Swihart, E.A. Kyriakidou, Boron-Hyperdoped Silicon for the Selective Oxidative Dehydrogenation of Propane to Propylene, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
33. J. Chen\*, J. Lee\*, E.A. Kyriakidou, Cobalt as an Efficient Promoter in Low-Loading Pd/BEA Catalysts for CH<sub>4</sub> Oxidation, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
32. J. Lee\*, J. Chen\*, E.A. Kyriakidou, Bimetallic PdCo/BEA Zeolites for Passive NO<sub>x</sub> Adsorption, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
31. C. Horvatits\*, J. Lee\*, E.A. Kyriakidou, E.A. Walker, Modeling Adsorption Capacity of Ag/SSZ-13 Zeolite: A Bayesian Update from Experiments, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
30. J. Chen\*, B. Carlson<sup>+</sup>, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Detailed Kinetic Study of the Complete Combustion of Methane over Ni/CeO<sub>2</sub> Catalysts, 11<sup>th</sup> International Conference of Environmental Catalysis (ICEC), *virtual due to COVID-19 pandemic*, Sept 2020
29. J. Lee\*, J. Chen\*, E.A. Kyriakidou, Bimetallic PdCo/BEA Zeolites for Passive NO<sub>x</sub> Adsorption, 11<sup>th</sup> ICEC, *virtual due to COVID-19 pandemic*, Sept 2020
28. T.J. Toops, P. Kunal, E.A. Kyriakidou, C.H. Liu\*, Low temperature emissions reduction with zeolite-based adsorbers and novel Pd/Pt based oxidation catalysts, 11<sup>th</sup> ICEC, *virtual due to COVID-19 pandemic*, Sept 2020
27. J. Chen\*, B.D. Carlson<sup>+</sup>, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Kinetic Study of Methane Combustion over Ni/CeO<sub>2</sub> Based Catalysts, 17<sup>th</sup> International Congress on Catalysis (ICC), *Canceled due to COVID-19 pandemic*, Jun 2020
26. T.J. Toops, P. Kunal, E.A. Kyriakidou, C.H. Liu\*, Low temperature emissions reduction with zeolite-based adsorbers and novel Pd/Pt based oxidation catalysts, 17<sup>th</sup> ICC, San Diego, CA, *Canceled due to COVID-19 pandemic*, Jun 2020

25. P. Kunal, T.J. Toops, C.-H. Liu\*, E.A. Kyriakidou, M. Kidder, Design, synthesis, and applications of multifunctional catalytic beds for low-temperature emission control, WCX SAE World Congress Experience, Detroit, MI, Apr 2020
24. J. Chen\*, B.D. Carlson<sup>+</sup>, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Detailed Kinetics Study for Complete Methane Combustion over Ni/Ce<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> Catalysts, AIChE Annual Conference, Orlando, FL, Nov 2019
23. J. Chen\*, B.D. Carlson<sup>+</sup>, J.-S. Choi, T.J. Toops, E.A. Kyriakidou, Complete Methane Oxidation over Ni/Ce<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> Catalysts, AIChE Annual Conference, Orlando, FL, Nov 2019
22. E. Walker, C. Horvatits\*, D. Li, M. Dupuis, E.A. Kyriakidou, Trapping Properties of Ag/SSZ-13 Zeolite: Modeling Adsorption Capacity, AIChE Annual Conference, Orlando, FL, Nov 2019
21. C.-H. Liu\*, J. Chen\*, T.J. Toops, E.A. Kyriakidou, Controlled Synthesis of High Surface Area Pd and Pt/SiO<sub>2</sub>(core)/ZrO<sub>2</sub>(shell) Catalysts for Low Temperature Oxidation Applications, AIChE Annual Conference, Orlando, FL, Nov 2019
20. J. Chen\*, B.D. Carlson<sup>+</sup>, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, Complete Combustion of Methane over Ni/CeO<sub>2</sub>-based Catalysts: A Kinetic Study, Chemical and Biological Engineering Department Annual Research Symposium, Buffalo, NY, Oct 2019
19. T.J. Toops, M. Kidder, A. Binder, E.A. Kyriakidou, Analysis of Ion-Exchanged Zeolite Trapping Materials Under Realistic Exhaust Conditions for Cold-Start Emissions Control, WCX SAE World Congress Experience, Detroit, MI, Apr 2019
18. J. Lee\*, E.A. Kyriakidou, Ion-Exchanged Zeolites for Hydrocarbon Traps and Passive NO<sub>x</sub> Adsorption Applications, AIChE Annual Conference, Pittsburgh, PA, Nov 2018

Prior to UB:

17. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and BEA-Zeolites for Low Temperature Passive Adsorption, AIChE Annual Conference, Minneapolis, MN, Nov 2017
16. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and BEA Zeolites for Low Temperature Passive Adsorption, 25<sup>th</sup> NACS Meeting, Denver, CO, Jun 2017
15. E.A. Kyriakidou, M.J. Lance, J.-S. Choi, T.J. Toops, Advanced support modifications to improve the low-temperature activity and durability of Pd-based emissions control catalysts, 25<sup>th</sup> NACS Meeting, Denver, CO, Jun 2017
14. S. Hoang, W. Tang, S. Wang, Y. Guo, A.J. Binder, E.A. Kyriakidou, T.J. Toops, J. Liu, T. Pauly, P.-X. Gao, Exceptional Low Temperature Diesel Activity over Pt Supported TiO<sub>2</sub> Nano-Array Integrated Monolithic Catalysts, 25<sup>th</sup> NACS Meeting, Denver, CO, Jun 2017
13. S. Hoang, Y. Guo, W. Tang, S. Wang, A.J. Binder, E.A. Kyriakidou, T.J. Toops, C.-Y. Nam, Y. Ding, P.-X. Gao, Low Temperature Propane Oxidation over Atomic Layer Deposited Pt Supported TiO<sub>2</sub> Nano-Array Integrated Monolithic Catalysts, 25<sup>th</sup> NACS Meeting, Denver, CO, Jun 2017
12. E.A. Kyriakidou, T.J. Toops, M.J. Lance, A.J. Binder, J.E. Parks II, Impact of Mixed Oxides Supports, on the Durability and Low-Temperature Performance of Pd-Based Diesel Oxidation Catalysts, AIChE Annual Conference, San Francisco, CA, Nov 2016
11. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and BEA-Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, AIChE Annual Conference, San Francisco, CA, Nov 2016
10. E.A. Kyriakidou, T.J. Toops, M.J. Lance, J.-S. Choi, J.E. Parks II, Impact of Mixed Oxides Supports on the Durability and Low-Temperature Performance of Pd-based Diesel Oxidation Catalysts, 15<sup>th</sup> Annual Symposium of the Southeastern Catalysis Society (SECS), Asheville, NC, Sept 2016
9. T.J. Toops, E.A. Kyriakidou, J.-S. Choi, J.E. Parks II, A comparative study of ZSM-5 and BEA-Zeolites for hydrocarbon trap applications under “cold-start conditions, 9<sup>th</sup> ICEC, Newcastle, Australia, Jul 2016
8. E.A. Kyriakidou, J.-S. Choi, M.-Y. Kim, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and Beta-Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, AIChE Annual Conference, Salt Lake City, UT, Nov 2015

7. M.-Y. Kim, E.A. Kyriakidou, J.-S. Choi, T.J. Toops, C. Thomas, A. Binder, J.E. Parks II, V. Schwartz, J. Chen, Impact of ZrO<sub>2</sub> Supports on the Durability and Low-Temperature Performance of Pd-Based Diesel Oxidation Catalysts, 24<sup>th</sup> NACS Meeting, Pittsburgh, PA, Jun 2015
6. E.A. Kyriakidou, K. Khivantsev, T.M. Gostanian<sup>+</sup>, O.S. Alexeev, M.D. Amiridis, Silica-Supported Gold/Dendrimer Nanocomposites with Controlled Sizes of Gold Particles, 13<sup>th</sup> SECS Annual Symposium, Asheville, NC, Sept 2014
5. E.A. Kyriakidou, C. Papadimitriou<sup>+</sup>, O.S. Alexeev, J.R. Regalbuto, M.D. Amiridis, Ag Diammine Impregnation on Oxides/Oxidized Carbon Using Strong Electrostatic Adsorption, 23<sup>rd</sup> NACS Meeting, Louisville, KY, Jun 2013
4. C. Papadimitriou<sup>+</sup>, E.A. Kyriakidou, O.S. Alexeev, M.D. Amiridis, Synthesis of Dendrimer-derived Fe Nanocomposites in Aqueous Solution: Effect of pH and Dialysis, Discovery Day, USC, Columbia, SC, Apr 2013
3. E.A. Kyriakidou, K.V. Khivantsev, C. Papadimitriou<sup>+</sup>, T.M. Gostanian<sup>+</sup>, P.T. Fanson, O.S. Alexeev, M.D. Amiridis, Preparation and quantitative analysis of PAMAM-stabilized metal ions in aqueous solutions: Effect of pH and dialysis, AIChE Annual Conference, Pittsburgh, PA, Nov 2012
2. E.A. Kyriakidou, C. Papadimitriou<sup>+</sup>, O.S. Alexeev, M.D. Amiridis, Synthesis of Dendrimer-Derived Fe Nanocomposites in Aqueous Solution: Effect of pH and Dialysis, Graduate Student Day – USC, Columbia, SC, Mar 2012
1. E.A. Kyriakidou, T.M. Gostanian<sup>+</sup>, K.V. Khivantsev, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of PAMAM-Stabilized Cu/Au Nanoparticles, 10<sup>th</sup> SECS Annual Symposium, Asheville, NC, Sept 2011

#### Poster Presentations

42. S.J. Porter, C.-H. Liu<sup>\*</sup>, H. Pham, A. Ghosh, J. Watt, E.A. Kyriakidou, A.K. Datye, Epitaxy of the Metal and Oxide Phases in Pt-Pd ‘Janus’ Particles in 800 °C Air-aged Diesel Oxidation Catalysts, Microscopy and Microanalysis Meeting, Portland, OR, Jul 2022
41. T. Mon<sup>\*</sup>, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, High-Silica Pd/LTA Catalysts for Low Temperature CH<sub>4</sub> Oxidation, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022
40. J. Liu, T. Mon<sup>\*</sup>, E.A. Kyriakidou, V.J. Cybulskis, Designing Pd/CHA Zeolite Catalysts for Complete Methane Oxidation, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022
39. J. Chen<sup>\*</sup>, C.-H. Liu<sup>\*</sup>, T.J. Toops, E.A. Kyriakidou, Engineering Hydrothermally Stable Pt/CeO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> Nanosheet Catalysts for TWC Applications, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022
38. K. Giewont<sup>\*</sup>, J. Canavan<sup>+</sup>, E.A. Kyriakidou, E.A. Walker, Methane Oxidation on SSZ-13 Bridged Pd<sub>2</sub>O<sub>x</sub> Sites, 27<sup>th</sup> NACS Meeting, New York, NY, May 2022
37. T. Mon<sup>\*</sup>, J. Chen<sup>\*</sup>, C.-H. Liu<sup>\*</sup>, E.A. Kyriakidou, Effect of Na in Low Temperature CH<sub>4</sub> Oxidation over Pd/H-SSZ-13, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2021
36. K. Giewont<sup>\*</sup>, E.A. Walker, E.A. Kyriakidou, Methane Oxidation on Pd/SSZ-13 Active Sites: A Computational Study, AIChE Annual Conference, Boston, MA, Nov 2021
35. K. Giewont<sup>\*</sup>, E.A. Walker, E.A. Kyriakidou, Investigation of Potential Active Sites for the Methane Oxidation Reaction on Pd/SSZ-13, NYCS Annual Meeting, *virtual due to COVID-19 pandemic*, Mar 2021
34. C.-H. Liu<sup>\*</sup>, J. Chen<sup>\*</sup>, T.J. Toops, J.-S. Choi, C. Thomas, M.J. Lance, E.A. Kyriakidou, Hydrothermally Stable Pd/SiO<sub>2</sub>@ZrO<sub>2</sub> Core@Shell Catalysts for Diesel Oxidation Applications, NYCS Annual Meeting, *virtual due to COVID-19 pandemic*, Mar 2021
33. J. Chen<sup>\*</sup>, K. Giewont<sup>\*</sup>, E.A. Walker, Y. Niu, J. Lee<sup>\*</sup>, E.A. Kyriakidou, Cobalt Induced PdO Formation in Low-Loading Pd/BEA Catalysts for CH<sub>4</sub> Oxidation, NYCS Annual Meeting, *virtual due to COVID-19 pandemic*, Mar 2021
32. T. Mon<sup>\*</sup>, J. Liu, C.-H. Liu<sup>\*</sup>, V.J. Cybulskis, E.A. Kyriakidou, Improved Low Temperature CH<sub>4</sub> Oxidation over Pd/H-LTA with Si/Al>8, 24<sup>th</sup> CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2021
31. J. Lee<sup>\*</sup>, E.A. Kyriakidou, Ag Ion-Exchanged ZSM-5 Zeolites for Hydrocarbon Trapping Applications, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020



30. S. Porter, C.-H. Liu\*, H. Pham, E.A. Kyriakidou, A.K. Datye, Investigation of Pt-Pd Oxidation Catalysts under Reaction Environments, Center for Integrated Nanotechnologies (CINT) Annual Meeting, *virtual due to COVID-19 pandemic*, Sept 2020
29. J. Chen\*, J. Lee\*, E.A. Kyriakidou, Cobalt as an Efficient Promoter in Low-loading Pd/BEA Catalysts for CH<sub>4</sub> Oxidation, 23<sup>rd</sup> CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2020
28. C.-H. Liu\*, K. Giewont\*, T.J. Toops, E.A. Walker, C. Horvatits\*, E.A. Kyriakidou, Non-catalytic gas-phase NO oxidation in the presence of decane, 23<sup>rd</sup> CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2020
27. C.-H. Liu\*, T.J. Toops, E.A. Kyriakidou, Hydrothermally Stable Pd and Pt/CeO<sub>2</sub>(core)@ZrO<sub>2</sub>(shell) Catalysts for Low Temperature TWC Applications, 23<sup>rd</sup> CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2020
26. E.A. Walker, C. Horvatits\*, D. Li, M. Dupuis, E.A. Kyriakidou, Trapping Properties of Ag/SSZ-13 Zeolite: Modeling Adsorption Capacity, 17<sup>th</sup> ICC, San Diego, CA, *Canceled due to COVID-19 pandemic*, Jun 2020
25. J. Lee\*, E.A. Kyriakidou, Ag Ion-Exchanged ZSM-5 Zeolites for Hydrocarbon Trapping Applications, 17<sup>th</sup> ICC, San Diego, CA, *Canceled due to COVID-19 pandemic*, Jun 2022
24. J. Lee\*, E.A. Kyriakidou, Bimetallic Pd-Co/BEA zeolites for passive NO<sub>x</sub> adsorption, 22<sup>nd</sup> CLEERS Workshop, Ann Arbor, MI, Sept 2019
23. J. Lee\*, E.A. Kyriakidou, Ag ion-exchanged ZSM-5 zeolites for hydrocarbon trapping applications, 22<sup>nd</sup> CLEERS Workshop, Ann Arbor, MI, Sept 2019
22. C.-H. Liu\*, Y. Chen\*, E.A. Kyriakidou, Low temperature methane combustion over palladium ion-exchanged zeolites, 22<sup>nd</sup> CLEERS Workshop, Ann Arbor, MI, Sept 2019
21. C.-H. Liu\*, J. Chen\*, T.J. Toops, E.A. Kyriakidou, Controlled Synthesis of High Surface Area Pd and Pt/SiO<sub>2</sub>(core)@ZrO<sub>2</sub>(shell) Catalysts for Low Temperature Oxidation Applications, 22<sup>nd</sup> CLEERS Workshop, Ann Arbor, MI, Sept 2019
20. J. Chen\*, B.D. Carlson<sup>+</sup>, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, Complete methane combustion over Ni/Ce<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> catalysts, 26<sup>th</sup> NACS Meeting, Chicago, IL, Jun 2019
19. J. Lee\*, L. Chopra<sup>+</sup>, E.A. Kyriakidou, Ion-exchanged zeolites for hydrocarbon traps and passive NO<sub>x</sub> adsorption applications, Catalysis Gordon Research Conference – Accelerating Catalytic Solutions to Global Grand Challenges, New London, NH, Jun 2018

Prior to UB:

18. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A comparative study of ZSM-5 and  $\beta$ -zeolites for hydrocarbon trap applications under “cold-start” conditions, 16<sup>th</sup> ICC, Beijing, China, Jul 2016
17. E.A. Kyriakidou, M.J. Lance, J.-S. Choi, T.J. Toops, Impact of ZrO<sub>2</sub>-based Supports on the Durability and Low-Temperature Performance of Pd-based Oxidation Catalysts, 9<sup>th</sup> ICEC, Newcastle, Australia, Jul 2016
16. E.A. Kyriakidou, T.J. Toops, M.J. Lance, A. Binder, J.E. Parks II, Impact of Mixed Oxide Supports on the Durability and Low-Temperature Performance of Pd-based Diesel Oxidation Catalysts, 19<sup>th</sup> CLEERS Workshop, Ann Arbor, MI, Apr 2016
15. E.A. Kyriakidou, J.-S. Choi, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and BEA-Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, 19<sup>th</sup> CLEERS Workshop, Ann Arbor, MI, Apr 2016
14. E.A. Kyriakidou, Rational Design of Catalytic and Hydrocarbon Trapping Materials to Meet Automotive Emissions Regulations, AIChE Annual Conference, Salt Lake City, UT, Nov 2015
13. E.A. Kyriakidou, J.-S. Choi, M.-Y. Kim, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and  $\beta$ -Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, 14<sup>th</sup> SECS Annual Symposium, Clemson, SC, Sept 2015
12. E.A. Kyriakidou, C. Papadimitriou, O.S. Alexeev, J.R. Regalbuto, M.D. Amiridis, Synthesis of Ag Supported Catalysts on Oxides, 14<sup>th</sup> SECS Annual Symposium, Clemson, SC, Sept 2015

11. M.-Y. Kim, E.A. Kyriakidou, J.-S. Choi, T.J. Toops, C. Thomas, A. Binder, J.E. Parks II, V. Schwartz, J. Chen, Impact of ZrO<sub>2</sub> Supports on the Durability and Low Temperature Performance of Pd-based Diesel Oxidation Catalysts, 18<sup>th</sup> CLEERS Workshop, Dearborn, MI, Apr 2015
10. E.A. Kyriakidou, J.-S. Choi, M.-Y. Kim, T.J. Toops, J.E. Parks II, A Comparative Study of ZSM-5 and  $\beta$ -Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, 18<sup>th</sup> CLEERS Workshop, Dearborn, MI, Apr 2015
9. E.A. Kyriakidou, K.V. Khivantsev, T.M. Gostanian<sup>+</sup>, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of Dendrimer-Stabilized Au Nanoparticles, 23<sup>rd</sup> NACS Meeting, Louisville, KY, Jun 2013
8. E.A. Kyriakidou, O.S. Alexeev, J.R. Regalbuto, M.D. Amiridis, Investigation of Ag Diammine Impregnation on Low/High PZC Oxides and Carbon Using Strong Electrostatic Adsorption, AIChE Annual Conference, Pittsburgh, PA, Nov 2012
7. E.A. Kyriakidou, K.V. Khivantsev, C. Papadimitriou<sup>+</sup>, T.M. Gostanian<sup>+</sup>, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of PAMAM-Stabilized Metal Ions in Aqueous Solutions: Effect of pH and Dialysis, AIChE Annual Undergraduate Conference, Pittsburgh, PA, Oct 2012
6. C. Papadimitriou<sup>+</sup>, E.A. Kyriakidou, O.S. Alexeev, M.D. Amiridis, Synthesis of Heterogeneous Bimetallic Fe-Au Catalysts with Controlled Structure and Composition at the Nanoscale, AIChE Annual Undergraduate Conference, Minneapolis, MN, Oct 2011
5. T.M. Gostanian<sup>+</sup>, E.A. Kyriakidou, K.V. Khivantsev, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of PAMAM-Stabilized Cu/Au Nanoparticles, AIChE Annual Undergraduate Conference, Minneapolis, MN, Oct 2011
4. E.A. Kyriakidou, P.T. Fanson, O.S. Alexeev, M.D. Amiridis, Preparation of M-G4OH Nanocomposites in Aqueous Solution: Effect of Dialysis and pH Adjustment, 22<sup>nd</sup> NACS Meeting, Detroit, MI, Jun 2011
3. E.A. Kyriakidou, P.T. Fanson, O.S. Alexeev, M.D. Amiridis, Preparation of M-G4OH Nanocomposites in Aqueous Solution: Effect of Dialysis and pH adjustment, 7<sup>th</sup> International Dendrimer Symposium, Gaithersburg, MD, Jun 2011
2. E.A. Kyriakidou, O.S. Alexeev, M.D. Amiridis, Preparation and quantitative analysis of PAMAM-stabilized Metal Nanoparticles: Effect of Dialysis and pH Adjustment, Graduate Student Symposium – USC, Columbia, SC, Apr 2011
1. E.A. Kyriakidou, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of PAMAM-Stabilized Metal Nanoparticles: Effect of Dialysis and pH Adjustments, 9<sup>th</sup> SECS Annual Symposium, Ashville, NC, Sept 2010

## POST-DOCTORAL ASSOCIATE

1. Prateek Khatri (Chemical Engineering, IIT Delhi (India), Ph.D. 2022), Responsible for investigating catalysts active at low temperatures towards the CH<sub>4</sub> oxidation reaction, Jul 2022 – present.

## GRADUATE STUDENTS

### Dissertations/Theses Directed (as major professor unless otherwise indicated)

#### *Ph.D. degrees (3)*

1. Ms. Chih-Han Liu, Ph.D., Jan 2018 – Feb 2022, Development of Low-Temperature Oxidation Catalysts for Diesel and Gasoline Vehicles (*Current position*: Development Engineer, Alkegen, Tonawanda, NY).
2. Mr. Junjie Chen, Ph.D., Jan 2017 – Jan 2022, Engineering Cost-effective Metal/Metal Oxide-based Catalysts with Enhanced Activity for Low-Temperature Emissions Control (*Current position*: Postdoctoral Scholar (mentor: Dr. Thomas Jaramillo), Chemical Engineering Department at Stanford University, Stanford, CA).
3. Mr. Jungkuk Lee, Ph.D., Jan 2017 – Mar 2021, Zeolite-based Hydrocarbon Traps and Passive NO<sub>x</sub> Adsorbers for Vehicle Cold Start Applications (*Current position*: Postdoctoral Appointee (mentor: Dr. Yuepeng Zhang), Argonne National Laboratory, Lemont, IL).

M.S. degrees (theses/projects) (2)

1. Mr. Kevin Giewont, M.S., Jan 2020 – May 2021, Data-driven Screening of Catalytic Zeolite Materials in Environmental Applications (*Current position*: Lithography Process Engineer, Global Foundries, Malta, NY).
2. Ms. Caitlin Horvatits, M.S., Jan 2019 – May 2020, A Theoretical Study of Adsorption Over the Ag/SSZ-13 Zeolite Informed with Experiments (*Current position*: Development Engineer, Alkegen, Tonawanda, NY).

M.S. and M.Eng. degrees (w/o theses/projects) (2)

1. Mr. Siming Hoo, M.Eng, Jan 2018 – May 2019, Oxidative Propane Dehydrogenation over Non-noble Metal Catalysts (*Current position*: Ph.D. candidate (Ph.D. advisor: Dr. Xianqin Wang), Chemical and Materials Engineering Department at New Jersey Institute of Technology, Newark, NJ).
2. Mr. Yiran Chen, M.S., Jan 2017 – Jun 2018, Small, Medium, and Large Pore Zeolites for Low Temperature CH<sub>4</sub> Oxidation (*Current position*: Process Integration Engineer, Intel Corporation, Phoenix, AZ).

Dissertations/Theses in Progress (1)

1. Mr. Jacob Concolino, Ph.D., Jan 2022 – present, degree expected Sept 2027
2. Mr. Tala Mon, Ph.D., Jan 2020 – present, degree expected Sept 2025

Special Achievements of Graduate Students (7)

1. Mr. J. Chen, Recipient of the Dean's Graduate Achievement Award, School of Engineering and Applied Sciences (UB), Buffalo, NY, May 2022
2. Mr. J. Chen, Recipient of a CBE Outstanding Dissertation Award, Buffalo, NY, May 2022
3. Mr. T. Mon, Recipient of a Graduate Student Association (UB) Travel Award (\$251), Buffalo, NY, May 2022
4. Mr. J. Chen, Recipient of an Outstanding Presentation Certificate, CBE Ph.D. seminar, Buffalo, NY, Dec 2021
5. Mr. J. Chen, Recipient of a Travel Award from the Catalysis and Reaction Engineering (CRE) Division to attend the 2020 AIChE Annual Conference (\$145), *virtual due to COVID-19 pandemic*, Oct 2020
6. Mr. J. Lee, J. Chen, and C.-H. Liu, Recipients of 3 Graduate Student Association (UB) Travel Awards (3x\$550), Buffalo, NY, Aug – Oct 2019
7. Mr. J. Lee, Recipient of an Outstanding Presentation Certificate, CBE Ph.D. seminar, Buffalo, NY, Dec 2018

Prior to UB (5):

8. Ms. C. Papadimitriou, Recipient of a 2<sup>nd</sup> Place Oral Presentation Award, Southern Regional AIChE Conference, Lexington, KY, Apr 2013
9. Ms. C. Papadimitriou, Recipient of a 2<sup>nd</sup> Place Oral Presentation Award, Southern Regional AIChE Conference, Clemson, SC, Mar 2012
10. Mr. T.M. Gostanian, Recipient of a 3<sup>rd</sup> Place Poster Award, Annual AIChE Student Conference, Minneapolis, MN, Oct 2011
11. Mr. T.M. Gostanian, Recipient of a 1<sup>st</sup> Place Award Technical Oral Presentation, Chemical Engineering Research Experience for Undergraduates (REU) Research Symposium, USC, Columbia, SC, Aug 2011
12. Ms. C. Kubicki, Recipient of a 1<sup>st</sup> Place Oral Presentation Award, Discovery Day, USC, Columbia, SC, Apr 2010

Dissertation/Thesis Committee Member

<i>Student Name</i>	<i>Degree</i>	<i>Department</i>	<i>Major Advisor</i>
Mr. Zhang Bingzhang	Ph.D. candidate (Aug 2027)	CBE	G. Wu

Mr. Ryan Heitkamp	Ph.D. candidate (Aug 2026)	CBE	G. Wu
Ms. Kate Chen	Ph.D. candidate (Aug 2025)	CBE	G. Wu
Mr. Kaleb Friedman	Ph.D. candidate (Aug 2025)	CBE	M. Yu
Mr. Cameron Priest	Ph.D. candidate (Aug 2024)	CBE	G. Wu
Ms. Nadia Mohd Adli	Ph.D. (Dec 2022)	CBE	G. Wu
Ms. Shreya Mukherjee	Ph.D. (Aug 2021)	CBE	G. Wu
Mr. Mihir Ragesh Shah	M.S. (May 2021)	CBE	M. Swihart
Mr. Qing Lan	M.S. (Aug 2018)	CBE	G. Wu

## UNDERGRADUATE STUDENTS

### *Current (2)*

1. Mr. Scott Coia, Feb 2022 – May 2022 and Aug 2022 – present
2. Ms. Ruth Bello, Jul 2021 – present (Louis Armstrong Alliance for Minority Participation (LSAMP) program: Jun 2022 – Aug 2022)

### *Research group alumni (8)*

1. Mr. Jesse Canavan, Feb 2021 – May 2022 (*Current position:* Ph.D. candidate (Ph.D. advisor: Dr. Paul J. Dauenhauer), Chemical Engineering and Materials Science Department, University of Minnesota, Minneapolis, MN).
2. Mr. Neil Shah, Mar 2022 – May 2022 (*Current position:* freshman, CBE UB).
3. Ms. Alexis Sill-Ruiz, Mar 2022 – May 2022 (LSAMP) (*Current position:* sophomore, CBE UB).
4. Ms. Angela Aguirre, May 2021 – Aug 2021 (LSAMP) (*Current position:* senior, CBE UB).
5. Mr. Timothy Buchanan, May 2019 – May 2020 (*Current position:* Associate Technical Service Engineer, Curbell Plastics, Orchard Park, NY).
6. Mr. Benjamin D. Carlson, Jun 2018 – May 2019 (*Current position:* Ph.D. candidate (Ph.D. advisors: Dr. Mitchell Anthamatten and Dr. Shaw H. Chen), Chemical Engineering Department at the University of Rochester, Rochester, NY).
7. Mr. Lakshay Chopra, Feb 2017 – Apr 2018 (*Current position:* Data Science Engineer, Pfizer Inc., New York, NY).
8. Ms. Christine Ma, Jan 2017 – May 2017 (*Current position:* Multi-Disciplined Engineer, Raytheon Missiles & Defense, Andover, MA).

### Prior to UB:

#### *USC Undergraduate students (3)*

1. Ms. Christina Papadimitriou, Apr 2011 – Apr 2013 (*Current position:* Machine Learning Engineering Manager, Palo Alto Networks, New York, NY).
2. Mr. Thomas M. Gostanian, May 2011 – Jul 2011 (*Current position:* Manufacturing Engineer III, Bio-Rad Laboratories, Portland, ME).
3. Ms. Cristina Kubicki, Jan 2010 – Apr 2010 (*Current position:* Process Automation Lead Engineer, the Dow Chemical Company, Houston, TX).

## TEACHING

### *Formal courses taught at UB*

- CE 509, Transport Phenomena I (graduate core course; 3 credit hours)  
Fall 2022; enrollment: 17 students  
Fall 2020; enrollment: 22 students  
Fall 2018; enrollment: 29 students  
Fall 2017; enrollment: 16 students
- CE 416/516, Principles and Practice of Environmental Catalysis (graduate/undergraduate elective; 3 credit hours)  
Spring 2022; enrollment: 6 students – 3 graduate and 3 undergraduate

Spring 2021; enrollment: 5 student – all graduate  
Spring 2020; enrollment: 22 students – 18 graduate and 4 undergraduate  
Spring 2019; enrollment: 18 students – 13 graduate and 5 undergraduate  
Spring 2018; enrollment: 14 students – 11 graduate and 3 undergraduate

*Other courses taught at UB*

- CE498, Undergraduate Research
- CE502, Individual Problems (MS level)
- CE503 & CE504, Engineering Projects (MEng level)
- CE506, Master's Research
- CE559 & CE560, Thesis (MS level)
- CE601 & CE602, Individual Problems (Ph.D. level)
- CE659 & CE660, Dissertation (Ph.D. level)

For the above courses, the semester offered and enrollment details are not listed here. These courses comprise several additional credit hours per semester as reflected in the number of students advised who have registered for these courses: 4 Ph.D.; 6 Masters'; 3 undergraduates.

## **PROFESSIONAL ACTIVITIES**

*(AIChE Annual Conference sessions are part of the CRE Division)*

### Leadership

#### *Conference Sessions Organized and Chaired*

- Environmental Catalysis I: Applied Catalysis for Emissions Control, AIChE Annual Conference, Phoenix, AZ, Nov 2022
- Microporous and Mesoporous Materials I: Catalytic Sites, AIChE Annual Conference, Phoenix, AZ, Nov 2022
- NOx Abatement and Three-Way Catalysis I, 27<sup>th</sup> NACS, New York, NY, May 2022
- Creative C<sub>1</sub> Chemistry, 27<sup>th</sup> NACS, New York, NY, May 2022
- Methane to C<sub>n</sub>, 27<sup>th</sup> NACS, New York, NY, May 2022
- Environmental and Automotive Catalysis I: Passive NOx Adsorber and NOx Reduction, AIChE Annual Conference, Boston, MA, Nov 2021
- Emissions Control I: Passive NOx Adsorbers and Hydrocarbon Traps, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
- Emission Control Sessions 3A and 4A, 11<sup>th</sup> ICEC, *virtual due to COVID-19 pandemic*, Sept 2020
- Environmental and Automotive Catalysis I, AIChE Annual Conference, Orlando, FL, Nov 2019
- Environmental Catalysis Session, 26<sup>th</sup> NACS, Chicago, IL, Jun 2019
- Fundamentals of Catalysis V, AIChE Annual Conference, Pittsburgh, PA, Nov 2018
- Future Automotive Catalysis I, AIChE Annual Conference, Pittsburgh, PA, Nov 2018
- Fundamentals of Supported Catalysis III, AIChE Annual Conference, Pittsburgh, PA, Nov 2018
- Applied Environmental Catalysis I & II, AIChE Annual Conference, Minneapolis, MN, Oct 2017
- Future Automotive Catalysis, AIChE Annual Conference, Minneapolis, MN, Oct 2017
- Fundamentals of Supported Catalysis I: Hydrocarbon Reactions, AIChE Annual Conference, Minneapolis, MN, Oct 2017
- Nanoporous Materials for Catalysis Session (15 invited speakers) (Division of Catalysis Science and Technology), 254<sup>th</sup> ACS National Meeting, Washington, DC, Aug 2017
- Future Automotive Catalysis: Automotive Emissions Control, AIChE Annual Conference, San Francisco, CA, Nov 2016
- Catalytic Processing of Fossil and Biorenewable Feedstocks V: Acids and Polyols, AIChE Annual Conference, San Francisco, CA, Nov 2016

- Environmental Catalysis I & II: Gas Emission Control, AIChE Annual Conference, Salt Lake City, UT, Nov 2015

### Other Service

#### *Journal Reviewer*

Applied Catalysis A: General, Applied Catalysis B: Environmental, Catalysis Today, Catalysis Communications, Catalysis Science & Technology, SAE International Journal of Fuels and Lubricants, Emission Control Science & Technology, Journal of Molecular Catalysis A: Chemical, ACS Catalysis, Industrial & Engineering Chemistry Research (ACS publications), Chemical Engineering Journal, Catalysis Letters, ChemCatChem, New Journal of Chemistry, Energy Technology, Catalysts

#### *Proposal Reviewer*

- NSF CBET *ad hoc* (2022)
- NSF Future Manufacturing (FM), *virtual due to COVID-19 pandemic* (2021)
- NSF CBET Review Panel (2019, 2018, 2017)
- ACS Petroleum Research Fund *ad hoc* (2019)

#### *Poster Judge*

- Catalysis Society of Metro New York, *virtual due to COVID-19 pandemic*, Mar 2021
- SEAS Graduate Poster Competition, Buffalo, NY, Apr 2017
- Catalysis Society of Metro New York, Clinton, NJ, Mar 2017
- AIChE Annual Conference, CRE Division poster session, San Francisco, CA, Nov 2016
- 15<sup>th</sup> Annual Symposium of the Southeastern Catalysis Society, Asheville, NC, Sept 2016
- 19<sup>th</sup> Annual CBE Graduate Student Research Symposium, Buffalo, NY, Sept 2016

### Membership in Professional Societies

- American Chemical Society (ACS) Catalysis Science & Technology Division, Member, 2022 – present
- ACS, Member, 2017 – present
- Catalysis Society of Metropolitan New York, Member, 2017 – present
- Catalysis and Reaction Engineering Division (AIChE), Member, 2016 – present
- North American Catalysis Society, Member, 2009 – present
- American Institute of Chemical Engineers (AIChE), Member, 2008 – present
- Cross-Cut Lean Exhaust Emissions Reduction Simulations (CLEERS), Member, 2015 – 2021
- Southeastern Catalysis Society, Member, 2010 – 2016

## **UNIVERSITY SERVICE**

### Department Committees

- Member, Faculty Search Committee, Dec 2022 – present
- Member, Undergraduate Committee, Apr 2018 – present
- Co-organizer, CBE Annual Graduate Research Symposium at UB, 2017 – present
- Participated in CBE's Open House for future undergraduate students, Apr 23, 2022, Apr 20, 2019, and Apr 15, 2018
- Judge, Chemical Engineering Plant Design (CE 408) final presentations, May 2018, 2019
- Participated in Science Teachers Association of New York State (STANYS) Science Fair hosted by CBE, Jun 2, 2018
- Member, Graduate Recruitment Committee, Jan 2017 – Apr 2018
- Recruiter, Graduate Student Recruitment Event, AIChE Annual Conference, Minneapolis, MN, Nov 2017 and San Francisco, CA, Oct 2016

## **OUTREACH ACTIVITIES**

- Poster judge, Terra Rochester Finger Lakes Science and Engineering Fair (TRFSEF), Mar 2022, 2021
- Poster judge, Western New York Regional Science and Engineering Fair (WNYRSEF), Mar 2019
- Volunteer, “Science is Elementary” (Kindergarten, 1<sup>st</sup> - 3<sup>rd</sup> grades) through the School of Engineering and Applied Sciences at:
  - Westminster Charter School in Buffalo, NY, Oct 2019, Feb 2019, Apr 2018
  - Highgate Heights Elementary School in Buffalo, NY, Oct. 2019
- Presenter, TINKER summer camp (9<sup>th</sup>-12<sup>th</sup> grade girls) through CBE Society of Women Engineers, Aug 2017