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Curriculum Vitae

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EDUCATION

Ph.D., City University of New York, 2003
Major: Chemistry (Polymer)
Dissertation: Combination of Anionic, Ring-Opening Metathesis, Living Radical Polymerization for Novel Nanostructured Polymer Synthesis

M. S., Beijing University of Chemical Technology, 1996
Major: Polymer Materials
Thesis: Selective Anionic Polymerization of Allyl Methacrylate

B.S., Hefei University of Technology, 1993
Major: Polymer Materials

EMPLOYMENT HISTORY

Associate Professor, UB Department of Chemical and Biological Engineering, 2013-present
Assistant Professor, UB Department of Chemical and Biological Engineering, 2007-2013
Postdoctoral Research Associate, Washington University at St. Louis, 2003-07

PUBLICATIONS

Referred Journal Papers

1. M. A. Mohamed, A. Fallahi, A. M. A. El-sokkary, S. Salehi, M. A. Akl, A. Jafari, A. Tamayol, H. Fenniri, A. Khademhosseini, S. T. Andreadis, C. Cheng, Stimuli-Responsive Hydrogels for Manipulation of Cell Microenvironment: From Chemistry to Biofabrication Technology, *Progress in Polymer Science*, **2019**, *98*, 101147.
2. J. Liu, S. Zhang, D.-e. Jiang, C. M. Doherty, A. J. Hill, C. Cheng, H. B. Park, H. Lin, Highly Polar but Amorphous Polymers with Robust Membrane CO_2/N_2 Separation Performance, Joule, **2019**, *3*, 1881-1894.
3. H. Sun, F. M. Haque, Y. Zhang, A. Commisso, M. A. Mohamed, M. Tsianou, H. Cui, S. M. Grayson, C. Cheng, Linear-Dendritic Alternating Copolymers, *Angewandte Chemie International Edition*, **2019**, *58*, 10572-10576.
4. H. Sun, L. Yan, M. Y. Z. Chang, K. A. Carter, R. Zhang, L. Slyker, J. F. Lovell, Y. Wu, C. Cheng, A Multifunctional Biodegradable Brush Polymer-Drug Conjugate for Paclitaxel

/Gemcitabine Co-Delivery and Tumor Imaging, *Nanoscale Advances*, **2019**, *1*, 2761-2771.
5. M. A. F. Afzal, M. Haghighatlari, S. P. Ganesh, C. Cheng, J. Hachmann, Accelerated Discovery of High-Refractive-Index Polyimides via First-Principles Molecular Modeling, Virtual High-Throughput Screening, and Data Mining, *Journal of Physical Chemistry C*, **2019**, *123*, 14610-14618.
6. M. Keskar, C. Sabatini, C. Cheng, M. T. Swihart, Synthesis and Characterization of Silver Nanoparticle-Loaded Amorphous Calcium Phosphate Microspheres for Dental Applications, *Nanoscale Advances*, **2019**, *1*, 627-635.
7. H. Sun, L. Yan, K. A. Carter, J. Zhang, J. Caserto, J. F. Lovell, Y. Wu, C. Cheng, Zwitterionic Crosslinked Biodegradable Nanocapsules for Cancer Imaging, *Langmuir*, **2019**, *35*, 1440-1449.
8. B. Sun, H. Sun, Y. Li, H. Cui, C. Cheng, A Systematic Synthetic Study of Polyelectrolyte Nanocapsules via Crystallized Miniemulsion Nanodroplets, *Engineering Science*, **2019**, *5*, 39-45.
9. P. Chakraborty, G. L. Zhao, C. Zhou, C. Cheng, D. D. L. Chung, Decreasing the Shear Stress-induced In-plane Molecular Alignment by Unprecedented Stereolithographic Delay in Three-dimensional Printing, *Journal of Materials Science*, **2019**, *54*, 3586-3599.
10. A. Jafari, H. Sun, B. Sun, M. A. Mohamed, H. Cui, C. Cheng, Layer-by-layer Preparation of Polyelectrolyte Multilayer Nanocapsules via Crystallized Miniemulsions, *Chemical Communications*, **2019**, 55, 1267-1270.
11. R. Zhang, M. M. Jones, H. Moussa, M. Keskar, N. Huo, Z. Zhang, M. B. Visser, C. Sabatini, M. T. Swihart, C. Cheng, Polymer-Antibiotic Conjugate as Antibacterial Additive in Dental Resin, *Biomaterials Science*, **2019**, *7*, 287-295.
12. M. A. F. Afzal, C. Cheng, J. Hachmann, Combining first-principles and data modeling for the accurate prediction of the refractive index of organic polymers, *J. Chem. Phys.*, **2018**, *148*, 241712/1-241712/8.
13. H. Guo, P. Liu, H. Li, C. Cheng, Y. Gao, Responsive Emulsions Stabilized by Amphiphilic Supramolecular Graft Copolymers Formed in Situ at the Oil-Water Interface, *Langmuir*, **2018**, *34*, 5750-5758.
14. Membrane Surface Modification Using Thiol-Containing Zwitterionic Polymers via Bioadhesive Polydopamine, N. Shahkaramipour, C. K. Lai, S. R. Venna, H. Sun, C. Cheng, H. Lin, *Ind. Eng. Chem. Res.*, **2018**, *57*, 2336-2345.
15. T. Zeng, D. Yang, H. Li, C. Cheng, Y. Gao, The fabrication of amphiphilic double dynamers for responsive Pickering emulsifiers, *Polym. Chem.*, **2018**, *9*, 627-636.
16. H. Sun, M. Y. Z. Chang, W.-I Cheng, Q. Wang, A. Commisso, M. Capeling, Y. Wu, C. Cheng, Biodegradable Zwitterionic Polymer and Its Conjugate with Paclitaxel for Sustained Drug Delivery, *Acta Biomaterialia*, **2017**, *64*, 290-300.
17. N. Shahkaramipour, S. N. Ramanan, D. Fister, E. Park, S. R. Venna, H. Sun, C. Cheng, H. Lin, Facile Grafting of Zwitterions onto the Membrane Surface To Enhance Antifouling Properties for Wastewater Reuse, *Ind. Eng. Chem. Res.*, **2017**, *56*, 9202-9212.
18. H. Sun, I. Yarovoy, M. Capeling, C. Cheng, Polymers in the Co-delivery of siRNA and Anticancer Drugs for the Treatment of Drug-resistant Cancers, *Top. Curr. Chem.*, **2017**, *375*, 24.
19. R. Aalinkeel, B. Nair, C.-K. Chen, S. D. Mahajan, J. L. Reynolds, H. Zhang, H. Sun, D. E. Sykes, K. C. Chadha, S. G. Turowski, K. D. Bothwell, M. Seshadri, C. Cheng, S. A. Schwartz, Nanotherapy Silencing the Interleukin-8 Gene Produces Regression of Prostate Cancer by Inhibition of Angiogenesis, *Immunology*, **2016**, *148*, 387-406.

20. S. Shah, J. Liu, S. Ng, S. Luo, R. Guo, C. Cheng, H. Lin, Transport Properties of Small Molecules in Zwitterionic Polymers, *J. Polym. Sci., Part B: Polym. Phys.*, **2016**, *54*, 1924-1934.
21. H. T. Sun, C. K. Chen, H. G. Cui, C. Cheng, Crosslinked Polymer Nanocapsules, *Polym. Int.*, **2016**, *65*, 351-361.
22. H. Y. Huang, R. Hernandez, J. M. Geng, H. T. Sun, W. T. Song, F. Chen, S. A. Graves, R. J. Nickles, C. Cheng, W. B. Cai, J. F. Lovell, A Porphyrin-PEG polymer with Rapid Renal Clearance, *Biomaterials*, **2016**, *76*, 25-32.
23. A. M. Bodratti, Z. He, M. Tsianou, C. Cheng, P. Alexandridis, Product Design Applied to Formulated Products: A Course on Their Design and Development that Integrates Knowledge of Materials Chemistry,(Nano) Structure and Functional Properties, *International Journal of Quality Assurance in Engineering and Technology Education*, **2015**, *4(3)*, 21-43.
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25. C. H. Jones, M. Chen, A. Gollakota, A. Ravikrishnan, G. Zhang, S. Lin, M. Tan, C. Cheng, H. Lin, and B. A. Pfeifer, Structure–Function Assessment of Mannosylated Poly(β-amino esters) upon Targeted Antigen Presenting Cell Gene Delivery, *Biomacromolecules*, **2015**, *16*, 1534–1541.
26. C. H. Jones, C.-K Chen, M. Cheng, A. Ravikrishnan, H. Zhang, A. Gollakota, T. Chen, C. Cheng, B. A. Pfeifer, PEGylated Cationic Polylactides for Hybrid Bio-Synthetic Gene Delivery, *Mol. Pharmaceutics*, **2015**, *12*, 846–856.
27. Y. Yu, C.-K. Chen, W.-C. Law, P. N. Prasad, C. Cheng, Degradable Brush Polymer-Drug Conjugate for pH-Responsive Release of Doxorubicin, *Polym. Chem.*, **2015**, *6*, 953 - 961.
28. Y. Li, L. Christian-Tabak, V. L. F. Fuan, J. Zou, C. Cheng, Crosslinking-Induced Morphology Change of Latex Nanoparticles: A Study of RAFT-Mediated Polymerization in Aqueous Dispersed Media Using Amphiphilic Double-Brush Copolymers as Reactive Surfactants, *J Polym Sci., Part A: Polym. Chem.*, **2014**, *52*, 3250-3259.
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31. C.-K. Chen, Q. Wang, C. H. Jones, Y. Yu, H. Zhang, W. C. Law, C. K. Lai, Q. H. Zeng, P. N. Prasad, B. A. Pfeifer, C. Cheng. Synthesis of pH-Responsive Chitosan Nanocapsules for the Controlled Delivery of Doxorubicin, *Langmuir*, **2014**, *30*, 4111-4119.
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36. C. H Jones, S. Rane, E. Patt, A. Ravikrishnan, C.-K. Chen, C. Cheng, B. A. Pfeifer, Polymyxin B Treatment Improves Bactofection Efficacy and Reduces Cytotoxicity, *Molecular Pharmaceutics*, **2013**, *10*, 4301-4308.
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44. Y. Li, E. Themistou, B. P. Das, L. Christian-Tabak, J. Zou, M. Tsianou, C. Cheng, Polyelectrolyte Nanocages via Crystallized Miniemulsion Droplets, *Chemical Communication*, **2011**, *47*, 11697-11699.
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51. W. Du, Y. Li, A. M. Nyström, C. Cheng, K. L. Wooley, Synthesis, Characterization, and Aqueous Self-Assembly of Amphiphilic Poly(ethylene oxide)-Functionalized Hyperbranched Fluoropolymers, *Journal of Polymer Science, Part A: Polymer Chemistry*, **2010**, *48*, 3487-3496.
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65. G. Sun, C. Cheng, K. L. Wooley, Reversible Addition Fragmentation Chain Transfer (RAFT) Polymerization of 4-Vinylbenzaldehyde, *Macromolecules*, **2007**, *40*, 793-795.
66. C. Cheng, K. Qi, E. Khoshdel, K. L. Wooley, Tandem Synthesis of Core-Shell Brush

Copolymers and their Transformation to Peripherally Cross-Linked and Hollowed Nanostructures, *Journal of the American Chemical Society*, **2006**, *128*, 6808-6809.

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Book Chapters

1. A. M. Bodratti, Z. He, M. Tsianou, C. Cheng, P. Alexandridis, Product Design Applied to Formulated Products: A Course on Their Design and Development that Integrates Knowledge of Materials Chemistry, (Nano)Structure and Functional Properties, book chapter in *Materials Science and Engineering: Concepts, Methodologies, Tools, and Applications*, IGI Global, **2017**, 519-542.
2. Y. Yu, H. Sun, C. Cheng, Brush Polymer-Based Nanostructures for Drug Delivery, book chapter in *Therapeutic Nanostructures*, Ed. A. Grumezescu, Elsevier, **2017**, 271-298.
3. S. D. Mahajan, Y. Yu, R. Aalinkeel, J. L. Reynolds, B. Nair, M. J. Mammen, T. A. Ignatowski, C. Cheng, S. A. Schwartz, Biodegradable Nanoparticle-Based Antiretroviral Therapy across the Blood-Brain Barrier, book chapter in *Handbook of Clinical*

Nanomedicine: Nanoparticles, Imaging, Therapy and Clinical Applications, Eds. R. Bawa, G. F. Audette, I. Rubinstein, Pan Stanford, **2016**, 1379-1406.

4. A. Bodratti, C. Cheng, P. Alexandridis, Bridging Materials Properties and Processes - An Innovative Product Design Capstone Course, book chapter in *Handbook of Research on Recent Developments in Materials Science and Corrosion Engineering Education*, Ed. Hwee Ling Lim, IGI Global, **2015**, 1-20.
5. Z. Chen, C. Cheng, D. S. Germack, P. Gopalan, B. A. Van Horn, S. Venkataraman and K. L. Wooley, Complex Functional Macromolecules, book chapter in Macromolecular Engineering: From precise macromolecular synthesis to macroscopic materials properties and applications, volume 2: Elements of Macromolecular Structural Control, Eds. K. Matyjaszewski, Y. Gnanou, L. Leibler, Wiley-VCH, **2007**, 1341-1386.