

FUAT E. CELIK

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EDUCATION

- 2004 – 2010 Ph.D. Chemical Engineering, University of California, Berkeley
Minor in Inorganic Chemistry
Dissertation Title: Novel Routes to Ethylene Glycol Synthesis via Acid-Catalyzed Carbonylation of Formaldehyde and Dimethoxymethane
Advisor: Prof. Alexis T. Bell
- 2002 – 2003 M. Eng. Chemical Engineering, Princeton University
Independent Project: Process Design of Dimethyl Ether, Acetic Acid and Electricity Polygeneration from Coal
Advisor: Dr. Eric D. Larson
- 1998 – 2002 B.S.E. Chemical Engineering, Princeton University, magna cum laude
Certificate in Environmental Studies
Thesis Title: Enzyme-Based Microreactors and Biosensors
Advisor: Prof. Jeffrey D. Carbeck

PROFESSIONAL EXPERIENCE

- 2019 – present Associate Professor, Chemical and Biochemical Engineering (CBE)
2019 – present Director, Graduate Program, Chemical and Biochemical Engineering
2015 – present Associate Member, Graduate Faculty in Chemistry and Chemical Biology (CCB)
2012 – 2019 Assistant Professor, Chemical and Biochemical Engineering
Rutgers, The State University of New Jersey
- 2010 – 2012 Postdoctoral Research Associate, Chemical and Biological Engineering
University of Wisconsin-Madison
Advisor: Prof. Manos Mavrikakis
- 2003 – 2004 Research Assistant, Princeton Environmental Institute - Energy Group
Princeton University
Advisors: Prof. Robert H. Socolow, Dr. Eric D. Larson

RESEARCH INTERESTS

My objective is to discover and design catalysts and catalytic processes that open new pathways for energy conversion to produce renewable and alternative liquid fuels and chemicals. I seek to understand how the nanoscale structure and chemical composition of a catalyst relate to the macroscopically observable activity and selectivity for desirable chemical reactions. I use a combination of experimental and theoretical techniques including operando spectroscopy, quantum mechanical modeling (Density Functional Theory), synthesis, characterization, kinetic measurements, and reactor modeling to develop our understanding of catalytic materials. In

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addition, I perform technoeconomic analysis to calculate efficiency and profitability of large-scale energy conversion processes based on catalytic and thermochemical technologies.

HONORS AND AWARDS

2022	Most Valuable Organizer, North American Catalysis Society Meeting
2022, 2015, 2013	Rutgers School of Engineering Teaching Excellence Award
2022	Rutgers Engineering Governing Council Student's Professor of the Year Award
2015, 2014	AIChE Student Chapter Advisor's Honor Roll Award (Level II)
2014	A. Walter Tyson Assistant Professorship Award
2011	Full Member, Sigma Xi, The Scientific Research Honor Society
2009	Fellow, Summer Institute for Preparing Future Faculty, UC Berkeley
2007, 2008	Chevron-Berkeley Fellowship, UC Berkeley
2007	Richard J. Kokes Travel Award, North American Catalysis Society
2007	Outstanding Graduate Student Instructor Award, UC Berkeley
2006	Citation for Outstanding Teaching, UC Berkeley
2002	Princeton Option Master of Engineering Scholarship, Princeton University
2002	Richard K. Toner Thermodynamics Prize, Princeton University
2002	Associate Member, Sigma Xi, The Scientific Research Honor Society

PUBLICATIONS

Peer-reviewed Publications

1. M.M. Mozael, Z. Dong, A.M. Pennington, **F.E. Celik**, B.H. Kear, S.D. Tse, Synthesis of Amorphous Titania Nanostructures by Pulsed-Laser Decomposition of Liquid Metal-Organic Precursor with Post-Annealing Transformation into Crystalline-Layered TiO₂ Nanorods and Nanospheres, *Powder Technol* **2024**, *431*, 119058. <https://doi.org/10.1016/j.powtec.2023.119058>
2. T.D. Nguyen, W. Zheng, **F.E. Celik***, G. Tsilomelekis*, CO₂-Assisted Ethane Oxidative Dehydrogenation over MoO_x Catalysts Supported on Reducible CeO₂-TiO₂. *Catalysis Science & Technology* **2021**, *11*, 5791-5801. <https://doi.org/10.1039/D1CY00362C>
3. A.M. Pennington,^a H. Halim,^a J. Shi, B.H. Kear, **F.E. Celik**, S.D. Tse, Low-Pressure Flame Synthesis of Carbon-Stabilized TiO₂-II (Srilankite) Nanoparticles. *Journal of Aerosol Science* **2021**, *156*, 105775. <https://doi.org/10.1016/j.jaerosci.2021.105775> ^a co-first authors
4. B. Sheludko, C.F. Castro, C.A. Khalap, T.J. Emge, A.S. Goldman*, **F.E. Celik***, Regioselective Gas-Phase n-Butane Transfer Dehydrogenation via Silica-Supported Pincer-Iridium Complexes. *ChemCatChem* **2021**, *13*, 407-415. <https://doi.org/10.1002/cctc.202001399>
5. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik***, Poison or Promoter? Investigating the Dual-Role of Carbon Monoxide in Pincer-Iridium-Based Alkane Dehydrogenation Systems via Operando Diffuse Reflectance Infrared Fourier Transform Spectroscopy. *ACS Catalysis* **2020**, *10*, 12425-12436. <https://doi.org/10.1021/acscatal.0c02406> Correction *ACS Catalysis* **2021**, *11*, 4294. <https://doi.org/10.1021/acscatal.1c01041>
6. J. Nam, **F.E. Celik***, Effect of Tin in the Bulk of Platinum-Tin Alloys for Ethane Dehydrogenation. *Topics in Catalysis* **2020**, *63*, 700-713. <https://doi.org/10.1007/s11244-020-01297-w>

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7. S. Atta, **F.E. Celik**, L. Fabris, Enhancing Hot Electron Generation and Injection in the NIR via Rational Design and Controlled Synthesis of TiO₂-Gold Nanostructures. *Faraday Discussions* **2019**, *214*, 341-351. <https://doi.org/10.1039/c8fd00152a>
8. B. Sheludko, M.T. Cunningham, A.S. Goldman, **F.E. Celik***, Continuous Flow Alkane Dehydrogenation by Supported Pincer-Ligated Iridium Catalysts at Elevated Temperatures. *ACS Catalysis* **2018**, *8*, 7828-7841. <https://doi.org/10.1021/acscatal.8b01497>
9. S. Atta, A.M. Pennington, **F.E. Celik***, L. Fabris*, TiO₂ on Gold Nanostars Enhances Photocatalytic Water Reduction in the Near-Infrared Regime. *Chem* **2018**, *4*, 2140-2153. <https://doi.org/10.1016/j.chempr.2018.06.004>
10. A.M. Pennington, R.A. Yang, D.T. Munoz, **F.E. Celik***, Metal-Free Hydrogen Evolution over Defect-Rich Anatase Titanium Dioxide. *International Journal of Hydrogen Energy* **2018**, *43*, 15176-15190. <https://doi.org/10.1016/j.ijhydene.2018.06.096>
11. A. Hook, T.P. Nuber, **F.E. Celik***, Density Functional Theory Investigation of the Role of Cocatalytic Water in Methane Steam Reforming over Anatase TiO₂ (101). *Industrial & Engineering Chemistry Research* **2018**, *57*, 8131-8143. <https://doi.org/10.1021/acs.iecr.8b00944>
12. A. Hook, **F.E. Celik***, Density Functional Theory Investigation of the Role of Cocatalytic Water in Water Gas Shift Reaction over Anatase TiO₂ (101). *Industrial & Engineering Chemistry Research* **2018**, *57*, 6830-6841. Invited paper <https://doi.org/10.1021/acs.iecr.8b00532>
13. A.M. Pennington, A.I. Okonmah, D.T. Munoz, G. Tsilomelekis, **F.E. Celik***, Changes in Polymorph Composition in P25-TiO₂ during Pretreatment Analyzed by Differential Diffuse Reflectance Spectral Analysis. *Journal of Physical Chemistry C* **2018**, *122*, 5093-5104. <https://doi.org/10.1021/acs.jpcc.7b10449>
14. **F.E. Celik**, B. Peters, M.-O. Coppens, A. McCormick, R.F. Hicks, J. Ekerdt, A Career in Catalysis: Alexis T. Bell. *ACS Catalysis* **2017**, *7*, 8628-8640. <https://doi.org/10.1021/acscatal.7b03218>
15. A. Hook, **F.E. Celik***, Predicting Selectivity for Ethane Dehydrogenation and Coke Formation Pathways over model Pt-M Surface Alloys with ab initio and Scaling Methods. *Journal of Physical Chemistry C* **2017**, *121*, 17882-17892. <https://doi.org/10.1021/acs.jpcc.7b03789>
16. A. Hook, J.D. Massa, **F.E. Celik***, Effect of Tin Coverage on Selectivity for Ethane Dehydrogenation over Platinum-Tin Alloys. *Journal of Physical Chemistry C* **2016**, *120*, 27307-27318. <https://doi.org/10.1021/acs.jpcc.6b08407>
17. L.V. Dinh, B. Li, A. Kumar, W. Schinski, K.D. Field, A. Kuperman, **F.E. Celik***, A.S. Goldman*, Alkyl-Aryl Coupling Catalyzed by Tandem Systems of Pincer-Ligated Iridium Complexes and Zeolites. *ACS Catalysis* **2016**, *6*, 2836-2841. <https://doi.org/10.1021/acscatal.6b00149>
18. A. Kulkarni, A. Kumar, A.S. Goldman, **F.E. Celik***, Selectivity for Dimers in Pentene Pligomerization over Acid Zeolites. *Catalysis Communications* **2016**, *75*, 98-102. <https://doi.org/10.1016/j.catcom.2015.11.012>
19. **F.E. Celik**, M. Mavrikakis, Stability of Surface and Subsurface Hydrogen on and in Au/Ni Near-Surface Alloys. *Surface Science* **2015**, *640*, 190-197. <https://doi.org/10.1016/j.susc.2015.01.001>

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20. A.N. Mlinar, P.M. Zimmerman, **F.E. Celik**, M. Head-Gordon, A.T. Bell, Effects of Brønsted-Acid Site Proximity on the Oligomerization of Propene in H-MFI. *Journal of Catalysis* **2012**, 288, 65-73. <https://doi.org/10.1016/j.jcat.2012.01.002>
21. T. Kim, **F.E. Celik**, D.G. Hanna, S. Shylesh, S. Werner, A.T. Bell, Gas-Phase Hydroformylation of Propene over Silica-Supported PPh₃-Modified Rhodium Catalysts. *Topics in Catalysis* **2011**, 54, 299-307. <https://doi.org/10.1007/s11244-011-9664-3>
22. **F.E. Celik**, T. Kim, A.N. Mlinar, A.T. Bell, An Investigation of the Mechanism and Kinetics of Dimethoxymethane Carbonylation over FAU and MFI Zeolites. *Journal of Catalysis* **2010**, 274, 150-162. <https://doi.org/10.1016/j.jcat.2010.06.015>
23. **F.E. Celik**, T. Kim, A.T. Bell, Effect of Zeolite Framework and Si/Al Ratio on Dimethoxymethane Carbonylation. *Journal of Catalysis* **2010**, 270, 185-195. <https://doi.org/10.1016/j.jcat.2009.12.021>
24. **F.E. Celik**, T. Kim, A.T. Bell, Vapor-Phase Carbonylation of Dimethoxymethane over H-Faujasite. *Angewandte Chemie International Edition* **2009**, 48, 4813-4815. <https://doi.org/10.1002/anie.200900464>
25. E.D. Larson, H. Jin, **F.E. Celik**, Large-Scale Gasification-Based Coproduction of Fuels and Electricity from Switchgrass. *Biofuels, Bioproducts & Biorefining-biofpr* **2009**, 3, 174-194. <https://doi.org/10.1002/bbb.137>
26. H. Jin, E.D. Larson, **F.E. Celik**, Commercially-Mature Gasification-Based Electric Power Generation from Switchgrass. *Biofuels, Bioproducts & Biorefining-biofpr* **2009**, 3, 142-173. <https://doi.org/10.1002/bbb.138>
27. **F.E. Celik**, H. Lawrence, A.T. Bell, Synthesis of Precursors to Ethylene Glycol from Formaldehyde and Methyl Formate Catalyzed by Heteropoly Acids. *Journal of Molecular Catalysis A: Chemical* **2008**, 288, 87-96. <https://doi.org/10.1016/j.molcata.2008.03.029>

Other Publications and Patents

1. L. Fabris, **F.E. Celik**, S. Atta, A.M. Pennington, Near Infrared Photocatalyst Based on TiO₂-Coated Gold Nanoparticles, **2023**, US Patent 11,712,681.
2. **F.E. Celik**, T. Kim, A.T. Bell, Process for the Production of Alkyl Alkoxyacetates, **2010**, US Patent 7,772,423.
3. E.D. Larson, H. Jin, **F.E. Celik**, *Gasification-Based Fuels and Electricity Production from Biomass, without and with Carbon Capture and Storage*, **2005**. Princeton Environmental Institute, Princeton University (web) 77 pages.
4. E.D. Larson, H. Jin, R.H. Williams, **F.E. Celik**, Gasification-Based Liquid Fuels and Electricity from Biomass with Carbon Capture and Storage. *Proceedings of the Fourth Annual Conference on Carbon Capture & Sequestration*, **2005**.
5. **F. Celik**, E.D. Larson, R.H. Williams, Transportation Fuel from Coal with Low CO₂ Emissions. *Proceedings of the 7th International Conference on Greenhouse Gas Control Technologies, Volume II*, **2005**, pp. 1053-1058.
6. N. Greene, **F.E. Celik**, B. Dale, M. Jackson, K. Jayawardhana, H. Jin, E.D. Larson, M. Laser, L. Lynd, D. MacKenzie, J. Mark, J. McBride, S. McLaughlin, D. Saccardi, *Growing Energy: How Biofuels Can Help End America's Oil Dependence*, Natural Resources Defense Council, **2004**, 86 pages.

PRESENTATIONS

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Invited Presentations

1. **F.E. Celik**, Bridging the Gap: Heterogeneous Catalysis by Homogeneous Catalysts, *Catalysis Club of Philadelphia Meeting*. March 2021.
2. **F.E. Celik**, Bridging the Gap: Heterogeneous Catalysis by Homogeneous Catalysts, *School for Engineering of Matter, Transport and Energy, Arizona State University*. Tempe, AZ, March 2021.
3. **F.E. Celik**, Heterogeneous Catalysis by Homogeneous Complexes: Silica-Supported Iridium-Pincer Complexes Catalyze Alkane Dehydrogenation at Elevated Temperatures, *257th American Chemical Society National Meeting*. Orlando, FL, April 2019.
4. **F.E. Celik**, A.M. Pennington, G. Tsilomelekis, Monitoring Catalyst Composition During Synthesis and Pretreatment with in Situ Spectroscopy, *256th American Chemical Society National Meeting*. Boston, MA, August 2018.
5. **F.E. Celik**, B. Sheludko, A.S. Goldman, Activity and Speciation of Supported Pincer-Ligated Iridium Catalysts in Continuous-Flow Gas Phase Alkane Dehydrogenation, *255th American Chemical Society National Meeting*. New Orleans, LA, March 2018.
6. **F.E. Celik**, B. Sheludko, A.M. Pennington, M.T. Cunningham, M.E. Gliege, A.S. Goldman, Immobilized Pincer-Ligated Iridium Complexes in Continuous Heterogeneous Alkane Transfer Dehydrogenation, *254th American Chemical Society National Meeting*. Washington, DC, August 2017. – selected as “Best Presentation” in session
7. **F.E. Celik** Increased Photocatalytic Activity of TiO₂ Nanoparticles with Defects for Sustainable Production of Hydrogen. *Department of Chemical, Biological, and Pharmaceutical Engineering, New Jersey Institute of Technology*. Newark, NJ, April 2017.
8. **F.E. Celik** Density Functional Theory Investigation of Hydrogenation and Dehydrogenation Reaction on Binary Metal Alloys: Effect of Surface Ensembles and Composition. *Department of Chemistry, Drew University*. Madison, NJ, December 2015.
9. **F.E. Celik** Density Functional Theory Investigation of Hydrogenation and Dehydrogenation on Binary Metal Alloys: Effect of Surface Ensembles and Composition. *Laboratory for Surface Modification, Rutgers University*. Piscataway, NJ, November 2015.
10. **F.E. Celik**, Alec Hook, Jacob D. Massa, Density Functional Theory Investigation of Ethene Dehydrogenation and Coke Formation on Binary Metal Alloys: Effect of Surface Ensembles and Composition. *2015 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2015.
11. **F.E. Celik**, Density Functional Theory Investigation of Hydrogenation and Dehydrogenation Reaction on Binary Metal Alloys: Effect of Surface Ensembles and Composition. *Catalysis Club of Philadelphia Meeting*. Wilmington, DE, March 2015.
12. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical and Fuel Products from Non-Petroleum Resources. *Center for Enabling New Technologies Through Catalysis*, December 2014.
13. **F.E. Celik**, Renewable and Alternative Fuels and Chemicals through Catalytic Transformations. *Engineering and Climate Change Panel for Earth Day, Rutgers University*. Piscataway, NJ, April 2014.
14. **F.E. Celik**, Kinetics and Mechanism of Vapor-Phase Carbonylation of Dimethoxymethane over Acid Zeolites. *Catalysis Society of Metropolitan New York – 2014 Annual Symposium*. Bethlehem, PA, March 2014.
15. **F.E. Celik**, M. Mavrikakis, Au/Ni Near Surface Alloys as Potential Direct H₂O₂ Synthesis Catalysts: A DFT Study. *International Symposium on Chemical Process Intensification and*

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- Green Technology, Beijing University of Chemical Technology International Forum.* Beijing, China, September 2013.
16. **F.E. Celik**, M. Mavrikakis, Adsorbate-Induced Surface Rearrangements in Au/Ni Near-Surface Alloys: A Density Functional Theory Investigation. *245th American Chemical Society National Meeting.* New Orleans, LA, April 2013.
 17. **F.E. Celik**, Adsorbate-Induced Surface Rearrangements in Au/Ni Near-Surface Alloys: A Density Functional Theory Investigation. *Department of Materials Science and Engineering, Rutgers University.* Piscataway, NJ, April 2013.
 18. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical Products from Non-Petroleum Resources. *Department of Chemical Engineering, Rochester University.* Rochester, NY, February 2012.
 19. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical Products from Non-Petroleum Resources. *Department of Chemical and Biochemical Engineering, Rutgers University.* Piscataway, NJ, February 2012.
 20. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical Products from Non-Petroleum Resources. *Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute.* Troy, NY, February 2012.
 21. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical Products from Non-Petroleum Resources. *School of Chemical Engineering, Purdue University.* West Lafayette, IN, February 2012.

Contributed Presentations

1. **F.E. Celik**, A.S. Goldman, B. Sheludko, High-Temperature Heterogeneous Organometallic Catalysts Stabilized By Carbon Monoxide, *17th International Congress on Catalysis*, San Diego, CA, June 2020. (oral presentation, meeting cancelled)
2. **F.E. Celik**, A.S. Goldman, B. Sheludko, Heterogeneous Organometallic Catalysis by Pincer-Ligated Iridium Complexes, *American Chemical Society Spring 2020 National Meeting.* Philadelphia, PA, March 2020. (oral presentation, meeting cancelled)
3. **F.E. Celik**, B. Sheludko, C.F. Castro, A.S. Goldman, The Development of a Continuous Alkane Dehydrogenation System with Thermally Stable Heterogeneous Organometallic Catalysts, *26th North American Catalysis Society Meeting.* Chicago, IL, June 2019. (oral presentation)
4. **F.E. Celik**, Photocatalytic Methane Steam Reforming to Valorize Point-Source Methane, *AIChE Sustainable Packaging Symposium '18.* New Brunswick, NJ, December 2018. (oral presentation)
5. **F.E. Celik**, A.M. Pennington, G. Tsilomelekis, Monitoring Catalyst Composition During Synthesis and Pretreatment with in Situ Spectroscopy, *Catalysis – Gordon Research Conference.* New London, NH, June 2018. (poster presentation)
6. A.M. Pennington, **F.E. Celik**, Increased Photocatalytic Activity of TiO₂ Nanoparticles with Defects for Sustainable Hydrogen Production, *2017 American Institute of Chemical Engineers Annual Meeting*, Minneapolis, MN, November 2017. (oral presentation)
7. A.M. Pennington, R.A. Yang, **F.E. Celik**, Increased Photocatalytic Activity of TiO₂ Nanoparticles with Defects for Sustainable Hydrogen Production, *Photochemistry – Gordon Research Conference.* Lewiston, ME, July 2017. (poster presentation)

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8. **F.E. Celik**, A.M. Pennington, Increased Photocatalytic Activity of TiO₂ Nanoparticles with Defects for Sustainable Production of Hydrogen, *25th North American Catalysis Society Meeting*. Denver, CO, June 2017. (oral presentation)
9. A. Hook, **F.E. Celik**, First Principles Light Alkane Dehydrogenation on Pt: Main Group Alloys and the Effect of Hydrogen Spectators, *2016 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2016. (oral presentation)
10. **F.E. Celik**, A.M. Pennington, K.A. Dagnall, R.A. Yang, High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Activity, *Catalysis – Gordon Research Conference*. New London, NH, June 2016. (poster presentation)
11. A. Hook, J.D. Massa, **F.E. Celik**, Light Alkane Dehydrogenation over Pt and PtSn Alloys: A Density Functional Theory Investigation, *24th North American Catalysis Society Meeting*. Pittsburgh, PA, June 2015. (poster presentation)
12. A. Hook, J.D. Massa, **F.E. Celik**, Computational Study of the Dehydrogenation of Light Alkanes over Pt and PtSn Alloys, *2014 American Institute of Chemical Engineers Annual Meeting*. Atlanta, GA, November 2014. (oral presentation)
13. **F.E. Celik**, M. Mavrikakis, Adsorbate-Induced Surface Rearrangements in Au/Ni Near-Surface Alloys: A Density Functional Theory Investigation. *2013 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2013. (oral presentation)
14. **F.E. Celik**, M. Mavrikakis, Au/Ni Near Surface Alloys as Potential Direct H₂O₂ Synthesis Catalysts: A DFT Study. *2011 American Institute of Chemical Engineers Annual Meeting*. Minneapolis, MN, October 2011. (oral presentation)
15. **F.E. Celik**, Catalytic Synthesis Gas Conversion to Produce Chemical Products From Non-Petroleum Resources. *2011 American Institute of Chemical Engineers Annual Meeting*. Minneapolis, MN, October 2011. (poster presentation)
16. **F.E. Celik**, T. Kim, A.T. Bell, Effect of Zeolite Structure and Composition on Vapor-Phase Carbonylation of Dimethoxymethane. *9th Novel Gas Conversion Symposium*. Lyon, France, May 2010. (oral presentation)
17. **F.E. Celik**, T. Kim, A.T. Bell, Kinetics and Mechanism of Vapor-Phase Dimethoxymethane Carbonylation over Acid Zeolites. *239th American Chemical Society National Meeting*. San Francisco, CA, March 2010. (oral presentation)
18. **F.E. Celik**, T. Kim, A.T. Bell, Effect of Zeolite Structure and Composition on Vapor-Phase Carbonylation of Dimethoxymethane. *2009 American Institute of Chemical Engineers Annual Meeting*. Nashville, TN, November 2009. (oral presentation)
19. **F.E. Celik**, T. Kim, A.T. Bell, Novel Vapor-Phase Carbonylation of Dimethoxymethane over Acid Zeolites. *21st North American Catalysis Society Meeting*. San Francisco, CA, June 2009. (oral presentation)
20. **F.E. Celik**, T. Kim, A.T. Bell, Novel Vapor-Phase Carbonylation of Dimethoxymethane over Acid Zeolites. *237th American Chemical Society National Meeting*. Salt Lake City, UT, March 2009. (oral presentation)
21. **F.E. Celik**, A.T. Bell, Ethylene Glycol Precursor Synthesis via Formaldehyde Carbonylation over Solid Acids. *2007 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2007. (oral presentation)
22. **F.E. Celik**, H. Lawrence, A.T. Bell, Synthesis of Precursors to Ethylene Glycol from Formaldehyde and Methyl Formate. *20th North American Catalysis Society Meeting*. Houston, TX, June 2007. (oral presentation)

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23. **F.E. Celik**, H. Lawrence, A.T. Bell, Synthesis of Precursors to Ethylene Glycol from Formaldehyde and Methyl Formate. *8th Natural Gas Conversion Symposium*. Natal, Brazil, May 2007. (poster presentation)

Other Presentations (presenting author is underlined)

1. J. Nam, C. Ramasamy, D.E. Raser, G.L. Barbosa Couto, L. Thies, D. Hibbitts, **F.E. Celik**, Efficient Prediction of Enthalpy of Linear Hydrocarbon Adsorbates on Pt(111) Using Unsupervised and Supervised Machine Learning, *28th North American Catalysis Society Meeting*. Providence, RI, June 2023 (oral presentation)
2. H. Ejaz, **F.E. Celik**, Oxygen Coverage Effect on Phenolic Hydrodeoxygenation over Ru(0001) Surface, *28th North American Catalysis Society Meeting*. Providence, RI, June 2023 (oral presentation)
3. J. Nam, C. Ramasamy, D.E. Raser, G.L. Barbosa Couto, **F.E. Celik**, Predicting Thermochemical Properties of Hydrocarbon Adsorbates on Metal Surfaces Using Machine Learning, *2022 American Institute of Chemical Engineers Annual Meeting*. Phoenix, AZ, November 2022 (oral presentation)
4. J. Nam, C. Ramasamy, D.E. Raser, G.L. Barbosa Couto, **F.E. Celik**, Estimation of Thermochemical Properties Using Group Additivity for Species Involved in Coke Formation on Pt(111) during Ethane Dehydrogenation, *27th North American Catalysis Society Meeting*. New York, NY, May 2022. (oral presentation)
5. T.D. Nguyen, **F.E. Celik**, G. Tsilomelekis, CO₂ Assisted Ethane Oxidative Dehydrogenation over MoO_x Catalysts Supported on Reducible CeO₂-TiO₂, *27th North American Catalysis Society Meeting*. New York, NY, May 2022. (oral presentation)
6. H. Ejaz, **F.E. Celik**, Deoxygenation Mechanism of Phenol over Ru(0001) Surface, *27th North American Catalysis Society Meeting*. New York, NY, May 2022. (oral presentation)
7. T.D. Nguyen, **F.E. Celik**, G. Tsilomelekis, Investigating the Redox Behavior of MoO_x Catalysts Supported on CeO₂-TiO₂ Via in-Situ Raman and FTIR Spectrokinetics, *2021 American Institute of Chemical Engineers Annual Meeting*. Boston, MA, November 2021. (oral presentation)
8. J. Nam, **F.E. Celik**, Investigation of Carbon Chain Growth Mechanism at the Early Stage of Coke Formation During Ethane Dehydrogenation on Pt(111), *American Chemical Society Spring 2021 National Meeting*, April 2021. (oral presentation)
9. J. Nam, **F.E. Celik**, Investigation of Carbon Chain Growth Mechanism at the Early Stage of Coke Formation During Ethane Dehydrogenation on Pt(111), *Catalysis Society of Metropolitan New York – 2021 Annual Symposium*. March 2021 (poster presentation)
10. H. Ejaz, **F.E. Celik**, Deoxygenation Mechanism of Phenol over Ru(0001) Surface, *Catalysis Society of Metropolitan New York – 2021 Annual Symposium*. March 2021 (poster presentation) – Honorable Mention
11. J. Nam, **F.E. Celik**, Investigation of Coke Formation Mechanism on Platinum Surface during Ethane Dehydrogenation, *2020 American Institute of Chemical Engineers Annual Meeting*, San Francisco, CA, November 2020. (oral presentation)
12. T.D. Nguyen, **F.E. Celik**, G. Tsilomelekis, CO₂ Assisted Oxidative Dehydrogenation of Ethane over Supported Metal Oxide Catalysts, *2020 American Institute of Chemical Engineers Annual Meeting*, San Francisco, CA, November 2020. (oral presentation)

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13. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Alkane upgrading effected by silica-supported pincer-iridium catalysts: Evidence of a shared active site with solution-phase species, *American Chemical Society Fall 2020 National Meeting*. San Francisco, CA, August 2020. (oral presentation)
14. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Supported Pincer-Iridium Species as Catalysts for C-H Activation Reactions: Design, Synthesis, Kinetics and Characterization, *Catalysis Club of Philadelphia Meeting*. Wilmington, DE, August 2020. (invited presentation)
15. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Organometallic and Inorganic Heterogeneous, Iridium-Based Catalysts for the Regioselective Dehydrogenation of Light Alkanes, *17th International Congress on Catalysis*, San Diego, CA, June 2020. (poster presentation, meeting cancelled)
16. J. Nam, **F.E. Celik**, Effect of Tin in the Bulk of Platinum-Tin Alloys for Ethane Dehydrogenation, *17th International Congress on Catalysis*, San Diego, CA, June 2020. (poster presentation, meeting cancelled)
17. T.D. Nguyen, **F.E. Celik**, G. Tsilomelekis, CO₂ Assisted Oxidative Dehydrogenation of Ethane over Supported Metal Oxide Catalysts, *17th International Congress on Catalysis*, San Diego, CA, June 2020. (poster presentation, meeting cancelled)
18. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Alkane Upgrading Effected by Supported Pincer-Iridium Catalysts via Hydrogen-Transfer and Hydrogen-“Borrowing” Tandem Reactions, *American Chemical Society Spring 2020 National Meeting*. Philadelphia, PA, March 2020. (oral presentation, meeting cancelled)
19. J. Nam, **F.E. Celik**, Effect of Tin in the Bulk of Platinum-Tin Alloys for Ethane Dehydrogenation, *American Chemical Society Spring 2020 National Meeting*. Philadelphia, PA, March 2020. (oral presentation, meeting cancelled)
20. T.D. Nguyen, **F.E. Celik**, G. Tsilomelekis, CO₂ Assisted Oxidative Dehydrogenation of Ethane over Supported Metal Oxide Catalysts, *American Chemical Society Spring 2020 National Meeting*. Philadelphia, PA, March 2020. (oral presentation, meeting cancelled)
21. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Regioselective Alkane Transfer Dehydrogenation Effected by Silica-Supported Pincer-Iridium Catalysts in a Continuous-Flow System, *Catalysis Society of Metropolitan New York – 2020 Annual Symposium*. Newark, NJ, March 2020. (poster presentation, meeting cancelled)
22. J. Nam, **F.E. Celik**, Effect of Tin in the Bulk of Platinum-Tin Alloys for Ethane Dehydrogenation, *Catalysis Society of Metropolitan New York – 2020 Annual Symposium*. Newark, NJ, March 2020. (poster presentation, meeting cancelled)
23. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Alkane Dehydrogenation Effected by Iridium-Based Catalysts: Modulation of Selectivity in Heterogeneous Species, *2019 Joint Meeting of The Catalysis Society of Metropolitan New York and The Catalysis Club of Philadelphia*. Bethlehem, PA, November, 2019. (poster presentation) – 1st place
24. J. Nam, **F.E. Celik**, Effect of Tin in the Bulk of Platinum-Tin Alloys for Ethane Dehydrogenation, *2019 Joint Meeting of The Catalysis Society of Metropolitan New York and The Catalysis Club of Philadelphia*. Bethlehem, PA, November 2019. (poster presentation)
25. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, The Effect of Small Molecules on Supported Pincer-Ligated Iridium Complex Alkane Dehydrogenation Activity and

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- Decomposition, *26th North American Catalysis Society Meeting*. Chicago, IL, June 2019. (oral presentation)
26. J. Nam, **F.E. Celik**, Effect of Tin Depletion in Platinum-Tin Bulk Alloys for Ethane Dehydrogenation, *26th North American Catalysis Society Meeting*. Chicago, IL, June 2019. (poster presentation)
 27. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Design and Use of Supported Pincer-Iridium Complexes for Heterogeneous, Continuous-Flow Alkane Dehydrogenation and in situ Characterization of Surface Species, *Catalysis Club of Philadelphia Meeting*. Wilmington, DE, March 2019. (invited presentation)
 28. B. Sheludko, C.F. Castro, A.S. Goldman, **F.E. Celik**, Acceptorless and Transfer Alkane Dehydrogenation Effected by Heterogenized (PCP)Ir and (POCOP)Ir Complexes in a Continuous Gas-Flow System, *Catalysis Society of Metropolitan New York – 2019 Annual Symposium*. Princeton, NJ, March 2019. (poster presentation)
 29. J. Nam, **F.E. Celik**, Effect of Tin Depletion in Platinum-Tin Bulk Alloys for Ethane Dehydrogenation, *Catalysis Society of Metropolitan New York – 2019 Annual Symposium*. Princeton, NJ, March 2019. (poster presentation)
 30. T.D. Nguyen, C. Huang, G. Tsilomelekis, **F.E. Celik**, Quantitative Compositional Analysis of Mixed Semiconductors via Derivative UV-Visible Spectroscopy, *Catalysis Society of Metropolitan New York – 2019 Annual Symposium*. Princeton, NJ, March 2019. (poster presentation)
 31. S. Atta, **F.E. Celik**, L. Fabris, Enhancing Hot Electron Generation and Injection in the Near Infrared via Rational Design and Controlled Synthesis of TiO₂-Gold Nanostructures. *Hot-Electron Science and Microscopic Processes in Plasmonics and Catalysis Faraday Discussion*. London, UK, February 2019. (invited presentation)
 32. A.M. Pennington, S.D. Tse, **F.E. Celik**, Anatase Nanoparticles from Low Pressure Flame Synthesis for Enhanced Photocatalytic Activity, *2018 American Institute of Chemical Engineers Annual Meeting*, Pittsburgh, PA, October 2018. (oral presentation)
 33. L. Fabris, S. Kallontzi, S. Atta, K. Dardir, H. Wang, M. Bhamidipati, A.M. Pennington, **F.E. Celik**, L. Klein, Metal-Ceramic Nanostructures for Advanced Applications in Optics, Catalysis, and Medical Diagnostics. *12th International Conference on Ceramic Materials and Components for Energy and Environmental Applications*. Singapore, July 2018. (invited presentation)
 34. G. Tsilomelekis, M. Javanmard, **F.E. Celik**, Revolutionizing Catalysis by Utilizing In-Situ and Operando Spectroscopy, *Catalysis – Gordon Research Conference*. New London, NH, June 2018. (poster presentation)
 35. R.A. Yang, R.B. Barat, **F.E. Celik**, Investigation of Platinum Alloys for Light Alkane Dehydrogenation, *American Institute of Chemical Engineers 2018 Mid-Atlantic Regional Student Conference*. Princeton, NJ, April 2018. (poster presentation)
 36. D.T. Munoz, A.M. Pennington, **F.E. Celik**, Photocatalytic Methane Steam Reforming over Defect-Rich Anatase TiO₂ Nanoparticles, *American Institute of Chemical Engineers 2018 Mid-Atlantic Regional Student Conference*. Princeton, NJ, April 2018. (poster presentation)
 37. B. Sheludko, M.T. Cunningham, A.S. Goldman, **F.E. Celik**, Investigating the Kinetics of Supported, Pincer-Ligated Iridium Catalysts in a Continuous-Flow Gas Phase System for C₄ Upgrading, *255th American Chemical Society National Meeting*. New Orleans, LA, March 2018. (oral presentation)

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38. J. Landers, N. Zougheib, **F.E. Celik**, A.V. Neimark, A Combined Theoretical and Experimental Investigation on the Degradation of Organophosphorus Chemical Warfare Agents on ZnO_{1-x} , *255th American Chemical Society National Meeting*. New Orleans, LA, March 2018. (oral presentation)
39. A.M. Pennington, R.A. Yang, D.T. Munoz, **F.E. Celik**, Precious Metal-Free Photocatalytic Hydrogen Evolution over TiO_2 , *Catalysis Society of Metropolitan New York – 2018 Annual Symposium*, Bethlehem, PA, March 2018. (poster presentation)
40. B. Sheludko, M.T. Cunningham, A.S. Goldman, **F.E. Celik**, Ultra-Stable Supported (POCOP)-Iridium Catalysts in Alkane Dehydrogenation – Speciation and Kinetic Characterization, *Catalysis Society of Metropolitan New York – 2018 Annual Symposium*, Bethlehem, PA, March 2018. (poster presentation)
41. T. Tsoulos, S. Atta, K. Dardir, A.M. Pennington, **F.E. Celik**, L. Fabris, A New Take on Gold Nanostars—Synthesis, Characterization and Modeling, *2017 Fall Materials Research Society Meeting*, Boston, MA, November 2017. (oral presentation)
42. A. Hook, **F.E. Celik** Ab-initio Probing of the Role of Surface Water in Hydrogen Transfer Reaction over Anatase TiO_2 , *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2017. (poster presentation)
43. A.M. Pennington, R.A. Yang, D.T. Munoz, **F.E. Celik**, Sustainable Production of Hydrogen via Photocatalytic MSR over Stable Defect-Rich Anatase TiO_2 , *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2017. (poster presentation)
44. B. Sheludko, M.T. Cunningham, A.S. Goldman, **F.E. Celik**, Investigating the Kinetics of Supported, Pincer-Ligated Iridium Catalysts in a Continuous-Flow Gas Phase System, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2017. (poster presentation)
45. A.M. Pennington, G. Tsilomelekis, **F.E. Celik**, Derivative Peak Fitting of Differential Diffuse Reflectance for Compositional Analysis of Multiphase Semiconductor P25 TiO_2 , *2017 American Institute of Chemical Engineers Annual Meeting*, Minneapolis, MN, October 2017. (oral presentation)
46. R.A. Yang, R.B. Barat, **F.E. Celik**, Investigation of Platinum Alloys for Light Alkane Dehydrogenation, *2017 American Institute of Chemical Engineers Annual Meeting*, Minneapolis, MN, October 2017. (poster presentation)
47. A.M. Pennington, A. Hook, R.A. Yang, **F.E. Celik**, Photocatalytic Methane Steam Reforming over Defect-Rich TiO_2 , *254th American Chemical Society National Meeting*. Washington, DC, August 2017 (oral presentation)
48. A.M. Pennington, B. Sheludko, M.T. Cunningham, A.S. Goldman, **F.E. Celik**, Immobilized Pincer-Ligated Iridium Catalysts Characterized via in situ UV-Visible and Fourier Transform Infrared Spectroscopy, *254th American Chemical Society National Meeting*. Washington, DC, August 2017 (poster presentation)
49. B. Sheludko, M.T. Cunningham, M.E. Gliege, A.S. Goldman, **F.E. Celik**, Continuous-flow heterogeneous alkane transfer dehydrogenation catalyzed by immobilized pincer-ligated iridium complexes, *254th American Chemical Society National Meeting*. Washington, DC, August 2017 (poster presentation)
50. A.M. Pennington, A. Hook, S.D. Tse, **F.E. Celik**, Low Pressure Flame Synthesized Carbon Doped TiO_2 Nanoparticles, *25th North American Catalysis Society Meeting*. Denver, CO, June 2017. (poster presentation)

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51. R.A. Yang, A.M. Pennington, **F.E. Celik**, High Pressure High Temperature Annealed TiO₂ for Photocatalytic Biomass Reforming, *American Institute of Chemical Engineers 2017 Mid-Atlantic Regional Student Conference*. Glassboro, NJ, March 2017. (oral presentation)
52. A. Hook, **F.E. Celik** Ab-initio Methane Steam Reforming over TiO₂, *Catalysis Society of Metropolitan New York – 2017 Annual Symposium*, Clinton, NJ, March 2017. (poster presentation)
53. A.M. Pennington, A.I. Okonmah, D.T. Munoz, C.S. Radecki, G. Tsilomelekis, **F.E. Celik**, Compositional Analysis of Ground, Sieved, and Calcined Degussa P25 TiO₂ via Differential Diffuse Reflectance and Differential Kubelka Munk Spectral Analysis *Catalysis Society of Metropolitan New York – 2017 Annual Symposium*, Clinton, NJ, March 2017. (poster presentation)
54. B. Sheludko, A.M. Pennington, M.T. Cunningham, M.E. Gliege, A.S. Goldman, **F.E. Celik**, Continuous-Flow Heterogeneous Alkane Transfer Dehydrogenation Effected by Immobilized Pincer-Ligated Iridium Catalysts *Catalysis Society of Metropolitan New York – 2017 Annual Symposium*, Clinton, NJ, March 2017. (poster presentation)
55. R.A. Yang, A.M. Pennington, **F.E. Celik**, Low Pressure Flame Synthesized TiO₂ for Sustainable Fuel Generation *Catalysis Society of Metropolitan New York – 2017 Annual Symposium*, Clinton, NJ, March 2017. (poster presentation)
56. A.M. Pennington, K.A. Dagnall, R.A. Yang, **F.E. Celik**, Flame Synthesis and High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Activity, *2016 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2016. (oral presentation)
57. R.A. Yang, A.M. Pennington, **F.E. Celik**, High Pressure High Temperature Annealed TiO₂ for Photocatalytic Biomass Reforming, *2016 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2016. (poster presentation) – 2nd place
58. J. Shi, A.M. Pennington, **F.E. Celik**, S.D. Tse, Low Pressure Flame Synthesis of TiO₂ Polymorphs, *2016 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2016. (poster presentation)
59. J. Landers, N. Zougheib, **F.E. Celik**, A.V. Neimark, A Combined Theoretical and Experimental Investigation on the Degradation of Organophosphorus Chemical Warfare Agents on ZnO_{1-x}, *2016 American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA, November 2016. (oral presentation)
60. A. Hook, **F.E. Celik**, A First Principles Studies on the Effect of Ti³⁺ in TiO₂ Catalyzed Methane Steam Reforming, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2016. (poster presentation)
61. A.M. Pennington, K.A. Dagnall, R.A. Yang, **F.E. Celik**, Flame Synthesis and High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Activity, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2016. (poster presentation)
62. B. Sheludko, A.M. Pennington, M.T. Cunningham, M.E. Gliege, B. Li, L. Chao, A. Kumar, A.S. Goldman, **F.E. Celik**, Continuous-Flow Heterogeneous Alkane Transfer Dehydrogenation Effected by Immobilized Pincer-Ligated Iridium Catalysts, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2016. (poster presentation) – 3rd place
63. B. Li, T. Zhou, T.J. Emge, A. Kumar, **F.E. Celik**, K. Krogh-Jespersen, A.S. Goldman, Tail-to-tail dimerization of styrene via dehydrogenative coupling of styrene C-H bonds by a

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- pincer iridium complex, 252nd American Chemical Society National Meeting. Philadelphia, PA, August 2016. (oral presentation)
64. A.M. Pennington, K.A. Dagnall, R.A. Yang, U. Parikh, **F.E. Celik**, High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Activity, 252nd American Chemical Society National Meeting. Philadelphia, PA, August 2016. (oral presentation)
 65. B. Sheludko, B. Li, L. Chao, A. Kumar, A.S. Goldman, **F.E. Celik**, Flow-Through Heterogeneous Transfer Alkane Dehydrogenation Effected by Pincer-Ligated Iridium Catalysts, 252nd American Chemical Society National Meeting. Philadelphia, PA, August 2016. (poster presentation)
 66. A.M. Pennington, K.A. Dagnall, R.A. Yang, U. Parikh, A.I. Okonmah, **F.E. Celik**, Flame Synthesis and High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Conversion of Biogas, *Food Waste-to-Low Carbon Energy Conference*, New Brunswick, NJ, April 2016. (poster presentation)
 67. K.A. Dagnall, A.M. Pennington, **F.E. Celik**, Characterization and Photocatalytic Activity Analysis of Low Pressure Flame Synthesized TiO₂ Nanoparticles, *American Institute of Chemical Engineers 2016 Mid-Atlantic Regional Student Conference*. Newark, DE, April 2016. (oral and poster presentation) – 1st place poster
 68. N. Zougheib, J. Landers, A. Hook, A.V. Neimark, **F.E. Celik**, Theoretical investigation of the degradation pathway of phosphorus containing nerve agents on metal oxides, *American Institute of Chemical Engineers 2016 Mid-Atlantic Regional Student Conference*. Newark, DE, April 2016. (poster presentation)
 69. R.A. Yang, A.M. Pennington, **F.E. Celik**, Synthesis of Hydrogen Annealed TiO₂ for Photocatalytic Production of Sustainable Fuels, *American Institute of Chemical Engineers 2016 Mid-Atlantic Regional Student Conference*. Newark, DE, April 2016. (poster presentation)
 70. A. Hook, **F.E. Celik**, First Principles Light Alkane Dehydrogenation on Pt: Main Group Alloys and the Effect of Hydrogen spectators, *Catalysis Society of Metropolitan New York – 2016 Annual Symposium*, New Brunswick, NJ, March 2016. (poster presentation)
 71. A.M. Pennington, K.A. Dagnall, R.A. Yang, U. Parikh, A.I. Okonmah, **F.E. Celik**, Flame Synthesis and High Pressure High Temperature Annealing of Anatase TiO₂ for Increased Photocatalytic Activity, *Catalysis Society of Metropolitan New York – 2016 Annual Symposium*, New Brunswick, NJ, March 2016. (poster presentation) – 4th place
 72. A. Hook, **F.E. Celik**, First Principles Light Alkane Dehydrogenation on Pt and Pt Alloys, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2015. (poster presentation)
 73. B. Li, L.V. Dinh, A. Kumar, **F.E. Celik**, A.S. Goldman, Alkyl-Aryl Coupling Catalyzed by Tandem Systems of Pincer-Ligated Iridium Complexes and Zeolites, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2015. (poster presentation)
 74. A.M. Pennington, K.A. Dagnall, R.A. Yang, R.H. Lavroff, K.M. Dickson, **F.E. Celik**, Production of Hydrogen via Visible-Light Photocatalytic Methane Steam Reforming Over Modified Titanium Dioxide, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, November 2015. (poster presentation)

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75. A. Hook, J.D. Massa, **F.E. Celik**, First Principles Light Alkane Dehydrogenation over Pt and Pt Alloys, *2015 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2015. (oral presentation)
76. J.D. Massa, **F.E. Celik** A DFT Study of Methanol Reforming on C- and N-Doped TiO₂ (110) Rutile Surfaces *2015 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2015. (oral presentation) – selected as “Best Presentation”
77. B. Li, L.V. Dinh, A. Kumar, A.S. Goldman, **F.E. Celik**, Alkyl-Aryl Coupling Catalyzed by Tandem Systems of Pincer-Ligated Iridium Complexes and Zeolites, *2015 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2015. (oral presentation)
78. K.A. Dagnall, **F.E. Celik** Photocatalytic Methanol Reforming on TiO₂, *2015 American Institute of Chemical Engineers Annual Meeting*. Salt Lake City, UT, November 2015. (oral presentation)
79. A. Hook, J.D. Massa, **F.E. Celik**, First Principles Light Alkane Dehydrogenation over Pt and PtSn Alloys, *75th Physical Electronics Conference*, New Brunswick, NJ, June 2015. (poster presentation)
80. J.D. Massa, A. Hook, **F.E. Celik**, Light Alkane Dehydrogenation over Pt and PtSn Alloys, *American Institute of Chemical Engineers 2015 Mid-Atlantic Regional Student Conference*. College Park, MD, April 2015. (oral presentation)
81. K.A. Dagnall, A.M. Pennington, D.A. Dindi, Hook, **F.E. Celik**, Photocatalytic Biomass Reforming on TiO₂, *American Institute of Chemical Engineers 2015 Mid-Atlantic Regional Student Conference*. College Park, MD, April 2015. (poster presentation)
82. A. Kulkarni, A. Kumar, A.S. Goldman, **F.E. Celik**, Oligomerization of Pentenes by Acid Zeolites, *Catalysis Society of Metropolitan New York – 2015 Annual Symposium*. Newark, NJ, March 2015. (poster presentation)
83. A. Hook, J.D. Massa, **F.E. Celik**, Light Alkane Dehydrogenation over Pt and PtSn Alloys, *Catalysis Society of Metropolitan New York – 2015 Annual Symposium*. Newark, NJ, March 2015. (poster presentation)
84. L. Chao, **F.E. Celik**, Investigation of Propene and Pentene Dimerization by Acid Zeolites, *Catalysis Society of Metropolitan New York – 2015 Annual Symposium*. Newark, NJ, March 2015. (poster presentation)
85. B. Li, L.V. Dinh, A. Kumar, **F.E. Celik**, A.S. Goldman, Alkyl-Aryl Coupling Catalyzed by Tandem Systems of Pincer-Ligated Iridium Complexes and Zeolites, *Catalysis Society of Metropolitan New York – 2015 Annual Symposium*. Newark, NJ, March 2015. (poster presentation)
86. A.M. Pennington, K.A. Dagnall, D.A. Dindi, **F.E. Celik**, Band-Gap Modification in TiO₂ Photocatalysts, *Catalysis Society of Metropolitan New York – 2015 Annual Symposium*. Newark, NJ, March 2015. (poster presentation)
87. J.D. Massa, A. Hook, **F.E. Celik**, Light Alkane Dehydrogenation on Pt and PtSn Alloys, *2015 National Collegiate Research Conference*. Cambridge, MA, January 2015. (poster presentation)
88. A. Kulkarni, A. Kumar, A.S. Goldman, **F.E. Celik**, Oligomerization of Pentenes by Acid Zeolites, *18th Northeast Corridor Zeolite Association Annual Meeting*. Philadelphia, PA, December 2014. (poster presentation)

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89. L. Chao, **F.E. Celik**, Investigation of Propene and Pentene Dimerization by Zeolites, *18th Northeast Corridor Zeolite Association Annual Meeting*. Philadelphia, PA, December 2014. (poster presentation)
90. J.D. Massa, A. Hook, **F.E. Celik**, Ethane and Methane Dehydrogenation over Pt and PtSn Alloys, *2014 American Institute of Chemical Engineers Annual Meeting*. Atlanta, GA, November 2014. (poster presentation) – 2nd place
91. A. Kulkarni, A. Kumar, A.S. Goldman, **F.E. Celik**, Oligomerization of Pentenes by Acid Zeolites, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, October 2014. (poster presentation)
92. A. Hook, J.D. Massa, **F.E. Celik**, Dehydrogenation of Light Alkanes on Platinum and Tin/Platinum Surface Alloys, *Catalysis Club of Philadelphia Annual Student Poster Competition*, Wilmington, DE, October 2014. (poster presentation)
93. A. Kulkarni, A. Kumar, A.S. Goldman, **F.E. Celik**, Oligomerization of Pentenes by Acid Zeolites, *Catalysis Society of Metropolitan New York – 2014 Annual Symposium*. Bethlehem, PA, March 2014. (poster presentation)
94. T. Kim, **F.E. Celik**, A.T. Bell, Gas-phase Hydroformylation of Propene over Modified Heterogeneous Rhodium Catalysts. *239th American Chemical Society National Meeting*. San Francisco, CA, March 2010. (oral presentation)
95. **F.E. Celik**, A.T. Bell, Ethylene Glycol Precursor Synthesis via Formaldehyde Carbonylation over Solid Acids. *14th International Congress on Catalysis*. Seoul, Korea, July 2008. (poster presentation)
96. M. Laser, H. Jin, K. Jayawardhana, L.R. Lynd, E.D. Larson, **F. Celik**, B. Dale, Mature Technology Biorefinery Scenarios Emphasizing Fuels and Power. *2005 American Institute of Chemical Engineers Annual Meeting*. Cincinnati, OH, November 2005. (oral presentation)
97. M. Laser, H. Jin, K. Jayawardhana, **F. Celik**, E. Larson, B. Dale, L.R. Lynd, Tomorrow's Biorefineries. *International Symposia on Alcohol Fuels XV*, San Diego, CA, September 2005. (oral presentation)
98. L.R. Lynd, M. Laser, H. Jin, K. Jayawardhana, E.D. Larson, **F. Celik**, B.E. Dale, Envisioning Mature Biomass Refineries. *1st International Biorefinery Workshop*, Washington, DC, July 2005. (oral presentation)
99. E.D. Larson, H. Jin, R.H. Williams, **F.E. Celik**, Gasification-Based Liquid Fuels and Electricity from Biomass with Carbon Capture and Storage. *Fourth Annual Conference on Carbon Capture & Sequestration*. Alexandria, VA, May 2005. (oral presentation)
100. L.R. Lynd, M. Laser, H. Jin, K. Jayawardhana, E.D. Larson, **F. Celik**, B.E. Dale, Tomorrow's Biomass Refineries. *27th Symposium on Biotechnology for Fuels and Chemicals*, Denver, CO, May 2005. (oral presentation)
101. **F. Celik**, E.D. Larson, R.H. Williams, Transportation Fuel from Coal with Low CO₂ Emissions. *7th International Conference on Greenhouse Gas Control Technologies*. Vancouver, Canada, September 2004. (oral presentation)

RESEARCH GRANTS

1. **XSEDE**, Investigation of Coke Formation Mechanisms on Pt-Alloy Surfaces During Ethane Dehydrogenation, 2020-2021, 4,239,000 service units (\$1,867,665)
2. **NSF Chemical, Bioengineering, Environmental, and Transport Systems**, First-Principles

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- Design of Coke-Resistant Dehydrogenation Catalysts for Valorization of Light Hydrocarbon Feedstocks, 2017-2021, \$300,000 (sole PI).
3. **International Flavors and Fragrances Inc.**, Development of Heterogeneous Pincer Based Catalyst for Dehydrogenation of Fragrance Ingredients and Backbones, 2018-2019 \$40,000, (coPI 50%, PI Alan Goldman).
 4. **Center for Enabling New Technologies Through Catalysis (NSF Center for Chemical Innovation)**, Heterogeneous Tandem Catalytic Systems for Hydrocarbon Conversions Based on Pincer Iridium Catalyzed Alkane Dehydrogenation and Dehydrogenative Coupling, 2016 – 2018, \$233,897 (PI).
 5. **Center for Enabling New Technologies Through Catalysis (NSF Center for Chemical Innovation)**, Heterogeneous Tandem Catalytic Systems for Alkane Conversions, 2015 – 2016, \$159,911, (coPI 50%, PI Alan Goldman).
 6. **NSF Sustainable Fuels Solutions IGERT**, Computational Design of Novel Catalyst Materials for Efficient Conversion of Biomass and Syngas to Renewable Fuels and Chemicals, 2013 – 2017, \$201,800 (sole PI).
 7. **Rutgers Core Facility Utilization Grant**, Heterogeneous Molecular Catalysis with Supported Organometallic Iridium Complexes, 2021 – 2022, \$5,000 (sole PI).
 8. **Rutgers Energy Institute**, Heterogeneous Molecular Catalysis with Supported Organometallic Iridium Complexes, 2019 – 2020, \$10,000 (sole PI).
 9. **Rutgers Energy Institute**, Hydrogen Generation from Biogas Reforming via Visible Light Photocatalysis, 2017, \$13,500 (sole PI).
 10. **IAMDN Small Instrumentation Grant**, Meeting the Demand for High-Resolution In Situ FTIR Spectroscopy: Control of Atmospheric Gases with a Nitrogen Generator, 2016, \$3,000 (sole PI).
 11. **Sigma Xi Grants-in Aid of Research Awards**, Visible Light Photocatalytic Reforming of Methanol over Metal-Modified Titanium Dioxide Supports, 2015, \$950 (sole PI).
 12. **Rutgers Research Council Grant**, FTIR investigation of extra-framework Al in dealuminated zeolites, 2014 – 2015, \$3,000 (sole PI).

TEACHING

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|-------------|--|
| 2014 – 2023 | Chemical Engineering Design II, CBE 428 |
| 2016 – 2019 | Chemical Engineering Design I, CBE 427 |
| 2015 | Byrne First-Year Seminar: Energy is Conserved, the Laws of Thermodynamics and the Environment, SAS 101 |
| 2012 – 2014 | Chemical Engineering Kinetics, CBE 441 |

Contributed Lectures

- | | |
|-------------|---|
| 2015 – 2022 | Professional Skills Development, CBE 298 |
| 2014 – 2017 | Honors Introduction to Engineering I, SOE 191 |
| 2017 | Rutgers-South China University of Technology Summer Program in Chemical Engineering and Chemistry |
| 2016 – 2017 | Rutgers-South China University of Technology Summer Program: Introduction to 21 st Century Engineering |
| 2014, 2017 | Freshman Engineering Orientation Lectures, SOE 100 |

ADVISING

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Ph.D. Students

Haider Ejaz, Chemical Engineering (2019 – present)
Jinwoong Nam, Chemical Engineering (2018 – present)
Thu D. Nguyen, Chemical Engineering (coadvisor with George Tsilomelekis) (2018 – 2023)
Ph.D. received 2023
Boris Sheludko, Chemistry (2016 – 2020) Ph.D. received 2020
Bo Li, Chemistry (coadvisor with Alan Goldman) (2014 – 2019) Ph.D. received 2019
Ashley M. Pennington, Chemical Engineering (2015 – 2018) Ph.D. received 2018
Alec Hook, Chemical Engineering (2013 – 2018) Ph.D. received 2018

Master's Students

Kanyun Wang, Chemical Engineering (2022 – 2023)
Cristina F. Castro, Chemical Engineering (2021 – 2022)
Chaitanya A. Khalap, Chemical Engineering (2019 – 2021)
Neeraj M. Joshi, Chemical Engineering (2017)
Puru D. Dhavale, Chemical Engineering (2015)
Ashley M. Pennington, Chemical Engineering (2013 – 2015) M.S. thesis completed 2015
Deniz A. Dindi, Chemical Engineering (2013 – 2015)
Atish Kulkarni, M.S. Chemical Engineering (2013 – 2015) M.S. thesis completed 2015
Yiming Yin, Chemical Engineering (2013 – 2014)
Longfei Chao, Chemical Engineering (2013 – 2015)

Undergraduate Students

Vjosa Ukella, Chemical Engineering (2023 – present)
Gennelle Kyla D. Cruz, Biomedical Engineering (2022)
Gustavo L. Barbosa Couto, Chemical Engineering (2021 – 2022)
Daniel E. Raser, Chemical Engineering (2021 – 2022)
Charanyadevi Ramasamy, Chemical Engineering (2021 – 2022)
Andre Hsueh, Electrical and Computer Engineering (2020)
Julia M. Parzecki, Chemical Engineering (2020)
Cesar A. Rubio, Chemical Engineering (2019 – present)
Ariana Y. Belton, Chemical Engineering (2019)
Cristina F. Castro, Chemical Engineering (2018 – 2021)
Taniya P. Arora, Chemical Engineering (2017 – 2018)
Timothy P. Nuber, Mechanical Engineering (2017 – 2018)
Valerie M. Balance, Chemical Engineering (2017)
Stefanie M. Traeger, Chemical Engineering (2017)
Daryll T. Munoz, Chemical Engineering (2016 – 2018)
Molly T. Cunningham, Chemistry (2016 – 2018) Paul Robeson scholar
Carolina Radecki, Chemical Engineering (2016 – 2017)
Umang Parikh, Chemical Engineering and Physics (2015 – 2016)
Amanda I. Okonmah, Chemical Engineering (2015 – 2016)
Mitchell W. Modzel, Materials Science (2015 – 2016)
Robert H. Lavroff, Chemical Engineering (2015)
Rachel A. Yang, Chemical Engineering (2015 – 2018) J.J. Slade Scholar senior thesis
Nicole Zougheib, Chemical Engineering (2015 – 2016)
Ryan R. Belfer, Chemical Engineering, (2015 – 2016) J.J. Slade Scholar senior thesis
Jayant V. Wunnava, Chemical Engineering (2014 – 2015)

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Katelyn A. Dagnall, Chemical Engineering (2014 – 2016) J.J. Slade Scholar senior thesis
Nicole Rico, Chemical Engineering (2013 – 2014)
Jacob D. Massa, Chemical Engineering (2013 – 2016) J.J. Slade Scholar senior thesis
Matthew J. Grossman, Chemical Engineering (2013)
Victoria Henry, Chemical Engineering (2013)

Visiting Students

Chenxu Liu, Chemistry, Jilin University (Fall 2019)
Gengxu Han, Chemistry, Jilin University (Fall 2018)
Bruce Jianyou Feng, Chemistry, Jilin University (Fall 2017)
Haley Yang Hu, Chemistry, Jilin University (Fall 2016)
Marissa E. Gliege, Chemical Engineering, Washington State University (Summer 2016)
Edward Jianfeng Zhao, Chemistry, Jilin University (Fall 2015)
Kaitlyn Dickson, Chemistry, The College of New Jersey, REU student (Summer 2015)
Sherry Yubai Zhang, Chemistry, Jilin University (Fall 2014)
Sean Noble, Chemical Engineering, University of Missouri, REU student (Summer 2014)
Travis J. Feaker, Chemistry, St. Norbert College, REU student (Summer 2013)

Visiting Scholars

Robert B. Barat, Professor of Chemical and Materials Engineering, New Jersey Institute of Technology (2017)

Ph.D. committees: Shubham Gupta (CCB), Jakub Konkol (CBE), Shivam Parasher (CBE), Adam Zuber (CBE), Hedun Wang (CBE), Tariq Bhatti (CCB), Arun Shada (CCB), Kurt Smith (CBE), Jonathan Colon (CBE), Yang Gao (CCB), Yansong Lu (CCB), Tian Zhou (CCB), Changjian Guan (CCB), Michael Blessent (CCB), Andrew Steffens (CCB), Paul F. Smith (CCB), Zhaojia Lin (CBE), Leebyn Chong (CBE), Sara Koynov (CBE)
M.S. committees: Yumeng Li (CBE), Joseph Shovlin (CBE), Ajay Kashi (CBE), Ingrid Paredes (CBE), Viral Sagar (CBE), Jieriu Liang (CBE), Hao Chen (CBE)

UNIVERSITY SERVICE

2023 – present Faculty Advisor, AIChE ChemE Car team
2022 – present Academic Advisor, CBE Senior students
2020 – present Member, SOE Diversity, Equity, and Inclusive Excellence Committee
2019 – present Member, CBE EP2 Committee
2014 – present Marshal, University Commencement
2014 – present Marshal, School of Engineering Convocation
2014 – present Member, CBE Undergraduate Curriculum Committee
2013 – present Member, CBE Qualifying Exam Committee
2012 – present Member, CBE Graduate Recruitment Committee
2012 – present Member, Rutgers Climate and Energy Institute
2012 – present Member, Rutgers Catalysis Research Center
2021 – 2023 Faculty Diversity Advocate for Chemical and Biochemical Engineering
2021 – 2023 Member, SGS Strategic Planning Group for Diversity and Inclusion
2019 – 2023 Member, School of Graduate Studies Executive Council
2016 – 2020 Member, SOE Health and Safety Committee
2015, 2019 Member, Governor's School Application Evaluation Committee
2012 – 2018 Member, Institute for Advanced Materials, Devices and Nanotechnology

FUAT E. CELIK

- 2013 – 2017 NSF Sustainable Fuels IGERT
- 2014 – 2015 Academic Advisor, CBE Senior students
- 2013 – 2015 Faculty Advisor, AIChE student chapter
- 2013 – 2015 Faculty Advisor, AIChE ChemE Car team
- 2013 – 2015 Chair, CBE Department Safety Committee
- 2014 Faculty Advisor, Governor's School ChemE Car project
- 2014 Aresty Research Fellowship Review Panelist
- 2013 Member, University Strategic Planning Sustainable World Committee
- 2013 Member, CBE Graduate Curriculum Committee
- 2013 Faculty Advisor, Rutgers-China Bridge Program ChemE Car workshop

PROFESSIONAL SERVICE

- 2018 – present Elected Director, Catalysis Society of Metropolitan New York
- 2019 – 2022 Technical Program Chair, 27th North American Meeting of the North American Catalysis Society (2022)
- 2016 – 2019 Planning Committee, 27th North American Meeting of the North American Catalysis Society (2022)
- 2015 – 2018 Elected Chair-Elect, Chair, Past Chair (three-year term) Catalysis Society of Metropolitan New York
- 2015 – 2018 Senior Investigator, Center for Enabling New Technologies through Catalysis
- 2016 Conference Organizer, Annual Symposium, Catalysis Society of Metropolitan New York, New Brunswick, NJ
- 2014 – 2015 Elected Secretary Catalysis Society of Metropolitan New York
- 2013 – 2015 Student Liaison, American Institute of Chemical Engineers, New Jersey Section
- 2015 Advisory Committee, International Conference on Advances in Functional Materials
- 2014 Judge, American Institute of Chemical Engineers Mid-Atlantic Regional Conference student research paper contest

Conference Sessions Chaired

- North American Meeting, North American Catalysis Society Meeting
 - 2023 Chair, Modeling, Simulation and Machine Learning: Elucidation of Active Sites
 - 2019 Chair, Fundamentals of Catalysis: Fundamentals of Hydrocarbon Catalysis
 - 2019 Chair, Catalyst Design and Synthesis: Catalysts for Oxidation
 - 2017 Chair, Photocatalysis I & III
- ACS National Meeting, Division of Catalysis Science and Technology
 - 2019 Presider, Gabor A. Somorjai Award for Creative Research in Catalysis IV
- AIChE National Meeting, Catalysis and Reaction Engineering Division,
 - 2017 Chair, Catalytic Hydrogen Generation I & II
 - 2016 Chair, Fundamentals of Supported Catalysis III: Multi-Metallics
 - 2016 Chair, New Developments in Computational Catalysis I
 - 2015 Chair, Fundamentals of Supported Catalysis II
 - 2015 Chair, Computational Catalysis IV
 - 2015 Co-Chair, In Honor of the 2014 Wilhelm Award Winner II & III
 - 2015 Co-Chair, Applications of DFT+X in Catalysis II
 - 2014 Chair, Fundamentals of Surface Reactivity I

FUAT E. CELIK

2014 Co-Chair, Fundamentals of Supported Catalysis II

2013 Chair, Catalysis with Microporous and Mesoporous Materials IV

2013 Co-Chair, Fundamentals of Surface Reactivity

Journal Reviewer

ACS Applied Energy Materials; ACS Catalysis; ACS Macro Letters; ACS Nano; ACS Omega; Angewandte Chemie International Edition; Applied Catalysis A: General; Applied Catalysis B: Environmental; Applied Surface Science; Catalysis Letters; ChemCatChem; ChemSusChem; Energy & Fuels; Fuel Processing Technology; Industrial & Engineering Chemistry Research; International Journal of Hydrogen Energy; Journal of the American Chemical Society; Journal of Catalysis; Journal of Materials Chemistry A; Journal of Physical Chemistry C; Journal of Physics and Chemistry of Solids; Journal of Power Sources; Nature Catalysis; Nature Communications; New Journal of Chemistry; Reaction Kinetics, Mechanisms and Catalysis; Surface Review and Letters; Surface Science; Talanta; Thin Solid Films

Proposal Reviewer

NSF Engineering, Chemical, Bioengineering, Environmental, and Transport Systems
DOE Office of Basic Energy Sciences Materials Sciences and Engineering Division
DOE Office of Technology Transitions
CENTC (NSF Center for Chemical Innovation)
Oak Ridge Associated Universities

Conference Abstract Reviewer

2023 28th North American Catalysis Society Meeting
2020 17th International Congress in Catalysis
2019 26th North American Catalysis Society Meeting
2017 25th North American Catalysis Society Meeting
2015 24th North American Catalysis Society Meeting
2007 8th Natural Gas Conversion Symposium

Professional Memberships

American Institute of Chemical Engineers
American Chemical Society
Sigma Xi, The Scientific Research Honor Society
North American Catalysis Society
Catalysis Society of Metropolitan New York
International Zeolite Association
Northeast Corridor Zeolite Association
American Society for Engineering Education