

William Mike Gramlich, Ph. D.

Assistant Professor of Chemistry

Department of Chemistry
University of Maine, 171 Aubert Hall
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Education

Ph.D. in Chemical Engineering, University of Minnesota **2012**
Thesis Advisor: Marc A. Hillmyer

B.S. in Chemical Engineering, University of Maine **2006**
Thesis Advisors: David J. Neivandt and Douglas J. Gardner

Professional Positions

University of Maine – Department of Chemistry **2013 – present**
Assistant Professor of Chemistry 2013 – present
Cooperating Faculty, Advanced Structures and Composites Center 2013 – present
Graduate Faculty, Graduate School of Biomedical Sciences and Engineering 2013 – present

University of Pennsylvania – Department of Bioengineering **2012 – 2013**
Postdoctoral Research Fellow, Research advisor: Jason A. Burdick

Professional Activities

Special Recognition and Awards

University of Maine Pretenure Research and Creative Activity Fellowship (\$25,000) 2014 – 2015
Gramlich *et al.* *Biomaterials* **2013** was featured as an Editor's Choice Article in Science 2013

University of Maine

ACS Student Chapter Faculty Advisor 2014 – present
University of Maine Center for Undergraduate Research Fellow 2014 – 2016
Graduate admissions committee – Graduate School of Biomedical Sciences and Engineering 2013 – 2017
Graduate admissions committee – Department of Chemistry 2014 – present
Grad board representative – Graduate School of Biomedical Sciences and Engineering Fall 2013
Member of University of Maine Paper Surface Science Program 2013 – present

Professional Organizations

Member American Chemical Society, Member Society for Biomaterials

Publications

17) Ghasemi, S.; Tajvidi, M.; Bousfield, D. W.; Gardner, D. J.; Gramlich, W. M. "Dry-Spun Neat Cellulose Nanofibril Filaments: Influence of Drying Temperature and Nanofibril Structure on Filament Properties." *Polymers* **2017**, *9*, 392.

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- 16) Purington, E.; Blakely, A.; Bousfield, D.; Gramlich, W. M. "Visualization of latex and starch in paper coatings by tagging with fluorescent dyes." *Nordic Pulp and Paper Research Journal* **2017**, *32*, 395-406.
- 15) Dadoo, N.; Landry, S. B.; Bomar, J. D.; Gramlich, W. M. "Synthesis and spatiotemporal modification of biocompatible and stimuli responsive carboxymethyl cellulose hydrogels using thiol-norbornene chemistry." *Macromolecular Bioscience* **2017**, *17*, 1700107.
- 14) Wang, L.; Gramlich, W. M.; Gardner, D. J. "Improving the Impact Strength of Poly(lactic acid) (PLA) in Fused Layer Modeling (FLM)." *Polymer* **2017**, *114*, 242-248.
- 13) Vithanage, A. E.; Chowdhury, E.; Alejo, L. D.; Pomeroy, P. C.; DeSisto, W. J.; Frederick, B. G.; Gramlich, W. M. "Renewably sourced phenolic resins from lignin bio-oil." *Journal of Applied Polymer Science* **2017**, *134*, 44827.
- 12) Dadoo, N.; Gramlich, W. M. "Spatiotemporal modification of stimuli responsive hyaluronic acid/poly(N-isopropylacrylamide) hydrogels." *ACS Biomaterials Science and Engineering* **2016**, *2*, 1341-1350.
- 11) Wade, R. J.; Bassin, E. J.; Gramlich, W. M.; Burdick, J. A. "Nanofibrous hydrogels with spatially patterned biochemical signals to control cell behavior." *Advanced Materials* **2015**, *27*, 1356-1362.
- 10) Gramlich, W.M. "Toughening polylactide with phase-separating complex copolymer architectures." *Macromolecular Chemistry and Physics* **2015**, *216*, 145-155.
- 9) Kerstetter, J. L.; Gramlich, W.M. "Nanometer-scale Self-Assembly of Amphiphilic Copolymers to Control and Prevent Biofouling." *Journal of Materials Chemistry B* **2014**, *2*, 8043-8052.
- 8) Gramlich, W.M.; Rai, R.; Holloway, J. L.; Burdick, J. A. "Transdermal gelation of methacrylated macromers with near-infrared light and gold nanorods." *Nanotechnology* **2014**, *25*, 014004.
- 7) Gramlich, W. M.; Kim, I. L.; Burdick, J. A. "Synthesis and orthogonal photopatterning of hyaluronic acid hydrogels with thiol-norbornene chemistry." *Biomaterials* **2013**, *34*, 9803-9811. **(Featured as an Editor's Choice Article in Science, 342, 165.)**
- 6) Moughton, A. O.; Sagawa, T.; Gramlich, W. M.; Seo, M.; Lodge, T. P.; Hillmyer, M. A. "Synthesis of block polymer *mikto*brushes." *Polymer Chemistry* **2013**, *4*, 166-173.
- 5) Gramlich, W. M.; Theryo, G.; Hillmyer, M. A. "Copolymerization of isoprene and hydroxyl containing monomers by controlled radical and emulsion methods." *Polymer Chemistry* **2012**, *3*, 1510-1516.
- 4) Gramlich, W. M.; Hillmyer, M. A. "Catalytic synthesis and post polymerization functionalization of conjugated polyisoprene." *Polymer Chemistry* **2011**, *2*, 2062-2067.
- 3) Gramlich, W. M.; Robertson, M. L.; Hillmyer, M. A. "Reactive compatibilization of poly(L-lactide) and conjugated soybean oil." *Macromolecules* **2010**, *43*, 2313-2321.
- 2) Robertson, M. L.; Chang, K.; Gramlich, W. M.; Hillmyer, M. A. "Toughening of polylactide with polymerized soybean oil." *Macromolecules* **2010**, *43*, 1807-1814.
- 1) Gramlich, W. M.; Gardner, D. J.; Neivandt, D. J. "Surface treatments of wood-plastic composites (WPCs) to improve adhesion." *Journal of Adhesion Science and Technology* **2006**, *20*, 1873-1887.

Invited Presentations

- 7) **William M. Gramlich** "Spatiotemporally Modifiable Hydrogels from Cellulose" BioEngineering 2017: BioMEMS, 3D-Bioprinting, Tissue Engineering & Synthetic Biology Conference, Boston, MA. March 17, 2017.

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- 6) **William M. Gramlich** "Next Generation Hydrogels from Renewable Sources for Biomedical Applications" Colby College, Waterville, ME. September 30, 2016.
- 5) Nayereh Dadoo, Samuel Landry, **William M. Gramlich** "Green methods to functionalize cellulose derivatives to create robust hydrogels" American Chemical Society Fall National Meeting, Philadelphia, PA. August 22, 2016
- 4) Nayereh Dadoo, **William M. Gramlich** "Modular assembly of spatiotemporally patternable, stimuli responsive hydrogels" American Chemical Society Spring National Meeting, San Diego, CA. March 14, 2016
- 3) **William M. Gramlich** "Creating hierarchically structured sustainable materials using modular synthesis strategies" Oak Ridge National Laboratory Center for Nanophase Materials Sciences User Meeting, Oak Ridge, TN. September 02, 2015
- 2) **William M. Gramlich** "Synthesis of spatially and temporally controlled hydrogels" University of Maine Department of Chemical and Biological Engineering Seminar Series, Orono, ME. January 24, 2014.
- 1) **William M. Gramlich** "Hierarchical patterning of polymers towards creating biomimetic surfaces" University of Maine Physics Colloquium, Orono, ME. November 22, 2013