

Michael Tylinski

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Appointments

Assistant Professor of Physical Chemistry, Southern Oregon University
September 2022 – Current

Assistant Professor of Chemistry, Wentworth Institute of Technology
September 2020 – August 2022

Post Doctorate Research Associate, Pacific Northwest National Laboratory
August 2018 – July 2020

Visiting Assistant Professor in Chemistry, Widener University
August 2017 – August 2018

Anderson Natural Science Lecturer, Cornell College
January 2017 – May 2017

Education

PhD in Chemistry, materials chemistry path, University of Wisconsin Madison, 2017

Research area: Molecular glasses

Advisor: Professor Mark D. Ediger

B. A. with honors in Chemistry, Grinnell College, 2011

Teaching Experience and Related Activities

Southern Oregon University:

Physical Chemistry, Physical Chemistry Lab, Computational Methods, General Chemistry Lab.

Wentworth Institute of Technology:

General Chemistry I, Chemistry of the Built Environment, Organic Chemistry 1 Lab, Scientific Instrumentation.

Widener University:

General Chemistry I, General Chemistry II, Organic Chemistry I Lab, Organic Chemistry II Lab, Nursing Chemistry Lab.

Cornell College:

General Chemistry I, Organic Chemistry Lab, Student Research in Physical Chemistry.

University of Wisconsin Madison:

Teaching assistant: General Chemistry I, Physical Chemistry

Outreach teaching: Polymer science (<https://ediger.chem.wisc.edu/content/outreach>)

Academic Service

Wentworth Institute of Technology:

Faculty Senate. Enrollment and Admissions Committee. Bioengineering Curriculum Committee, Course Coordinator: General Chemistry I, Chemistry of the Built Environment. Student recruiting. Academic advising. Curriculum planning. Search committees. Mentor for part time instructors. Lab safety planning. Instrumentation maintenance.

Publications

Morphology of vapor-deposited acetonitrile films

M. Tyllinski, R. Scott Smith, Bruce D. Kay

J Phys. Chem. A **124**, 6237 (2020)

Structure and desorption kinetics of acetonitrile thin films on Pt (111) and on graphene on Pt (111)

M. Tyllinski, R. Scott Smith, Bruce D. Kay

J. Phys. Chem. C **124**, 2521 (2020)

Effect of molecular size and hydrogen bonding on three surface-facilitated processes in molecular glasses: Surface diffusion, surface crystal growth, and formation of stable glasses by vapor deposition

Yinshan Chen, Zhenxuan Chen, M. Tyllinski, M. D. Ediger, Lian Yu

J. Chem. Phys. **150**, 024502 (2019)

Glasses of three alkyl phosphates show a range of kinetic stabilities when prepared by physical vapor deposition

M. S. Beasley, M. Tyllinski, Y.Z. Chua, C. Schick, M.D. Ediger

J. Chem. Phys. **148**, 174503 (2018)

Limited surface mobility inhibits stable glass formation for 2-ethyl-1-hexanol

M. Tyllinski, M. S. Beasley, Y.Z. Chua, C. Schick, M.D. Ediger

J. Chem. Phys. **146**, 203317 (2017)

Vapor-deposited alcohols reveal a wide range of kinetic stability

M. Tyllinski, Y.Z. Chua, M.S Beasley, C. Schick, M.D. Ediger

J. Chem. Phys. **145**, 174506 (2016)

Glass transition and stable glass formation of tetrachloromethane

Y. Z. Chua, M. Tyllinski, S. Tatsumi, M.D. Ediger, C. Schick

J. Chem. Phys. **144**, 244503 (2016)

Vapor-deposited glasses of methyl-*m*-toluate: How uniform is stable glass transformation?

M. Tyllinski, A. Sepúlveda, D.M. Walters, Y.Z. Chua, C. Schick, M.D. Ediger

J. Chem. Phys. **143**, 244509 (2015)

Suppression of β relaxation in vapor -deposited ultrastable glasses

H.B. Yu, M. Tylinski, A. Guiseppi-Elie, M.D. Ediger, R. Richert

Phys. Rev. Lett. **115**, 185501 (2015)

Kinetic stability and heat capacity of vapor-deposited glasses of o-terphenyl

Katherine R. Whitaker, M. Tylinski, M. Ahrenberg, C. Schick, M.D. Ediger

J. Chem. Phys. **143**, 084511 (2015)

How much time is needed to form a kinetically stable glass? AC calorimetric study of vapor-deposited glasses of ethylcyclohexane

Y. Z. Chua, M. Ahrenberg, M. Tylinski, M.D. Ediger, C. Schick

J. Chem. Phys. **142**, 054506 (2015)

Role of Fragility in the Formation of Highly Stable Organic Glasses

A. Sepúlveda, M. Tylinski, A. Guiseppi-Elie, R. Richert, M.D. Ediger

Phys. Rev. Lett. **113**, 045901 (2014)

Invited Presentations

“Exploring and Understanding the Kinetic Stability of Vapor-Deposited Alcohol Glasses”

Seminar for University of Pennsylvania MERSEC meeting, February 9, 2018

“Tougher screens and Brighter displays: Recent advances from the world of glass”

Widener University Science Division seminar, February 5, 2018

“From skateboarding on a tablet to brighter cellphone displays; recent advances from the world of glass.”

Anderson Natural Science Lecture, a public lecture at Cornell College, April 26, 2017

“The motion of molecules at the surface of organic glasses and how to create brighter cellphone displays.”

Seminar for the Coe College Department of Physics, March 17, 2017

Conference Presentations

“Lessons from a multidisciplinary advanced lab course”

M. Tylinski, A. Seredinski

American Physical Society March Meeting 2022

“Desorption kinetics and structure of acetonitrile films on Pt (111) and graphene on Pt (111).”

M. Tylinski, R. Scott Smith, Bruce D. Kay

Pacific Northwest American Vacuum Society Meeting 2019

“Preparing organic glasses with high kinetic stability via physical vapor deposition: Role molecular structure.”

M. Tyllinski, M. Beasley, Y. Chua, C. Schick, M.D. Ediger

American Ceramics Society, Glass and Optical Materials Division Meeting 2016

“Will it form a stable glass? How the stability of vapor deposited glasses depends on molecular structure.”

Michael Tyllinski, Madeleine S. Beasley, Yeong Zen Chua, Christoph Schick, and Mark D. Ediger

American Physical Society March Meeting 2016

“What molecules can make stable glasses?”

Mike Tyllinski, Madeleine S. Beasley, Yeong Zen Chua, Christoph Schick, and Mark D. Ediger

Gordon Research Seminar and Conference: Liquids 2015

“Stable Glasses of a Low Fragility Organic Liquid: *In situ* AC nanocalorimetry and dielectric spectroscopy study of methyl-*m*-toluate.”

M. Tyllinski, A. Sepulveda, A. Guiseppe-Elie, R. Richert, Y.Z. Chua, C. Schick, and M.D. Ediger

American Physical Society March Meeting 2015.

“Ionic conductivity and transference numbers in silyl electrolytes for lithium device applications”

Michael Tyllinski, Elizabeth Martin, and Professor Leslie J Lyons

American Chemical Society National Meeting 2011

“Lithium Electrolyte Conductivity Studies with 1NM3”

Michael Tyllinski, and Professor Leslie J Lyons

American Chemical Society Midwest Regional Meeting 2009

Awards

Outstanding Chemistry Teaching Award (2013 - 2014), University of Wisconsin Madison

Young Investigator Competition Winner (2015), Gordon Research Conference

Proposal Writing Experience

NSF Chemistry Grant 1564663: Investigation of Vapor-deposited Glasses by Nanocalorimetry and Dielectric Relaxation

I played a major role in brainstorming, writing, and preparing this grant proposal.

The grant was funded in July 2016 for \$336,000.

2016 NSF Professional Development Proposal

Wrote a proposal to spend 6 weeks in Fall 2016 to develop and teach a polymer science module for Grinnell College's Physical Chemistry courses, while learning about evidenced based teaching practices from Professor Elaine Marzluff. The proposal was not awarded.