B A Y L O R U N I V E R S I T Y
Chemical Engineering Professor
School of Engineering and Computer Science

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Professional Preparation

Technical University of Lisbon, Portugal	1982-1985	Chemical Engineering*

*In 1986, recruited to U.S. for NCAA Swimming, needed to change to closely related degree program to maintain undergraduate eligibility (in '84, '88, '92 Olympic Games)

Southern Illinois University at Carbondale	B.S.	1990 Chemistry
Southern Illinois University at Carbondale	M.Sc.	1992 Chemistry
Texas A&M University	Ph.D.	1997 Chemistry
Oregon State University	Postdoc	4/1997 – 12/1997 Chemistry

Faculty Appointments

Baylor University, Associate Dean for Research and Graduate Programs		6/2022 - present
Baylor University, Professor of Chemical Engineering, ME Dept.		8/2017 – present
Oregon State University, Dept. of Chem. Engr.	Professor	9/2015 – 8/2017
Oregon State University, Dept. of Chem. Engr.	Associate Professor	9/2010 – 8/2015
Oregon State University, Dept. of Chem. Engr.	Assistant Professor	6/2004 – 9/2010
Oregon State University, Dept. of Chemistry	Research Assistant Professor	1/2000 – 5/2004
Oregon State University, Dept. of Chemistry	Director of Diffractometry Labs	1/1998 – 5/2004

Research Projects

Total $24.4M, My Portion $5.6M; SETO, NASA, EERE and NSF proposals under review, 4x patents

Thesis/Dissertation Advisor and Postgraduate Scholar Sponsor

Graduated 18 M.S., 12 Ph.D., 11 M.Eng., 4 Postdoc and 8 Honors students, multiple UG researchers
Currently Advising 4 Ph.D. students, 2 Undergraduate researchers
Have taught 56 courses, developed 9 new courses, and conducted 6 overhauls of courses

Example Journal Publications (of 75 Journal papers, 145 Conference papers)
H-index: Web of Science = 24, Google Scholar = 29

1. Miao, Yu; Kreider, Peter; Pommerenck, Justin; AuYeung, Nicholas; von Jouanne, Annette; Jovanovic, Goran; Yokochi, Alexandre, " CO2 Reduction by Multiple Low Energy Electric Discharges in Microstructured Reactor: Experiments and Modeling", Journal: Industrial & Engineering Chemistry Research, July 2022.
2. R. Collin, A. Yokochi, A. von Jouanne, "Novel Characterization of Si- and SiC-based PWM Inverter Bearing Currents Using Probability Density Functions", Energies Journal, April 2022.
3. Ian Reddick, Adam Shareghi, Yu Miao, Justin Pommerenck, Matthew Coblyn, Alexandre Yokochi, Annette Von Jouanne, Goran Jovanovic, Nick AuYeung, "Parametric Study of Hydrocarbon Chain Growth from Methane via a Nonthermal Plasma Discharge Microreactor, Journal: Industrial & Engineering Chemistry Research, July 2022.
4. Miao, Yu; Kreider, Peter; Reddick, Ian; Pommerenck, Justin; Collin, Ryan; AuYeung, Nicholas; von Jouanne, Annette; Jovanovic, Goran; Yokochi, Alexandre, "Methane Coupling and Conversion to Ethylene and Longer Chain Hydrocarbons by Low Energy Electric Glow Discharge in

Microstructured Reactors", Ind. Engin. Chem. Res. 2021, 60, pp.6950-6958. Paper chosen for Journal cover/figure.

5. Yu Miao, Annette von Jouanne, Alex Yokochi, “Technologies in Polyolefin Depolymerization Process and The Road Ahead” Polymers 2021, 13, 449. DOI: 10.3390/polym13030449.
6. Collin, R.; Miao, Y.; Yokochi, A., Enjeti, P.; von Jouanne, A., “Advanced Electric Vehicle Fast-Charging Technologies” Energies 2019, 12, 1839. DOI: 10.3390/en12101839
7. Miao, Y.; Hynan, P.; von Jouanne, A.; Yokochi, A., “Current Li-Ion Battery Technologies in Electric Vehicles and Opportunities for Advancements” Energies 2019, 12, 1074. DOI: 10.3390/en12061074. Energies Journal Prize/Best Paper of 2019 Award, Awarded in April 2021 after citation accumulation.
8. Lei, FQ; Freiberg, L ; Wang, YG; Reddick, I; Jovanovic, G; Yokochi, A; AuYeung, N “Non-catalytic ethane cracking using concentrated solar energy” Chem. Engin. J. 2019, 355, 58-64
9. Y Miao, N Siri-Nguan, T Sornchamni, GN Jovanovic, A Yokochi “CO2 reduction in wet ionic liquid solution in microscale-based electrochemical reactor” Chem. Engin. J. 2018, 333, 300-309.
10. Wang, YG; Lei, FQ; Freiberg, L; Bagherisereshki, E; Inbamrung, P; Intarasiri, S; Jovanovic, G; Yokochi, AFT; Arnadottir, L; AuYeung, N “Dry Reforming in a Milli-Scale Reactor Driven by Simulated Sunlight” ChemEngineering 2018, 2, 50. DOI: 10.3390/chemengineering2040050
11. Khongthon, W; Jovanovic, G; Yokochi, A; Sangvanich, P; Pavarajarn, V “Degradation of diuron via an electrochemical advanced oxidation process in a microscale-based reactor” Chem. Engin. J. 2016, 292, 298-307
12. K. Caple, N. AuYeung, P. Kreider, A. Yokochi, Experimental modeling of hydrogen sulfide producing steps in a novel sulfur-sulfur thermochemical water splitting cycle”, International Journal of Hydrogen Energy 2015, 40, 2484-2492
13. N. AuYeung A. Yokochi, “Steam Reformation of Hydrogen Sulfide”, International Journal of Hydrogen Energy 2013, 38, 6304-6313.
14. DJ Dickson, B Lassetter, B Glassy, CJ Page, AFT Yokochi, RL Ely “Diffusion of dissolved ions from wet silica sol-gel monoliths: implications for biological encapsulation” Colloids Surf B Biointerfaces 2013, 102, 611-9.
15. Song, H.; Mulley, S.; Coussens; N., Dhagat, P.; Jander, A.; Yokochi, A. “Effect of packing fraction on ferromagnetic resonance in NiFe2O4 nanocomposites” J. Appl. Physics 2012, 111, 07E348
16. Bamaga, O.A.; Yokochi, A.; Zabara, B.; Babaqi, A.S. “Hybrid FO/RO desalination system: Preliminary assessment of osmotic energy recovery and designs of new FO membrane module configurations” Desalination 2011, 268, 163-169.

Example AIChE Conference Papers (of 145 Conference papers)

1. Riley Choquette, Ben Phillips, Annette von Jouanne, Alexandre Yokochi, “Experimental Evaluation of Thermal Energy Storage Using the Sorption-Assisted Boudouard Process”, AICHE Annual Meeting, Nov. 2022.
2. Riley Choquette, Ben Phillips, Yu Miao, Annette von Jouanne, Alexandre Yokochi, “Thermal Energy Storage Using Sorption-Assisted Boudouard Processes”, AIChE Annual Meeting, Nov. 2021.
3. Omar Mohamed, Ian Reddick, Matthew Coblyn, Nick AuYeung, Alexandre Yokochi and Goran Jovanovic, “Experiment and Modelling of Plasma Kinetics for Multi-Component Mixtures in Needle-to-Needle and Needle-to-Plate Ambient Pressure DC Glow Discharge Microscale Reactors”, AIChE Annual Meeting, Nov. 2021.
4. Omar Mohamed, Matthew Coblyn, Nick AuYeung, Alexandre Yokochi and Goran Jovanovic, “Temperature Pulsed Formation of C8 to C10 Hydrocarbons Utilizing Ethylene Polymerization in Microscale Reactor”, AIChE Annual Meeting, Nov. 2021.
5. Riley Choquette, Ben Phillips, Yu Miao, Annette von Jouanne, Alexandre Yokochi, “Analysis of Thermal Energy Storage Using Sorption-Assisted Boudouard Processes”, AIChE Solar Energy Systems Conf., Aug. 2021.
6. Yu Miao, Annette von Jouanne, Alex Yokochi, Thermal Energy Storage Using the Boudouard Reaction, AIChE Annual Meeting, San Francisco, Nov. 15-20th, 2020.

7. Yu Miao, Annette von Jouanne, Alex Yokochi, Hydrothermal Depolymerization of Polyolefin Using Supercritical Water Powered by Renewable Solar Thermal Energy, AIChE Annual Meeting, San Francisco, Nov. 15-20th, 2020.
8. Ben Phillips, Jimi Adegbohun, Annette von Jouanne, Ryan Collin, Yu Miao, Alex Yokochi, Rapid Determination of the SOH of Lithium-ion Batteries for Electric Vehicles, AIChE Battery and Energy Storage Conf., October, 2020.

Synergistic Activities

Dr. Yokochi's work focuses on process and reaction engineering and materials development, in particular relating to enhancing the energy and materials sustainability of our technical society. Some of his core expertise and interests include process implementation in novel platforms enabling process intensification, such as microstructured reactors and membrane reactors, and the development of novel forms of condensed matter with desirable properties. In particular, he is seeking to develop approaches to decarbonize industry, such as through the use of renewable energy for process heat.

Examples of Demonstrated Effective Service and Leadership include:

- Chair, Baylor University Promotion and Tenure Committee 2021-2022
- Lead PI on a 3 year, $2.5M ARPA-E contract (successfully completed in 2019), on converting methane gas to liquid fuels using dc discharges
- Chair, 1st AIChE/IEEE Solar Energy Systems Conference, Waco, TX, Dec 12-13, 2019
- Started new symposia at the AIChE annual meeting including 1) Solar Thermochemical Processes, 2) Renewable Energy Storage, and 3) Reaction Engineering in Microreactors
- Developed the new academic program of Chemical and Biomolecular Engineering at Baylor University, through to full University Approval
- Program Coordinator and Founder of the Baylor Chemical Engineering Laboratories
- Requested by NSF to represent US Chemical Engineering at the World Congress on Chemical Engineering (WCCE 9) in Seoul, Korea in August of 2013
- Education Chair for the AIChE Sustainable Engineering Forum 2010-2014
- Renewable Energy and Energy Storage area Program co-Chair at SusTech 2014 & 2015, with ongoing efforts to expand Sustainable Engineering Forum activities to include the IEEE
- Director of the innovative Reaction Engineering for Materials and Sustainability laboratory at OSU (iREMS lab, 2004-2017), the premier electrochemical energy storage laboratory in the region

Awards and Honors

- AIChE Fellow
- Awarded in April 2021 (after citations/value evaluated) - Energies Journal Best Journal Paper of the Year Award for 2019 - Miao, Y.; Hynan, P.; von Jouanne, A.; Yokochi, A., Current Li-Ion Battery Technologies in Electric Vehicles and Opportunities for Advancements. Energies 2019.
- Paper chosen for Journal cover/figure, Journal: Industrial & Engineering Chemistry Research, Accepted April 2021.
- AIChE Conference Chair Service Award for Organizing and Chairing the Solar Energy Systems Conference, Waco, TX, 2019.
- National Science Foundation Faculty Early Career Development Award (CAREER) – 2007. "the National Science Foundation's most prestigious awards in support of the early career-development activities of those teacher-scholars who most effectively integrate research and education within the context of the mission of their organization." [NSF web site]
- IEEE Industry Applications Society Magazine Prize Article Award for the paper "Gone with the wind: innovative hydrogen/fuel cell electric vehicle infrastructure based on wind energy sources" Von Jouanne, A.; Husain , I.; Wallace, A.; Yokochi, A.; Industry Appl. Magazine, pp. 12-19, July/Aug. 2005.
- Oregon BEST best poster award for "The Power of Energy Storage for Renewables Integration into the Grid: Research Insights on Requirements" A. Yokochi, A. Bistrika, A. von Jouanne, T. Brekken, et al., BEST Fest, Sept. 2012.
- IEEE Power and Energy Society best paper for "Supercapacitor Energy Storage for Wind Energy Integration", E. Naswali, C. Alexander, H. Han, D. Naviaux, A. Bistrika, A. von Jouanne, A. Yokochi, T. Brekken, ECCE, Sept. 2011.