

Qixin Zhou , PhD

Assistant Professor, Department of Chemical and Biomolecular Engineering
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EDUCATION

Ph.D.	Mechanical Engineering North Dakota State University (NDSU), Fargo, ND, USA	2014
M.S.	Chemical Engineering	2009

	Department of Chemical and Biomolecular Engineering The University of Akron, Akron, OH	2014 Š Present
Research Assistant	Department of Mechanical Engineering North Dakota State University, Fargo, ND	2009 Š 2014

RESEARCH INTEREST

Advanced coating development for corrosion protection; Coating synthesis, formulation, and characterization; Coating evaluation and failure analysis; Coating service lifetime prediction; Computational simulations on coating behaviors; Corrosion monitoring and analysis

GRANTS & RESEARCH FUNDING

1. 2019 Lubrizol Advanced Materials, PI, \$40,000, 1/1/2019~12/31/2019
2. 2019 University of Akron I-Corps, PI, \$2,500, 3/1/2019~2/29/2020
3. 2018 Firestone Research Initiative Fellowship Award, PI, \$10,000
4. 2015 Faculty Research Fellowships, PI, \$10,000, 5/11/2015~8/31/2015
5. 2015 Firestone Research Initiative Fellowship Awards, PI, \$10,000
6. NCERCAMP Project Development Grant, PI, \$2,000, 1/1/2016~5/31/2016

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Name: graduate student in Dr. Qixin Zhou's group

Peer-reviewed Journal Articles

At The University of Akron (2014 Aug. Present):

1. Haoran Wang, Cheng Zhang, Weixiu Zeng, and Qixin Zhou*, "Making alkyd greener: Modified cardanol as bio-based reactive diluents for alkyd coating," **Progress in Organic Coatings** 135 (2019), 281-290.
2. Cheng Zhang, Haoran Wang, Weixiu Zeng, and Qixin Zhou*, "High biobased carbon content polyurethane dispersions synthesized from f g>a J 0.626(h")-5.9(H)2.id-based oat "515d [(ga(Td
3. Weixiu Zeng, Zhifeng Deng, Haoran Wang, Hai Qixin Zhou*, "Benzodifuranone based color-- 205
4. Cheng Zhang, Haoran Wang, Qix n Zhou 125 (2018), 403-"410.

14. Qixin Zhou , Yechun Wang, Dennis E. Tallman, Mark B. Jensen, "Simulation of SECM approach curves for heterogeneous metal surfaces," **Journal of The Electrochemical Society** 159 (2012), H644-H649.
15. Qixin Zhou , Yechun Wang, Gordon P. Bierwagen, "Influence of the composition of working fluids on flow-accelerated organic coating degradation: deionized water versus electrolyte solution," **Corrosion Science** 55 (2012), 97-106.
16. Tongfu Qin, Benxian Shen, Jichang Liu, Qixin Zhou, Yang Qu, "The biodegradation kinetics of refining wastewater by microorganism UBD," **Petroleum Science & Technology** 30 (2012), 1823-1826. 10.1016/j.petl.2012.03.017 (http://dx.doi.org/10.1016/j.petl.2012.03.017)

- dimer fatty acid-based isocyanate,” 2019 Sink Or Swim Cleveland Coatings Society conference, June 4-5, 2019, Cleveland, Ohio, USA. **Best Student Award/Second Place**
2. Haoran Wang, Qixin Zhou, “Synthesis and application of modified cardanol as reactive diluents for alkyd coating,” 2019 Sink Or Swim Cleveland Coatings Society conference, June 4-5, 2019, Cleveland, Ohio, USA. **Best Student Award/Second Place**
 3. Cheng Zhang, Qixin Zhou, “Renewable anticorrosion waterborne polyurethane from dimer fatty acid-based isocyanate,” 2019 Eastern Coating Show, May 13-16, 2019, Atlantic City, New Jersey, USA.
 4. Haoran Wang, Qixin Zhou, “Synthesis and application of modified cardanol as reactive diluents for alkyd coating,” 2019 Eastern Coating Show, May 13-16, 2019, Atlantic City, New Jersey, USA.
 5. Weixiu Zeng, Qixin Zhou, “A new color-changing coating prepared by incorporating 1,4-BDF pigments into epoxy polyamine system,” 2019 Eastern Coating Show, May 13-16, 2019, Atlantic City, New Jersey, USA.
 6. Cheng Zhang, Qixin Zhou, “Renewable anticorrosion waterborne polyurethane from dimer fatty acid-based isocyanate,” 2019 CoatingsTech Conference, April 8-10, 2019,

- enhanced UV resistance and corrosion resistance,” 2018 SSPC Annual Meeting, January 15-18, 2018, New Orleans, Louisiana, USA.
18. Weixiu Zeng, Qixin Zhou, “Development of DPP pigmented epoxy coatings ,” 2017 MS&T conference, October 8-12, 2017, Pittsburg, Pennsylvania, USA.
 19. Haoran Wang, Qixin Zhou, “Development of self -healing coating based on microcapsules for corrosion protection,” 2017 NACE Corrosion, March 26-30, 2017, New Orleans, Louisiana, USA.
 20. Sinuo Lang, Qixin Zhou , “Microcapsules based self-healing coatings for corrosion protection,” 2016 SSPC Annual Meeting, January 18-21, 2016, San Antonio, Texas, USA.
 21. Sinuo Lang, Qixin Zhou , “Development on PUF-linseed oil microcapsules bases self-healing coatings for corrosion protection,” 2015 Department of Defense-Allied Nations Technical Corrosion Conference, November 15-19, 2015, Pittsburgh, Pennsylvania, USA.

Prior to The University of Akron:

22. Qixin Zhou , Yechun Wang, “Flow promoted organic coating corrosion,” 2014 ND EPSCoR State Conference, April 29, 2014, Grand Forks, North Dakota, USA.
23. Qixin Zhou , Yechun Wang, “Degradation of corrosion protective coatings by flowing fluids,” 3rd NDSU/UND/SDSU Engineering Conference, April 23, 2013, Brookings, South Dakota, USA.
24. Qixin Zhou , Yechun Wang, “Flow accelerated degradation of organic coatings,” 4th Annual NDSU Graduate Research & Arts Forum, April 11, 2013, Fargo, North Dakota, USA.
25. Qixin Zhou , Yechun Wang, “Degradation behavior of organic coatings immersed in flowing fluids,” Symposium on Sustainable Materials & Light Driven Processes

24. Qixin Zhou

32. Qixin Zhou , Benxian Shen, “Biodegradation of petroleum hydrocarbons in petrochemical wastewater by an active microorganism,” 12th Asia-Pacific Confederation of Chemical Engineering Congress, August 4-6, 2008, Dalia

- Weixiu Zeng, thesis entitled “High performance organic pigments for one-coat epoxy coating with multi-functions”, defended in fall 2018, graduated in spring 2019

Undergraduate Students with Honor Projects

- Jovan Jevric, honor project entitled “Bio-based, waterborne non-isocyanate polyurethanes”, spring 2019
- Nicholas Pottschmidt, honor project entitled “Development of cardanol-based epoxy coating”, spring 2019
- Sarah Medeiros, honor project entitled “The influence of organic pigments on coating properties”, spring 2018
- Kyle Kraus, honor project entitled “Role of salt on coating failure”, spring 2017

TEACHING

Undergraduate Course s

- Materials and Energy Balances (4200:200) (Fall 2014)
- Materials and Energy Balances for Corrosion Engineering (4250:200) (Fall 2015, 16, 17, 18)
- Aqueous Corrosion Lab 1 (4250:301) (Fall 2014, 15, 16, 17,18)
- Aqueous Corrosion Lab 2 (4250:306) (Spring 2016)
- Cathodic Protection & Organic Coatings* (4200:496) (Spring 2015)
- Corrosion Protection by Organic Coatings* (4200:496) (Spring 2017, 18, 19)

Graduate Course

- Corrosion Protection by Organic Coatings* (4200:696) (Spring 2017, 18, 19)

*: new course developed

SYNERGISTIC ACTIVITIES

On-campus Service

- Department undergraduate advisor
- Department safety coordinator
- Department NACE scholarship committee member
- Thesis/dissertation committee

Electrochemistry Communications
Electrochimica Acta
Environmental Science &
Technology
Green Chemistry
Green Materials
Industrial & Engineering Chemistry
Research

Iranian Journal of Chemistry and
Chemical Engineering
JOM

Langmuir
Materials & Design
Materials Chemistry Frontiers
Materials Research
Materials Today Sustainable
PLOS ONE
Progress in Organic Coatings
Reactive and Functional Polymers
Smart Materials and Structures
Petroleum Science and Technology
The Electrochemical Society

Proposal Reviewer

- NSF STTR/SBIR program

Conference Chair

- Co-organizer: Substrate Protection for Corrosion Prevention, Symposium of the 2019 Materials Science & Technology Conference, 2019, Portland, Oregon, USA.
- Chair: Research in Progress—Coatings & Inhibitors Symposium, 2019 NACE Corrosion, 2019, Nashville, Tennessee, USA.
- Co-organizer: Advanced Coatings for Wear and Corrosion Protection, Symposium of the 2016 Materials Science & Technology Conference, 2016, Salt Lake City, Utah, USA.

Committee member

- International Research Committee of the National Association of Corrosion Engineers (NACE)
- Active member of The Society for Protective Coatings (SSPC)