

Eleni A. Kyriakidou

Associate Professor

Department of Chemical and Biological Engineering

Work Address:

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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 (H₂) Water Gas Shift (WGS) reaction in a proton-conduction cell-reactor using a Pd (palladium) catalyst.

PROFESSIONAL EXPERIENCE

Visiting Professor, Dept. of Chemical Engineering Jan 2024 – Dec 2024

University of Patras, Patras, Greece

Associate Professor (with tenure), Dept. of Chemical and Biological Engineering (CBE)

Sept 2023 – present

University at Buffalo (UB), Buffalo, NY

Assistant Professor, Dept. of Chemical and Biological Engineering

Jan 2017 – Aug 2023

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, 7th 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+, 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*, 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*, 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:

([□] 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[□], May 2012 – Aug 2013, Magellan Undergraduate Research Fellowship (USC), \$2,500
1. Synthesis of Ag Catalysts with relatively Small Nanoparticles, Awardee: Ms. Christina Papadimitriou[□], Aug 2012 – May 2013, Magellan Mini-grant Undergraduate Research Fellowship (USC), \$1,000

PUBLICATIONS (Google Scholar Citations: 920, h-index: 16, i10-index: 24)

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

([◊], *, +, and [□] denote UB postdoctoral associates, graduate, UB undergraduate, and USC undergraduate students advised by E.A. Kyriakidou, respectively, [†] indicates the corresponding author(s), and [◊] 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).

Review Articles

2. J. Lee*, J.R. Theis, E.A. Kyriakidou[†], Vehicle emissions trapping materials: successes, challenges, and the path forward, *Applied Catalysis B: Environmental*, 243, 397-414 (2019).
1. 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).

Refereed Journal Articles

Published

31. J. Loprete, R.R. Hadlich, A. Sirna, T. Mon*, E.A. Kyriakidou, D. Assanis[†], Exhaust Slip-Stream Sampling System for Aftertreatment Device Testing, 2024 WCX World Congress Experience, SAE Technical Paper 2024-01-2703 (2024).
30. J. Chen*, J. Lee*, P. Khatri[◊], Todd J. Toops, E.A. Kyriakidou[†], Condition-dependent NOx Adsorption/Desorption over Pd/BEA: A Combined Micro-reactor and *in-situ* DRIFTS Study, *AIChE Journal*, e18400 (2024).

29. R. Bello⁺, E.A. Kyriakidou[†], E.A. Walker[†], Dataset for CO₂ Purification via a Zeolite Material, *Results in Surfaces and Interfaces*, 14, 100177 (2024).
28. J. Chen^{*}, C.-H. Liu^{*}, T.J. Toops, H.N. Pham, A.K. Datye, E.A. Kyriakidou[†], Designing Ultrastable Pt/CeO₂-Al₂O₃ Nanosheet Catalysts for Three-Way Catalysts Applications, *Chemical Engineering Journal*, 477, 147086 (2023).
27. S. Porter, A. Ghosh, C.-H. Liu^{*}, D. Kunwar, C. Thompson, R. Alcalá, D.P. Dean, J.T. Miller, A. DeLaRiva, H. Pham, E. Peterson, A. Brearley, J. Watt, E.A. Kyriakidou, A.K. Datye[†], Biphasic Janus Particles Explain Self-Healing in Pt-Pd Diesel Oxidation Catalysts, *ACS Catalysis*, 13, 5456-5471 (2023). (Front Cover & ACS Editor's Choice)
26. J. Chen^{*}, H. Pham, T. Mon^{*}, T.J. Toops, A. Datye, Z. Li, E.A. Kyriakidou[†], Ni/CeO₂ Nanocatalysts with Optimized CeO₂ Support Morphologies for CH₄ Oxidation, *ACS Applied Nano Materials*, 6, 4544-4553 (2023).
25. C.-H. Liu^{*}, S. Porter, J. Chen^{*}, H. Pham, E.J. Peterson, P. Khatri[◊], T.J. Toops, A. Datye, E.A. Kyriakidou[†], Enhanced Low Temperature Performance of Bimetallic Pd/Pt/SiO₂(core)@Zr(shell) Diesel Oxidation Catalysts, *Applied Catalysis B: Environmental*, 327, 122436 (2023).
24. J. Canavan⁺, K. Giewont^{*}, E.A. Kyriakidou[†], E.A. Walker[†], The Feasibility of Methane Oxidation on SSZ-13 Bridged Pd₂O_x Sites: A Theoretical Study, *The Journal of Physical Chemistry C*, 126, 17123-17134 (2022).
23. H. Tabassum[◊], S. Mukherjee[◊], J. Chen^{◊*}, D. Holiharimanana[◊], S. Karakalos, N.M. Adli, X. Yang, S. Hwang[†], T. Zhang, B. Lu, M. Chen, Z. Tang, E.A. Kyriakidou[†], Q. Ge[†], G. Wu[†], 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).
22. S. Liu, C. Dun, J. Chen^{*}, S. Rao, M. Shah, J. Wei, K. Chen, Z. Xuan, E.A. Kyriakidou, J.J. Urban, M.T. Swihart[†], A General Route to Flame Aerosol Synthesis and in situ Functionalization of Mesoporous Silica, *Angewandte Chemie International Edition*, 61, e202206870 (2022).
21. S. Liu, C. Dun, M. Shah, J. Chen^{*}, S. Rao, J. Wei, E.A. Kyriakidou, J.J. Urban, M.T. Swihart[†], Producing Ultrastable Ni-ZrO₂ Nanoshell Catalysts for Dry Reforming of Methane by Flame Synthesis and Ni Exsolution, *Chem Catalysis*, 2, 1-13 (2022).
20. 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_x Adsorbers, *Chemical Engineering Journal*, 440, 135834 (2022).
19. 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 CH₄ Oxidation, *ACS Catalysis*, 11(21), 13066-13076 (2021).
18. J. Lee^{*}, K. Giewont^{*}, J. Chen^{*}, C.-H. Liu^{*}, E.A. Walker, E.A. Kyriakidou[†], Ag/ZSM-5 Traps for C₂H₄ and C₇H₈ Adsorption under Cold-Start Conditions, *Microporous and Mesoporous Materials*, 327, 111428 (2021).
17. J. Chen^{*}, T. Buchanan⁺, E.A. Walker, T.J. Toops, Z. Li, P. Kunal, E.A. Kyriakidou[†], Mechanistic Understanding of Methane Combustion over Ni/CeO₂: A Combined Experimental and Theoretical Approach, *ACS Catalysis*, 11(15), 9345-9354 (2021).
16. 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).
15. C.-H. Liu^{◊*}, J. Chen^{◊*}, T.J. Toops, J.-S. Choi, C. Thomas, M.J. Lance, E.A. Kyriakidou[†], Hydrothermally Stable Pd/SiO₂@Zr Core@Shell Catalysts for Diesel Oxidation Applications, *Chemical Engineering Journal*, 425, 130637 (2021).
14. 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).
13. 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).

12. 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).
11. 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).
10. 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).
9. J. Chen*, B.D. Carlson+, T.J. Toops, Z. Li, M.J. Lance, J.-S. Choi, E.A. Kyriakidou†, Methane combustion over Ni/Ce_xZr_{1-x}O₂ catalysts: impact of ceria/zirconia ratio, *ChemCatChem*, 12, 5558-5568 (2020).
8. 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).
7. 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).
6. 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 TiO₂ Nanowire Array, *Nature Communications*, 11(1), 1-10 (2020). [featured in Editor's Highlights]

Prior to UB:

5. A.P. Wong, E.A. Kyriakidou, T.J. Toops, J.R. Regalbuto†, The Catalytic Behavior of Precisely Synthesized Pt-Pd Bimetallic Catalysts for Use as Diesel Oxidation Catalysts, *Catalysis Today*, 267, 145-156 (2016).
4. M.-Y. Kim, E.A. Kyriakidou, J.-S. Choi†, 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 ZrO₂ Supports, *Applied Catalysis B: Environmental*, 187, 181-194 (2016).
3. E.A. Kyriakidou, O.S. Alexeev, A.P. Wong, C. Papadimitriou[□], M.D. Amiridis, J.R. Regalbuto†, Synthesis of Ag Nanoparticles on Oxide and Carbon Supports from Ag Diammine Precursor, *Journal of Catalysis*, 334, 749-756 (2016).
2. E.A. Kyriakidou, K. Khivantsev, T.M. Gostanian[□], O.S. Alexeev†, M.D. Amiridis†, Silica-Supported Gold/Dendrimer Nanocomposites with Controlled Sizes of Gold Particles, *Applied Catalysis A: General* 504, 482-492 (2015).
1. Z. Nazarpour, K. Khivantsev, Eleni A. Kyriakidou, C. Kubicki, S. Ma, P.T. Fanson, O.S. Alexeev†, M.D. Amiridis†, Dendrimer-Mediated Synthesis of Supported Rhodium Nanoparticles with Controlled Size: Effect of pH and Dialysis, *Journal Colloid & Interface Science* 398, 22-32 (2013).

In Review

4. C.-H. Liu*, J. Chen*, P.R. Raffaele, M.J. Lance, P. Khatri[○], T. Mon*, T.J. Toops, A.A. Shestopalov, E.A. Kyriakidou†, Pt-based Three-way Catalysts Supported on Novel Configured CeO₂(core)@ZrO₂(shell) supports, In Review, Jun 2024.
3. J. Loprete, A. Sirna, T. Mon*, E.A. Kyriakidou, D. Assanis†, Demonstration of Scaled Flowrate Testbed for Emission Aftertreatment Device Testing Under Representative Engine Exhaust Conditions, American Society of Mechanical Engineers (ASME) 2024 Internal Combustion Engine Division Forward Conference (ICEF2024), Technical Paper ICEF2024-141651, Submitted, Apr 2024.
2. T. Mon*, K. Giewont*, J. Chen*, C.-H. Liu*, J. Concolino*, P. Khatri[○], E.A. Walker, E.A. Kyriakidou†, Methane oxidation in palladium/zeolite catalysts: Facilitating palladium oxide formation and elucidating the reaction mechanism, In Review, Mar 2024.

1. V.P.S. Marthi[◇], S. Mukherjee[◇], H. Tabassum, T. Mon^{*}, J. Chen^{*}, D. Holiharimanana, S. Hwang[†], X. Yang, E.A. Kyriakidou[†], Q. Ge[†], G. Wu[†], Mixed Oxide Supported Ultra-Low Ru Catalysts for Efficient Ammonia Decomposition toward Hydrogen Generation: Approaching Thermodynamic Limitations, Submitted, Mar 2024.

TECHNICAL PRESENTATIONS

Invited Talks

(presenter name underlined; ^{*} UB graduate students; ⁺ UB undergraduate students)

21. T. Mon^{*}, J. Liu, J. Concolino^{*}, J. Chen^{*}, V.J. Cybulskis, E.A. Kyriakidou, High Silica Small Pore Zeolites for Low Temperature CH₄ Oxidation Applications, Surface Reactivity Laboratory (Laboratoire de Réactivité de Surface), Sorbonne University, Paris, France, Jul 2024
20. T. Mon^{*}, Z. Ran, D. Assanis, E.A. Kyriakidou, SO₂ Resistant and Hydrothermally Stable High Silica Pd/CHA for CH₄ Oxidation, 14th Panhellenic Chemical Engineering Scientific Conference, Thessaloniki, Greece, May 2024 (**Keynote Lecture**)
19. T. Mon^{*}, J. Liu, J. Concolino^{*}, J. Chen^{*}, V.J. Cybulskis, E.A. Kyriakidou, Pd/Zeolites: Promising Low Temperature CH₄ Oxidation Catalysts, Centre for Research & Technology Hellas (CERTH), Thessaloniki, Greece, May 2024
18. C.-H. Liu^{*}, J. Chen^{*}, T.J. Toops, C. Thomas, M.J. Lance, S. Porter, H. Pham, A.K. Datye, J.-S. Choi, E.A. Kyriakidou, Core@Shell Shaped Catalysts with Enhanced Low Temperature Activity for Emissions Control Applications, University of Patras, Chemical Engineering Department, Patras, Greece, Apr 2024
17. T. Mon^{*}, J. Liu, J. Concolino^{*}, J. Chen^{*}, V.J. Cybulskis, E.A. Kyriakidou, Low Temperature CH₄ Oxidation in Pd/Zeolite Catalysts: Recent Advances & Challenges, Foundation for Research and Technology Hellas (FORTH) – Institute of Chemical Engineering Sciences (ICE-HT), Patras, Greece, Mar 2024
16. T. Mon^{*}, C.-H. Liu^{*}, J. Chen^{*}, E.A. Kyriakidou, Effect of Pd Speciation on CH₄ Oxidation and Passive NO_x Adsorption/Desorption Performance over Zeolite-based Catalysts, ACS Fall 2022 – Platinum Group Metal-based Sustainable Catalysts for Emission Control & Efficient CH₄ Conversion, Chicago, IL, Aug 2022
15. C.-H. Liu^{*}, J. Chen^{*}, T.J. Toops, M.J. Lance, H. Pham, A.K. Datye, T. Mon^{*}, E.A. Kyriakidou, Three-Way Catalysts: Achieving an Enhanced Low-Temperature Performance and Hydrothermal Stability, Alkegen, Tonawanda, NY, Jul 2022
14. C.-H. Liu^{*}, J. Chen^{*}, 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, 27th NACS Meeting, New York, NY, May 2022 (**Keynote Lecture**)
13. J. Chen^{*}, J. Lee^{*}, E.A. Kyriakidou, Breaking the NO_x Desorption Temperature Limit of Pd/BEA Passive NO_x Adsorbers by Second Metal Incorporation, ACS Spring 2022 – Catalysts for Emission Control, San Diego, CA, Mar 2022
12. 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, 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, 24th 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-CeO₂-Al₂O₃ 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; ° UB postdoctoral associates; * graduate students; + undergraduate student*)

Oral Presentations

57. J. Loprete, A. Sirna, T. Mon, E.A. Kyriakidou, D. Assanis, Demonstration of Scaled Flowrate Testbed for Emission Aftertreatment Device Testing Under Representative Engine Exhaust Conditions, ASME ICEF2024 Conference, San Antonio, TX, Oct 2024
56. A.K. Datye, S. Porter, A. Ghosh, R. Alcala, E.J. Peterson, H.N. Pham, D. Kunwar, C. Thompson, A.T. DeLaRiva, A. Brearley, J. Watt, D.P. Dean, J.T. Miller, C.-H. Liu*, E.A. Kyriakidou, Self-Healing Catalysts Via Atom Trapping, AIChE Annual Conference, Orlando, FL, Nov 2023
55. T. Mon*, J. Concolino*, J. Chen*, E.A. Kyriakidou, Promoting PdO Formation Via Pre-Exposure to Ambient Moisture, AIChE Annual Conference, Orlando, FL, Nov 2023
54. T. Mon*, E.A. Kyriakidou, Hydrothermal Stability and SO₂ Poisoning Resistance of High Silica Pd/SSZ-13 Minicores for CH₄ Oxidation, AIChE Annual Conference, Orlando, FL, Nov 2023
53. J. Liu, T. Mon*, R. Schuarca, J. Bond, E.A. Kyriakidou, V.J. Cybulskis, Improved Low-Temperature Catalytic Combustion of Methane over Pd in High-Silica Chabazite Zeolites, AIChE Annual Conference, Orlando, FL, Nov 2023
52. T. Mon*, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, Increasing Si/Al Molar Ratio to Improve Low Temperature CH₄ Oxidation over Pd/LTA, ASME ICEF2023 Conference, Pittsburg, PA, Oct 2023
51. J. Liu, T. Mon*, E.A. Kyriakidou, V.J. Cybulskis, Enhanced Stability and Low Temperature Performance of Pd-based CHA Zeolite Catalysts for Complete Methane Oxidation, 28th NACS Meeting, Providence, RI, Jun 2023

50. S. Porter, A. Ghosh, H. Pham, C.-H. Liu*, E.J. Peterson, E.A. Kyriakidou, A. Datye, Biphasic “Janus” Pt-Pd Particles Show Self-Healing Characteristics in Diesel Oxidation Catalysts, 28th NACS Meeting, Providence, RI, Jun 2023
49. T. Mon*, J. Chen*, C.-H. Liu*, J. Concolino*, E.A. Kyriakidou, Effect of Pd Speciation on CH₄ Oxidation and Passive NO_x Adsorption/Desorption Performance over Zeolite-based Catalysts, 28th NACS Meeting, Providence, RI, Jun 2023
48. T. Mon*, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, Low Temperature CH₄ Oxidation for High Silica Pd/LTA Catalysts, 28th NACS Meeting, Providence, RI, Jun 2023
47. T. Mon*, P. Khatri^o, D. Assanis, E.A. Kyriakidou, Hydrothermally Stable and Sulfur Tolerant Pd/Chabazite Catalysts for Low Temperature CH₄ Conversion, Natural Gas Vehicle Technology Forum (NGVTF) 2023, Downey, CA, Feb 2023
46. J. Liu, T. Mon*, E.A. Kyriakidou, V.J. Cybulskis, Improving Low-temperature CH₄ 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 CH₄ Oxidation, AIChE Annual Conference, Phoenix, AZ, Nov 2022
44. T. Mon*, C.-H. Liu*, J. Chen*, E.A. Kyriakidou, Effect of Pd Speciation on CH₄ Oxidation and Passive NO_x 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 CeO₂(core)@ZrO₂(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/SiO₂@Zr Core@Shell Catalysts for Diesel Oxidation Applications, 27th 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/CeO₂(core)@ZrO₂(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 CO₂ 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/ZrO₂ 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_x Adsorbers, AIChE Annual Conference, Boston, MA, Nov 2021
37. J. Chen*, C.-H. Liu*, T.J. Toops, Z. Li, E.A. Kyriakidou, Pt-CeO₂-Al₂O₃ 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 CH₄ 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_x adsorption, 23rd 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 CH₄ 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_x 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⁺, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Detailed Kinetic Study of the Complete Combustion of Methane over Ni/CeO₂ Catalysts, 11th 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_x Adsorption, 11th 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, 11th ICEC, *virtual due to COVID-19 pandemic*, Sept 2020
27. J. Chen*, B.D. Carlson⁺, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Kinetic Study of Methane Combustion over Ni/CeO₂ Based Catalysts, 17th 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, 17th 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⁺, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, A Detailed Kinetics Study for Complete Methane Combustion over Ni/Ce_xZr_{1-x}O₂ Catalysts, AIChE Annual Conference, Orlando, FL, Nov 2019
23. J. Chen*, B.D. Carlson⁺, J.-S. Choi, T.J. Toops, E.A. Kyriakidou, Complete Methane Oxidation over Ni/Ce_xZr_{1-x}O₂ 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/SiO₂(core)@ZrO₂(shell) Catalysts for Low Temperature Oxidation Applications, AIChE Annual Conference, Orlando, FL, Nov 2019
20. J. Chen*, B.D. Carlson⁺, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, Complete Combustion of Methane over Ni/CeO₂-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_x 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, 25th 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, 25th 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 TiO₂ Nano-Array Integrated Monolithic Catalysts, 25th 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 TiO₂ Nano-Array Integrated Monolithic Catalysts, 25th 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, 15th 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, 9th 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 ZrO₂ Supports on the Durability and Low-Temperature Performance of Pd-Based Diesel Oxidation Catalysts, 24th NACS Meeting, Pittsburgh, PA, Jun 2015
6. E.A. Kyriakidou, K. Khivantsev, T.M. Gostanian⁺, O.S. Alexeev, M.D. Amiridis, Silica-Supported Gold/Dendrimer Nanocomposites with Controlled Sizes of Gold Particles, 13th SECS Annual Symposium, Asheville, NC, Sept 2014
5. E.A. Kyriakidou, C. Papadimitriou⁺, O.S. Alexeev, J.R. Regalbuto, M.D. Amiridis, Ag Diammine Impregnation on Oxides/Oxidized Carbon Using Strong Electrostatic Adsorption, 23rd NACS Meeting, Louisville, KY, Jun 2013
4. C. Papadimitriou⁺, 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⁺, T.M. Gostanian⁺, 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⁺, 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⁺, K.V. Khivantsev, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of PAMAM-Stabilized Cu/Au Nanoparticles, 10th SECS Annual Symposium, Asheville, NC, Sept 2011

Poster Presentations

47. T. Mon^{*}, Z. Ran, D. Assanis, E.A. Kyriakidou, SO₂ Resistant and Hydrothermally Stable High Silica Pd/CHA for CH₄ Oxidation, 18th ICC, Lyon, France, Jul 2024
46. P. Mallis, G. Bampos, E.A. Kyriakidou, S. Tsatsos, G. Kyriakou, K.M. Papazisi, D. Tsiplakides, S. Balomenou, D. Kondarides, Ru-based Catalysts Supported on Alkaline Earth Metal Doped CeO₂ for the Dry Reforming of CH₄, 14th Panhellenic Chemical Engineering Scientific Conference, Thessaloniki, Greece, May 2024
45. J. Concolino^{*}, T. Mon^{*}, E.A. Kyriakidou, Co-Cation Promoted CH₄ Oxidation over Pd/SSZ-13 Catalysts, AIChE Annual Conference, Orlando, FL, Nov 2023
44. P. Khatri^o, T. Mon^{*}, J. Pacheco, B. Moden, E.A. Kyriakidou, Thermally Stable Pd/SSZ-13 Catalysts with Excellent Methane Oxidation Activity under Lean Conditions, ASME ICE Forward Conference 2023, Pittsburgh, PA, Oct 2023

43. T. Mon*, J. Concolino*, J. Chen*, E.A. Kyriakidou, Effect of H₂O Pre-exposure on CH₄ Oxidation and Passive NO_x Adsorption Performance over Pd/zeolite Catalysts, 15th European Congress on Catalysis, Prague, Czech Republic, Aug 2023
42. S.J. Porter, C.-H. Liu*, 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*, J. Liu, V.J. Cybulskis, E.A. Kyriakidou, High-Silica Pd/LTA Catalysts for Low Temperature CH₄ Oxidation, 27th NACS Meeting, New York, NY, May 2022
40. J. Liu, T. Mon*, E.A. Kyriakidou, V.J. Cybulskis, Designing Pd/CHA Zeolite Catalysts for Complete Methane Oxidation, 27th NACS Meeting, New York, NY, May 2022
39. J. Chen*, C.-H. Liu*, T.J. Toops, E.A. Kyriakidou, Engineering Hydrothermally Stable Pt/CeO₂-Al₂O₃ Nanosheet Catalysts for TWC Applications, 27th NACS Meeting, New York, NY, May 2022
38. K. Giewont*, J. Canavan+, E.A. Kyriakidou, E.A. Walker, Methane Oxidation on SSZ-13 Bridged Pd₂O_x Sites, 27th NACS Meeting, New York, NY, May 2022
37. T. Mon*, J. Chen*, C.-H. Liu*, E.A. Kyriakidou, Effect of Na in Low Temperature CH₄ Oxidation over Pd/H-SSZ-13, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2021
36. K. Giewont*, 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*, 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*, J. Chen*, T.J. Toops, J.-S. Choi, C. Thomas, M.J. Lance, E.A. Kyriakidou, Hydrothermally Stable Pd/SiO₂@ZrO₂ Core@Shell Catalysts for Diesel Oxidation Applications, NYCS Annual Meeting, *virtual due to COVID-19 pandemic*, Mar 2021
33. J. Chen*, K. Giewont*, E.A. Walker, Y. Niu, J. Lee*, E.A. Kyriakidou, Cobalt Induced PdO Formation in Low-Loading Pd/BEA Catalysts for CH₄ Oxidation, NYCS Annual Meeting, *virtual due to COVID-19 pandemic*, Mar 2021
32. T. Mon*, J. Liu, C.-H. Liu*, V.J. Cybulskis, E.A. Kyriakidou, Improved Low Temperature CH₄ Oxidation over Pd/H-LTA with Si/Al>8, 24th CLEERS Workshop, *virtual due to COVID-19 pandemic*, Sept 2021
31. J. Lee*, 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 CH₄ Oxidation, 23rd 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, 23rd 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/CeO₂(core)@ZrO₂(shell) Catalysts for Low Temperature TWC Applications, 23rd 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, 17th 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, 17th 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_x adsorption, 22nd CLEERS Workshop, Ann Arbor, MI, Sept 2019
23. J. Lee*, E.A. Kyriakidou, Ag ion-exchanged ZSM-5 zeolites for hydrocarbon trapping applications, 22nd 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, 22nd 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/SiO₂(core)@ZrO₂(shell) Catalysts for Low Temperature Oxidation Applications, 22nd CLEERS Workshop, Ann Arbor, MI, Sept 2019
20. J. Chen*, B.D. Carlson⁺, J.-S. Choi, Z. Li, T.J. Toops, E.A. Kyriakidou, Complete methane combustion over Ni/Ce_xZr_{1-x}O₂ catalysts, 26th NACS Meeting, Chicago, IL, Jun 2019
19. J. Lee*, L. Chopra⁺, E.A. Kyriakidou, Ion-exchanged zeolites for hydrocarbon traps and passive NO_x 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 β -zeolites for hydrocarbon trap applications under “cold-start” conditions, 16th ICC, Beijing, China, Jul 2016
17. E.A. Kyriakidou, M.J. Lance, J.-S. Choi, T.J. Toops, Impact of ZrO₂-based Supports on the Durability and Low-Temperature Performance of Pd-based Oxidation Catalysts, 9th 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, 19th 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, 19th 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 β -Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, 14th 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, 14th 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 ZrO₂ Supports on the Durability and Low Temperature Performance of Pd-based Diesel Oxidation Catalysts, 18th 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 β -Zeolites for Hydrocarbon Trap Applications under “Cold-Start” Conditions, 18th CLEERS Workshop, Dearborn, MI, Apr 2015
9. E.A. Kyriakidou, K.V. Khivantsev, T.M. Gostanian⁺, O.S. Alexeev, M.D. Amiridis, Preparation and Quantitative Analysis of Dendrimer-Stabilized Au Nanoparticles, 23rd 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⁺, T.M. Gostanian⁺, 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⁺, 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⁺, 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, 22nd 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, 7th 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, 9th SECS Annual Symposium, Ashville, NC, Sept 2010

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_x Adsorbers for Vehicle Cold Start Applications (*Current position*: Postdoctoral Appointee (mentor: Dr. Yuepeng Zhang), Argonne National Laboratory, Lemont, IL).

Post-doctoral associates (1)

1. Mr. Prateek Khatri, Ph.D. (Chemical Engineering, IIT Delhi (India), Ph.D. 2022), Jul 2022 – Feb 2023, Responsible for investigating catalysts active at low temperatures towards the CH₄ oxidation reaction (*Current position*: Assistant Professor, Chemical Engineering Department at National Institute of Technology, Rourkela, India).

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 CH₄ Oxidation (*Current position*: Process Integration Engineer, Intel Corporation, Phoenix, AZ).

Dissertations/Theses in Progress (2)

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 (8)

1. Mr. T. Mon and Mr. Jacob Concolino, Recipients of 2 Graduate Student Association (UB) Travel Awards (\$300 and \$200, respectively), Buffalo, NY, May 2023
2. Mr. J. Chen, Recipient of the Dean's Graduate Achievement Award, School of Engineering and Applied Sciences (UB), Buffalo, NY, May 2022
3. Mr. J. Chen, Recipient of a CBE Outstanding Dissertation Award, Buffalo, NY, May 2022
4. Mr. T. Mon, Recipient of a Graduate Student Association (UB) Travel Award (\$251), Buffalo, NY, May 2022
5. Mr. J. Chen, Recipient of an Outstanding Presentation Certificate, CBE Ph.D. seminar, Buffalo, NY, Dec 2021
6. 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
7. Mr. J. Lee, Mr. J. Chen, and Ms. C.-H. Liu, Recipients of 3 Graduate Student Association (UB) Travel Awards (3x\$550), Buffalo, NY, Aug – Oct 2019
8. Mr. J. Lee, Recipient of an Outstanding Presentation Certificate, CBE Ph.D. seminar, Buffalo, NY, Dec 2018

Prior to UB (5):

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

1. Ms. Sophie Sharma, May 2024 – present (*Current position:* Sophomore, CBE UB).

Research group alumni (11)

1. Ms. Grace Morgan, Sept 2023 – May 2024.
2. Mr. Scott Coia, Feb 2022 – May 2022 and Aug 2022 – May 2023 (*Current position:* Ph.D. candidate, Chemical & Biomolecular Engineering Department, University of Delaware, Newark, DE).

3. Ms. Ruth Bello, Jul 2021 – May 2023 (LSAMP program: Jun 2022 – Aug 2022) (*Current position:* Ph.D. candidate, Chemical Engineering and Materials Science Department, University of Minnesota, Minneapolis, MN).
4. Ms. Alexis Sill-Ruiz, Mar 2022 – May 2022 (Louis Armstrong Alliance for Minority Participation (LSAMP) program) and Jan 2023 – Feb 2023 (*Current position:* junior, CBE UB)
5. 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).
6. Mr. Neil Shah, Mar 2022 – May 2022 (*Current position:* sophomore, CBE UB).
7. Ms. Angela Aguirre, May 2021 – Aug 2021 (LSAMP) (*Current position:* Ph.D. candidate, Davidson School of Chemical Engineering, Purdue University, West Lafayette, IN).
8. Mr. Timothy Buchanan, May 2019 – May 2020 (*Current position:* Application Engineer, Carrier HVAC, Syracuse, NY).
9. 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).
10. Mr. Lakshay Chopra, Feb 2017 – Apr 2018 (*Current position:* Senior Data Engineer, Log9 Materials, Bengaluru, India).
11. 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:* Tech Transfer Engineer III, Andover, MA).
3. Ms. Cristina Curtis, Jan 2010 – Apr 2010 (*Current position:* Senior Automation Engineer, Skellig, Baytown, TX).

TEACHING

Formal courses taught at UB

- CE 509, Transport Phenomena I (graduate core course; 3 credit hours)
- Fall 2023; enrollment: 5 students
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 2023; enrollment: 13 students – 11 graduate and 2 undergraduate
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

- Fundamentals of Catalysis and Surface Science, AIChE Annual Conference, San Diego, CA, Oct 2024
- Catalyst Design, Synthesis, and Characterization II: Control of Catalytic Site Speciation and Distribution, AIChE Annual Conference, Orlando, FL, Nov 2023
- Environmental and Automotive Catalysis I: Emerging Catalytic Technologies, AIChE Annual Conference, Orlando, FL, Nov 2023
- Catalytic Upcycling of Oxygenated Polymers, 28th NACS, Providence, RI, June 2023
- 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
- NO_x Abatement and Three-Way Catalysis I, 27th NACS, New York, NY, May 2022
- Creative C₁ Chemistry, 27th NACS, New York, NY, May 2022
- Methane to C_n, 27th NACS, New York, NY, May 2022
- Environmental and Automotive Catalysis I: Passive NO_x Adsorber and NO_x Reduction, AIChE Annual Conference, Boston, MA, Nov 2021
- Emissions Control I: Passive NO_x Adsorbers and Hydrocarbon Traps, AIChE Annual Conference, *virtual due to COVID-19 pandemic*, Nov 2020
- Emission Control Sessions 3A and 4A, 11th ICEC, *virtual due to COVID-19 pandemic*, Sept 2020
- Environmental and Automotive Catalysis I, AIChE Annual Conference, Orlando, FL, Nov 2019
- Environmental Catalysis Session, 26th 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), 254th 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

Panelist

60th anniversary symposium of the Journal of Catalysis, 28th NACS Meeting, Providence, RI, Jun 2023

Journal Issues Guest Edited

Catalysts, “Catalytic Reforming and Hydrogen Production: From the Past to the Future” with Georgios Bamos and Paraskevi Panagiotopoulou (2024)

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, 2023)

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, MJ, Mar 2017
- AIChE Annual Conference, CRE Division poster session, San Francisco, CA, Nov 2016
- 15th Annual Symposium of the Southeastern Catalysis Society, Asheville, NC, Sept 2016
- 19th 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 – May 2023
- 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, 2023
- Volunteer, “Science is Elementary” (Kindergarten, 1st - 3rd 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 (9th-12th grade girls) through CBE Society of Women Engineers, Aug 2017