**Xiaoran Hu Curriculum Vitae**

Assistant Professor Phone: To be updated

Syracuse University Email: xhu156@syr.edu

111 College Pl, Syracuse, NY 13210

 **Education \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Tufts University, Medford, MA

Ph.D. in Chemistry

2012–2017

Nanjing University, Nanjing, China

B.S. in Chemistry

2006–2010

 **Research Experience \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Assistant Professor**, Syracuse University, Department of Chemistry & Bioinspired Institute

2022–present

*smart materials; drug delivery*

**Postdoctoral Associate**, Cornell University, Meinig School of Biomedical Engineering & Department of Chemistry and Chemical Biology

Advisors: Shaoyi Jiang and Geoffrey W. Coates

2021–2022

*mRNA delivery; biomaterials*

**Postdoctoral Scholar**, Caltech, Division of Chemistry and Chemical Engineering

Advisor: Maxwell J. Robb

2017–2021

*polymer mechanochemistry; organic chemistry*

**Graduate Student Researcher**, Tufts University, Department of Chemistry

Advisor: Samuel W. Thomas

2012–2017

*polymer chemistry; self-assembled nanomaterials; organic chemistry*

 **Awards and Honors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

2019 ACS PMSE Distinguished Poster Nominee

2018 Finalist, ACS Eastman Chemical Student Award in Applied Polymer Science

2016 Graduate Student Research Competition Award, Tufts University

2016 Graduate Research Excellence at Tufts (GREAT) Fellowship, Tufts University

2016 Graduate Student Travel Award, Tufts University

2007-2009 RenMin Scholarship, Nanjing University

 **Publications\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(15) Husic, C. C.; Hu, X; Robb, M. J. “Incorporation of a Tethered Alcohol Enables Efficient Mechanically Triggered Release in Aprotic Environments”, *ACS Macro Lett.* **2022** 11, 948-953

(14) Versaw, B; Zeng, T; **Hu, X**; Robb, M. J. “Harnessing the Power of Force: Development of Mechanophores for Molecular Release”, *J. Am. Chem. Soc.* **2021**, 143, 21461–21473.

(13) Zeng, T; **Hu, X**; Robb, M. J. “5-Aryloxy Substitution Enables Efficient Mechanically Triggered Release from a Synthetically Accessible Masked 2-Furylcarbinol Mechanophore”, *Chem. Commun.,* **2021**, 57, 11173-11176.

(12) **Hu, X**; Zeng, T; Husic, C. C.; Robb, M. J. “Mechanically Triggered Release of Functionally Diverse Molecular Payloads from Masked 2-Furylcarbinol Derivatives”, *ACS Cent. Sci.* **2021**,7, 1216-1224.

(11) **Hu, X**; Zeng, T; Husic, C. C.; Robb, M. J. “Mechanically Triggered Small Molecule Release from a Masked Furfuryl Carbonate”, *J. Am. Chem. Soc.* **2019**, 141, 15018-15023*.*

(10) Barber, R. W.; McFadden, M. E.; **Hu, X.**; and Robb, M. J. “Mechanochemically Gated Photoswitching: Expanding the Scope of Polymer Mechanochromism”, *Synlett* **2019**, 30, 1725–1732.

(9) **Hu, X.**; McFadden, M. E.; Baber, R. W.; Robb, M. J. “Mechanochemical Regulation of a Photochemical Reaction”, *J. Am. Chem. Soc.* **2018**, 140, 14073–14077.

(8) Feeney M. J.; **Hu, X.**; Srinivasan R.; Van N.; Hunter M.; Georgakoudi I.; Thomas S. W. III “UV and NIR-Responsive Layer-by-Layer Films Containing 6-Bromo-7-hydroxycoumarin Photolabile Groups”, *Langmuir* **2017**, 33, 10877–10885.

(7) **Hu, X.**; Lawrence, J. A.; Mullahoo, J.; Smith, Z. C; Wilson, D. J.; Mace, C. R.; Thomas, S. W. III “Directly Photopatternable Polythiophene as Dual-Tone Photoresist”, *Macromolecules* **2017**, 50, 7258–7267.

(5) **Hu, X.**; Qureishi, Z.; Thomas, S. W. III "Light-Controlled Selective Disruption, Multi-Level Patterning, and Sequential Release with Polyelectrolyte Multilayer Films Incorporating Four Photocleavable Chromophores”, *Chem. Mater.* **2017**, 29, 2951–2960.

(6) Kaner, P.; **Hu, X.**; Thomas, S. W. III, Asatekin, A. “Self-Cleaning Membranes from Comb-Shaped Copolymers with Photoresponsive Side Groups”, *ACS Appl. Mater. Interfaces* **2017***,* 9, 13619–13631.

(4) **Hu, X.**; Feeney, M. J.; McIntosh, E.; Mullahoo, J.; Jia, F.; Xu, Q.; Thomas, S. W. III "Triggered Release of Encapsulated Cargo from Photoresponsive Polyelectrolyte Nanocomplexes", *ACS Appl. Mater. Interfaces* **2016**, 8, 23517–23522.

(3) **Hu, X.**; Macintosh, E; Simon, M. G.; Staii, C.; Thomas, S. W. III "Stimuli-Responsive Free-Standing Layer-By-Layer Films", *Adv. Mater.* **2016**, 28, 715–721.

(2) **Hu, X.**; Shi, J.; Thomas, S. W. III "Photolabile ROMP Gels Using *ortho*-Nitrobenzyl Functional Crosslinkers”, *Polym. Chem.* **2015**, 6, 4966–4971.

(1) Gumbley, P.; **Hu, X.**; Lawrence, J. A., III; Thomas, S. W. III "Photoresponsive Gels Prepared by Ring Opening Metathesis Polymerization”, *Macromol. Rapid Commun.* **2013**, 34, 1838–1843.

 **Patents\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(4) Robb, M. J.; **Hu, X.** “Mechanical Regulation of Photoswitching”. US Patent App. 17/019,107, published March 11, 2021. (Caltech)

(3) Asatekin, A.; Thomas, S. W. III; Kaner, P.; **Hu, X.** “Two-layer photo-responsive membranes”, US Patent Number 10,603,637, issued March 31, 2020. (Tufts)

(2) **Hu, X.**; Zhu, S.; Robisson, A.; Qu, M; Ossia, S. “Methods for Ring-Opening Metathesis Polymerization (ROMP) for In-Situ Formation of High Glass Transition Temperature (Tg) Polymers”, US Patent Appl. 16/335,409, published January 16, 2020. (Schlumberger)

(1) Robb, M. J.; **Hu, X.** “Method for Controlled Release Using Mechanical Force”. Provisional US Patent Appl. CIT 8330-P, filed August 12, 2019. (Caltech)

 **Presentations \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(**Invited**) “Molecular Design Strategies for Functional Organic Materials.” Department of Chemistry and Chemical Biology, University of California, Merced, CA. January 2020.

(**Invited**) “Molecular Design Strategies for Functional Organic Materials.” Department of Chemistry, State University of New York, Buffalo, NY. December 2019.

(**Invited**) “Photochemical Control of Polymers.” ACS Eastman Chemical Student Award in Applied Polymer Science Symposium, 256th ACS National Meeting, Boston, MA. August 2018.

“Mechanochemical Regulation of Reactivities – from Mechanically Gated Photoswitch to Triggered Release.” Inorganic-Organometallics Seminar Series, California Institute of Technology, Pasadena, CA. November 2020.

“Molecular Design Strategies for Mechanochemically Active Polymers”. 258th ACS National Meeting, San Diego, CA. August 2019. (Poster)

 “Mechanically Gated Reactivities in Polymers.” 258th ACS National Meeting, San Diego, CA. August 2019.

 “Gated Photoswitching Using Polymer Mechanochemistry.” Gordon Research Conference Polymers, South Hadley, MA. June 2019.

“Mechanochemical Regulation of a Photochemical Reaction.” Department of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA. September 2018.

 “Reversible Photochemical Control over Contact Electrification of Polymer Coatings.” 253rd ACS National Meeting, San Francisco, CA. April 2017.

“Programmable Release with Photo-Disruptable Layer-By-Layer Polyelectrolyte Multilayers Incorporating Four Photocleavable Chromophores.” 41st ACS Northeastern Section Regional Meeting, Binghamton, NY. October 2016.

 “Triple Responsive Layer-By-Layer Films.” 250th ACS National Meeting, Boston, MA. August 2015.

 **Teaching and Mentoring­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

2022 Fall CHE 400/600 Selected Topics – Polymer Chemistry and Polymeric Drug Delivery Systems

 **Service Activities­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_**

2015–Present Member, American Chemical Society

Reviewer for *J. Am. Chem. Soc.*, *ACS Macro Lett., Langmuir, Chem. Sci., and Polym. Chem.*

Participation in outreach and education programs:

Tufts–Medford High School Annual Science and Engineering Fairs (Mentor and Reviewer, 2015–2016), Tufts STEM Open House (2015), ACS Northeastern Section STEM Journey (Mentor, 2016), and Massachusetts State Region IV Science and Engineering Fair (Reviewer, 2017).