

VIKTOR J. CYBULSKIS, P.E.

Syracuse University Biomedical and Chemical Engineering
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EDUCATION

Ph.D.	Purdue University , Chemical Engineering, West Lafayette, IN	5/2016
B.S.	Purdue University , Chemical Engineering, West Lafayette, IN (Graduated with honors)	5/2005

PROFESSIONAL EXPERIENCE

Assistant Professor	Syracuse University , Biomedical and Chemical Engineering, Syracuse, NY	8/2018 – Current
Postdoctoral Scholar	California Institute of Technology , Chemical Engineering, Pasadena, CA (Advisor: Mark E. Davis)	6/2016 – 7/2018
Graduate Research Assistant	Purdue University , Chemical Engineering, West Lafayette, IN (Advisors: Fabio H. Ribeiro, W. Nicholas Delgass)	3/2011 – 6/2016
Production Engineer	TPC Group, Inc. , Baytown, TX	7/2009 – 3/2011
Research Engineer	LyondellBasell Industries , Alvin, TX	4/2007 – 7/2009
Production Engineer	Lyondell Chemical Company , Corpus Christi, TX	7/2005 – 4/2007

AWARDS AND RECOGNITION

Collaboration for Unprecedented Success and Excellence Award (<i>Syracuse University</i>)	2019
Organic Reactions Catalysis Society Travel Award (<i>North American Catalysis Society</i>)	2018
Chair of Inaugural Gordon Research Seminar in Catalysis (<i>Gordon Research Conferences</i>)	2018
37 th Annual Spring Symposium Oral Presentation Award (<i>Michigan Catalysis Society</i>)	2016
Graduate Student Symposium First Place Oral Presentation Award (<i>Purdue ChE</i>)	2015
School of Chemical Engineering Excellence in Safety Award (<i>Purdue ChE</i>)	2015
Purdue Presidential Safety Award (<i>Purdue ChE</i>)	2015
National School on Neutron and X-Ray Scattering Oral Presentation Award (<i>ANL-ORNL</i>)	2014
Spring Symposium Best Student Poster Award (<i>Catalysis Club of Chicago</i>)	2013
Eastman Chemical Company Travel Award (<i>Purdue ChE</i>)	2013
Eagle Scout (<i>Boy Scouts of America</i>)	2000

PUBLICATIONS

9. **Cybulskis, V.J.**; “An Alternate Route: Working Before Graduate School.” *Chemical Engineering Progress*. **2019**, *115*, 26-27.
8. Guo, Q.; Ren, L.; Kumar, P.; **Cybulskis, V.J.**; Mkhoyan, A.K.; Davis, M.E.; Tsapatsis, M.; “A Chromium Hydroxide/MIL-101(Cr) Composite Catalyst and its use for Selective Glucose Isomerization to Fructose.” *Angewandte Chemie International Edition*. **2018**, *130*, 5020-5024.

7. Cui, Y.; Li, Z.; Zhao, Z.; **Cybulskis, V.J.**; Sabnis, K.D.; Han, C.W.; Ortalan, V.; Schneider, W.F.; Greeley, J.; Delgass, W.N.; Ribeiro, F.H.; “Participation of Interfacial Hydroxyl Groups in the Water-Gas Shift Reaction Over Au/MgO Catalysts.” *Catalysis Science and Technology*. **2017**, *7*, 5257-5266. (2017 HOT article).
6. **Cybulskis, V.J.**; Bukowski, B.C.; Tseng, H.-T.; Gallagher, J.R.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Ribeiro, F.H.; Greeley, J.; Miller, J.T. “Zinc Promotion of Platinum for Catalytic Light Alkane Dehydrogenation: Insights into Geometric and Electronic Effects.” *ACS Catalysis*. **2017**, *7*(6), 4173-4181.
5. **Cybulskis, V.J.**; Pradhan, S.U.; Lovón-Quintana, J.J.; Hock, A.S.; Hu, B.; Zhang, G.; Delgass, W.N.; Ribeiro, F.H.; Miller, J.T. “The Nature of the Isolated Gallium Active Center for Propane Dehydrogenation on Ga/SiO₂.” *Catalysis Letters*. **2017**, *147*, 1252-1262.
4. **Cybulskis, V.J.**; Harris, J.; Zvinevich, Y.; Ribeiro, F.H.; Gounder, R. “A Transmission Infrared Cell Design for Temperature-Controlled Adsorption and Reactivity Studies on Heterogeneous Catalysts.” *Review of Scientific Instruments*. **2016**, *87*(10), 1031011-1031018.
3. **Cybulskis, V.J.**; Smeltz, A.D.; Zvinevich, Y.; Gounder, R.; Delgass, W.N.; Ribeiro, F.H. “Learning the Fundamentals of Kinetics and Reaction Engineering with the Catalytic Oxidation of Methane.” *Chemical Engineering Education*. **2016**, *50*(3), 202-210.
2. **Cybulskis, V.J.**; Ribeiro, F.H.; Gounder, R. “Using a Hands-On Hydrogen Peroxide Decomposition Activity to Teach Catalysis Concepts to K-12 Students.” *Journal of Chemical Education*. **2016**, *93*(8), 1406-1410.
1. **Cybulskis, V.J.**; Wang, J.; Pazmiño, J.H.; Ribeiro, F.H.; Delgass, W.N. “Isotopic Transient Studies of Sodium Promotion of Pt/Al₂O₃ for the Water-Gas Shift Reaction.” *Journal of Catalysis*. **2016**, *339*, 163-172. (Featured Article, July 2016).

MANUSCRIPTS IN PREPARATION

3. **Cybulskis, V.J.**; Gounder, R.; Davis, M.E. “Initiating a Research-Focused Academic Career in Chemical Engineering: A Summary of Perspectives from Early-to-Late Stage Faculty.”
2. **Cybulskis, V.J.**; Gawecki, P.; Ribeiro, F.H.; Gounder, R. “Demonstrating Concepts in Catalysis and Electrochemistry with the Platinum-Catalyzed Reaction of Hydrogen and Oxygen.”
1. **Cybulskis, V.J.**; Cui, Y.; Lovón-Quintana, J.J.; Milligan, C.; Delgass, W.N.; Ribeiro, F.H. “Water Activation by Supported Pt Catalysts for the Water-Gas Shift Reaction.”

INVITED PRESENTATIONS

6. Catalysis Society of Metropolitan New York, 2019 Annual Symposium, Princeton, NY (3/2019).
5. Syracuse University, Biomedical and Chemical Engineering, Syracuse, NY (2/2018).
4. Chevron Energy Technology Company, Richmond, CA (11/2016).
3. Shell Technology Center, Houston, TX (10/2015).
2. ExxonMobil Chemical Company, Baytown, TX (10/2015).
1. Purdue Energy Camp, West Lafayette, IN (6/2012).

CONTRIBUTED PRESENTATIONS

*Presenting author.

25. **Cybulskis, V.J.***; “Synthetic Routes to Chemical Building Blocks from Formaldehyde over Lewis Acidic Molecular Sieves.” *19th Annual Meeting American Institute of Chemical Engineers*, Orlando, FL (11/2019).
24. **Cybulskis, V.J.***; “A Synthetic Route to Platform Chemicals through a Formose-Inspired Approach with Lewis Acidic Zeotypes.” *Nanoporous Materials and Their Applications – Gordon Research Conference*, Andover, NH (8/2019) – Poster.
23. **Cybulskis, V.J.***; “Enabling New Reaction Pathways through Creation of Tailored Molecular Sieve Catalysts.” *Catalysis Gordon Research Conference*, New London, NH (6/2018) – Poster.
22. Brand, S.K.; **Cybulskis, V.J.***; Davis, M.E.; “Enantioselective Catalysis of Light Oxygenates with Chiral STW Molecular Sieves.” *27th Organic Reaction Catalysis Society Conference*, San Diego, CA (4/2018).
21. **Cybulskis, V.J.**; Bukowski, B.C.; Tseng, H.-T.*; Gallagher, J.R.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Ribeiro, F.H.; Greeley, J.; Miller, J.T.; “Geometric and Electronic Effects of Zn Promotion on Pt for Ethane Dehydrogenation.” *17th Annual Meeting American Institute of Chemical Engineers*, Minneapolis, MN (11/2017).
20. **Cybulskis, V.J.***; Zones, S.I.; Davis, T.M.; Chen, C.-Y.; Deem, M.W.; Davis, M.E.; “Structure-Property Relationships for Unidimensional, Large and Extra-Large Pore Zeolites Using Alkane Hydrocracking and Hydroisomerization as Probe Reactions.” *17th Annual Meeting American Institute of Chemical Engineers*, Minneapolis, MN (10/2017).
19. **Cybulskis, V.J.***; “Enabling New Reaction Pathways through Creation of Tailored Molecular Sieve Catalysts.” *17th Annual Meeting American Institute of Chemical Engineers*, Minneapolis, MN (10/2017) – Faculty Candidate Poster.
18. **Cybulskis, V.J.***; Zones, S.I.; Davis, T.M.; Chen, C.-Y.; Deem, M.W.; Davis, M.E.; “Structure-Property Relationships for Unidimensional, Large and Extra-Large Pore Zeolites Using Alkane Hydrocracking and Hydroisomerization as Probe Reactions.” *Nanoporous Materials and Their Applications – Gordon Research Conference*, Andover, NH (8/2017) – Poster.
17. **Cybulskis, V.J.***; Zones, S.I.; Davis, T.M.; Chen, C.-Y.; Deem, M.W.; Davis, M.E.; “Structure-Property Relationships for Unidimensional, Large and Extra-Large Pore Zeolites Using Alkane Hydrocracking and Hydroisomerization as Probe Reactions.” *Nanoporous Materials and Their Applications – Gordon Research Seminar*, Andover, NH (8/2017).
16. **Cybulskis, V.J.***; Zones, S.I.; Chen, C.-Y.; Davis, M.E.; “High-Silica, Large-Pore Zeolites for Alkane Hydrocracking and Hydroisomerization.” *25th North American Meeting of the Catalysis Society*, Denver, CO (6/2017).
15. **Cybulskis, V.J.**; Bukowski, B.C.; Tseng, H.-T.*; Gallagher, J.R.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Ribeiro, F.H.; Greeley, J.; Miller, J.T.; “Toward Predictive Design of Supported Metal Catalysts for Light Alkane Upgrading.” *25th North American Meeting of the Catalysis Society*, Denver, CO (6/2017).
14. **Cybulskis, V.J.***; Davis, M.E.; “Synthesis of Formaldehyde-Derived Intermediates by Lewis Acidic Molecular Sieves.” *Catalysis Center for Energy Innovation Spring Symposium*, Newark, DE (5/2017) – Poster.
13. **Cybulskis, V.J.**; Gallagher, J.R.; Tseng, H.-T.; Bukowski, B.C.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Greeley, J.; Ribeiro, F.H.; Miller, J.T.*; “Tuning Nanoparticle Alloys to Enhance C-H Bond Activation for the Catalytic Dehydrogenation of Ethane.” *253rd American Chemical Society Meeting*, San Francisco, CA (3/2017) – Priestley Medalist Symposium.

12. **Cybulskis, V.J.***; Gallagher, J.R.; Tseng, H.-T.; Bukowski, B.C.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Greeley, J.; Ribeiro, F.H.; Miller, J.T.; “Tuning Nanoparticle Alloys to Enhance C-H Bond Activation for the Catalytic Dehydrogenation of Ethane.” *16th Annual Meeting American Institute of Chemical Engineers*, San Francisco, CA (11/2016).
11. **Cybulskis, V.J.***; Cui, Y.; Shekhar, M.; Lovón-Quintana, J.J.; Delgass, W.N.; Ribeiro, F.H.; “The Role of the Support for Pt Catalysts during the Water-Gas Shift Reaction.” *16th Annual Meeting American Institute of Chemical Engineers*, San Francisco, CA (11/2016).
10. **Cybulskis, V.J.***; Cui, Y.; Shekhar, M.; Lovón-Quintana, J.J.; Delgass, W.N.; Ribeiro, F.H.; “The Role of the Support for Pt Catalysts during the Water-Gas Shift Reaction.” *37th Annual Michigan Catalysis Society Spring Symposium*, Midland, MI (5/2016).
9. **Cybulskis, V.J.**; Bukowski, B.C.; Tseng, H.-T.; Gallagher, J.R.; Wu, Z.; Wegener, E.; Kropf, A.J.; Ravel, B.; Ribeiro, F.H.*; Greeley, J.; Miller, J.T.; “Selective C-H Bond Activation by Supported Pt₁Zn₁ Nanoparticle Alloys during the Catalytic Dehydrogenation of Ethane.” *11th Natural Gas Conversion Symposium*, Tromsø, Norway (6/2016) – Keynote Presentation.
8. **Cybulskis, V.J.**; Cui, Y.; Shekhar, M.; Lovón-Quintana, J.J.; Delgass, W.N.; Ribeiro, F.H.*; “Water Activation by the Supports for Pt Catalysts during the Water-Gas Shift Reaction.” *251st American Chemical Society Meeting*, San Diego, CA (3/2016) – Ipatieff Award Symposium.
7. Cui, Y.*; Li, Z.; Sabnis, K.D.; **Cybulskis, V.J.**; Zhao, Z.-J.; Han, C.W.; Ortalan, V.; Greeley, J.P.; Delgass, W.N.; Ribeiro, F.H.; “Au/MgO Catalyst for the Water Gas Shift Reaction.” *15th Annual Meeting American Institute of Chemical Engineers*, Salt Lake City, UT (11/2015).
6. **Cybulskis, V.J.***; Pradhan, S.U.; Lovón-Quintana, J.J.; Hock, A.S.; Hu, B.; Zhang, G.; Miller, J.T.; Delgass, W.N.; Ribeiro, F.H.; “*Operando* X-ray absorption and kinetic study of single-site gallium catalysts for propane dehydrogenation.” *24th North American Meeting of the Catalysis Society*, Pittsburgh, PA (6/2015).
5. **Cybulskis, V.J.***; Lovón-Quintana, J.J.; Cui, Y.; Delgass, W.N.; Ribeiro, F.H.; “Isotopic transient studies of water activation on supported Pt catalysts during the water-gas shift reaction.” *Catalysis Club of Chicago Spring Symposium*, Naperville, IL (5/2015) – Poster.
4. Cui, Y.*; Sabnis, K.D.; **Cybulskis, V.J.**; Li, Z.; Akatay, M.C.; Delgass, W.N.; Ribeiro, F.H.; “Fe-Promoted Au/Rutile for the Water-Gas Shift Reaction.” *14th Annual Meeting American Institute of Chemical Engineers*, Atlanta, GA (11/2014).
3. Wang, J.; Pazmiño, J.H.; **Cybulskis, V.J.***; Delgass, W.N.; Ribeiro, F.H.; “An investigation of sodium promotion of Pt/Al₂O₃ for the water-gas shift reaction by isotopic transient techniques.” *23rd North American Meeting of the Catalysis Society*, Louisville, KY (6/2013).
2. Wang, J.; Pazmiño, J.H.; **Cybulskis, V.J.***; Delgass, W.N.; Ribeiro, F.H.; “The use of isotopic transient techniques to study sodium promotion of Pt/Al₂O₃ for the water-gas shift reaction.” *Catalysis Club of Chicago Spring Symposium*, Naperville, IL (5/2013) – Poster.
1. Wang, J.*; Pazmiño, J.H.; **Cybulskis, V.J.**; Shekhar, M.; Williams, W.D.; Miller, J.T.; Delgass, W.N.; Ribeiro, F.H.; “The Use of Isotopic Transient Techniques to Investigate the Nature of Alkali Promotion for the Water-Gas Shift Reaction on Pt Catalysts.” *12th Annual Meeting American Institute of Chemical Engineers*, Pittsburgh, PA (10/2012).

PATENTS

1. **Cybulskis, V.J.**; Webber, K.M.; “Steam Cracking Process.” U.S. Patent Application US-20110073524-A1 (2011), filed on September 25 (2009).

PROFESSIONAL SERVICE AND ACTIVITIES

Licensure: Professional Engineer - Indiana PE11400325 (2014-Current)

Leadership: AIChE Academia Young Professionals Liaison (2015-2017)

Advisory: AIChE Professional Engineer (PE) Taskforce (2016-2018)

Conference Organization: Gordon Research Seminar in Catalysis (2018)

Sessions Chaired and Organized: North American Meeting of the Catalysis Society (2019), AIChE Annual Meeting (2017-2019)

Manuscript Reviewer: ACS Catalysis, Chemical Engineering Science, Journal of Catalysis, Journal of Chemical Education, Journal of Physical Chemistry C, Science Advances

Proposal Reviewer: National Science Foundation (CBET-Catalysis and Biocatalysis), CenterState NY Corporation for Economic Opportunity (Grants for Growth)

Conference Abstract Peer Reviewer: North American Meeting of the Catalysis Society (2013, 2019)

Outreach Activities (K-12): Innovation-to-Reality (I2R) through Purdue Women In Engineering program (10/2015), Engineering FYI: For Your Imagination through Purdue Women In Engineering program (7/2015), Duke Energy Academy at Purdue (6/2015), Innovation-to-Reality (I2R) through Purdue Women In Engineering program (4/2015), and Purdue Energy Camp (6/2012)

Department and University Service: Syracuse BMCE Peer Teaching Observation Committee (2019-2020), Syracuse ECS Learning Community Faculty Connection Series (2019-2020), Syracuse BMCE Ph.D. Admissions Committee (2019), Syracuse BMCE Faculty Search Committee (2018-2019), Purdue ChE Head Search Committee (2015-2016), Purdue ChE Safety Committee (2014-2015), Purdue ChE Laboratory Safety Officer (2013-2014)

Member: American Chemical Society (ACS), American Institute of Chemical Engineers (AIChE), Catalysis Society of Metropolitan New York, International Zeolite Association (IZA), National Society of Professional Engineers (NSPE), North American Catalysis Society (NACS), Omega Chi Epsilon (Ω XE)

TEACHING EXPERIENCE

Chemical Engineering Laboratory II (CEN 412), Undergraduate Core Course: Fall 2019 (25 students), Fall 2018 (28 students)

Teaching Development: ECS Gateway Course Redesign Workshop at Syracuse University (2019)

CURRENT RESEARCH GROUP

Ph.D. Students (3)

- Hansheng Li (1/2019-Current). ChE, Syracuse University.
- Wenlin He (1/2020). ChE, Syracuse University. Syracuse University Graduate Fellow.
- Jingzhi Liu (8/2019-Current). ChE, Syracuse University.

Undergraduate Students (1)

- Reem Alqasayar (1/2019-Current). ChE, Syracuse University.

RESEARCH GROUP ALUMNI

*Undergraduate student enrolled in graduate school.

Undergraduate Students (3)

- Wenlin He* (1/2019-5/2019). (*Ph.D. Student, ChE, Syracuse University*).
- Jingzhi Liu* (1/2019-5/2019). (*Ph.D. Student, ChE, Syracuse University*).
- Dakota Story (6/2019-8/2019). (*B.S. Student, ChE, Syracuse University*).