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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. 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*, resubmitted.
2. 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.
3. 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.
4. 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.
5. 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.
6. H. T. Sun, C. K. Chen, H. G. Cui, C. Cheng, Crosslinked Polymer Nanocapsules, *Polym. Int.*, **2016**, *65*, 351-361.
7. 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.
8. 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.
9. J. Zou, Y. Yu, Y. Li, W. Ji, C.-K. Chen, W.-C. Law, P. N. Prasad and C. Cheng, Well-Defined Diblock Brush Polymer–Drug Conjugates for Sustained Delivery of Paclitaxel, *Biomater. Sci.*, **2015**, *3*, 1078-1084.
10. 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.
11. 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.
12. 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.
13. 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.
14. Y. Yu, J. Zou, C. Cheng. Synthesis and Biomedical Applications of Functional Poly(α-hydroxyl acid)s, *Polym. Chem.* **2014**, *5*, 5854-5872.
15. G. M. Lin, C. B. Yang, R. Hu, C.-K. Chen, W. C. Law, T. Anderson, B. T. Zhang, Q. T. Nguyen, H. T. Toh, H. S. Yoon, C. Cheng, K. T. Yong. Interleukin-8 Gene Silencing on Pancreatic Cancer Cells using Biodegradable Polymer Nanoplexes, *Biomater. Sci.* **2014**, *2*, 1007-1015.
16. 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.
17. Y. Yu, C.-K. Chen, W.-C. Law, E. Weinheimer, S. Sengupta, P. N. Prasad, C. Cheng. Polylactide-*graft*-Doxorubicin Nanoparticles with Precisely Controlled Drug Loading for pH-Triggered Drug Delivery, *Biomacromolecules*, **2014**, *15*, 524-532.
18. Y. Fan, M. Hsiung, C. Cheng, E. S. Tzanakakis, Facile Engineering of Xeno-Free Microcarriers for the Scalable Cultivation of Human Pluripotent Stem Cells in Stirred Suspension, *Tissue Eng. Part A*, **2014**, *20*, 588-599.
19. C.-K. Chen, W.-C. Law, R. Aalinkeel, B. Nair, Y. Yu, S. D. Mahajan, J. L. Reynolds, J. Wu, Y. Li, C. K. Lai, E. S. Tzanakakis, S. A. Schwartz, P. N. Prasad, C. Cheng, Biodegradable Cationic Polymer Nanocapsules for Bypassing Multidrug Resistance and Enabling Drug-

Gene Co-Delivery to Cancer Cells, *Nanoscale*, **2014**, *6*, 1567-1572.
20. C.-K. Chen, C. H. Jones, P. Mistriotis, Y. Yu, X. Ma, A. Ravikrishnan, M. Jiang, S. T. Andreadis, B. A. Pfeifer, C. Cheng, Poly(ethylene glycol)-*block*-cationic polylactide nanocomplexes of differing charge density for gene delivery, *Biomaterials*, **2013**, *34*, 9688-9699.
21. 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.
22. G. Lin, R. Hu, W.-C. Law, C.-K. Chen, Y. Wang, H. L. Chin, Q. T. Nguyen, C. K. Lai, H. S. Yoon, X. Wang, C. Cheng, K.-T. Yong, Biodegradable Nanocapsules as siRNA Carriers for Mutant K-Ras Gene Silencing of Human Pancreatic Carcinoma Cells, *Small*, **2013**, *9*, 2757-2763.
23. C. H. Jones, C.-K Chen, M. Jiang, L. Fang, C. Cheng, B. A. Pfeifer, Synthesis of Cationic Polylactides with Tunable Charge Densities as Nanocarriers for Highly Effective Gene Delivery, *Molecular Pharmaceutics*, **2013**, *10*, 4301-4308.
24. Y. Yu, C.-K Chen, W.-C. Law, J. W. Mok, J. Zou, P. N. Prasad, C. Cheng, Well-Defined Degradable Brush Polymer-Drug Conjugates for Sustained Delivery of Paclitaxel, *Molecular Pharmaceutics*, **2013**, *10*, 867-874.
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26. Y. Li, J. Zou, B. P. Das, M. Tsianou, C. Cheng, Well-Defined Amphiphilic Double-Brush Copolymers and Their Performance as Emulsion Surfactants, *Macromolecules*, **2012**, *45*, 4623-4629.
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Linking, *Australian Journal of Chemistry*, **2010**, *63*, 1559-1563.
35. Z. Li, J. Ma, C. Cheng, K. Zheng, K. L. Wooley, Synthesis of Hetero-Grafted Amphiphilic Diblock Molecular Brushes and Their Self Assembly in Aqueous Medium, *Macromolecules*, **2010**, *43*, 1182-1184.
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38. J. Ma, C. Cheng, K. L. Wooley, Cycloalkenyl-Functionalized Polymers and Block Copolymers: Syntheses via Selective RAFT Polymerizations and Demonstration of Their Versatile Reactivity, *Macromolecules*, **2009**, *42*, 1565-1573.
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42. W. Du, A. M. Nyström, L. Zhang, K. T. Powell, Y. Li, C. Cheng, S. A. Wickline, K. L. Wooley, Amphiphilic Hyperbranched Fluoropolymers as Nanoscopic ^{19}F Magnetic Resonance Imaging Agent Assemblies, *Biomacromolecules*, **2008**, *9*, 2826-2833.
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44. C. Cheng, K. T. Powell, E. Khoshdel, K. L. Wooley, Polydimethylsiloxane (PDMS)-Grafted Fluorocopolymers by a "Grafting through" Strategy Based on Atom Transfer Radical (Co)Polymerization", *Macromolecules*, **2007**, *40*, 7195-7207.
45. C. Cheng, G. Sun, E. Khoshdel, K. L. Wooley, Well-Defined Vinyl Ketone-Based Polymers by Reversible Addition-Fragmentation Chain Transfer (RAFT) Polymerization, *Journal of the American Chemical Society*, **2007**, *129*, 10086-10087.
46. C. Cheng, K. Qi, D. G. Germack, E. Khoshdel, K. L. Wooley, Synthesis of Cylindrical Core-Crosslinked Nanoparticles with Shape and Size Control *via* Core-Shell Brush Copolymer Templates, *Advanced Materials*, **2007**, *19*, 2830-2835.
47. J. Bartels, C. Cheng, K. T. Powell, J.-Q. Xu, K. L. Wooley, Hyperbranched Fluoropolymers and their Hybridization into Complex Amphiphilic Crosslinked Copolymer Networks, *Macromolecular Chemistry and Physics*, **2007**, *208*, 1676-1687.
48. K. T. Powell, C. Cheng, K. L. Wooley, Complex Amphiphilic Hyperbranched Fluoropolymers by Atom Transfer Radical Self-Condensing Vinyl (Co)Polymerization, *Macromolecules*, **2007**, *40*, 4509-4515.
49. C. Cheng, E. Khoshdel, K. L. Wooley, One-Pot Tandem Synthesis of a Core-Shell Brush Copolymer from Small Molecule Reactants by Ring-Opening Metathesis and Reversible Addition-Fragmentation Chain Transfer (Co)Polymerizations, *Macromolecules*, **2007**, *40*, 2289-2292.
50. G. Sun, C. Cheng, K. L. Wooley, Reversible Addition Fragmentation Chain Transfer (RAFT) Polymerization of 4-Vinylbenzaldehyde, *Macromolecules*, **2007**, *40*, 793-795.

51. 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.
52. C. Cheng, E. Khoshdel, K. L. Wooley, Facile One-Pot Synthesis of Brush Polymers through Tandem Catalysis using Grubbs' Catalyst for both Ring-Opening Metathesis and Atom Transfer Radical Polymerizations, *Nano Letters*, **2006**, *6*, 1741-1746.
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54. C. Cheng, E. Khoshdel, K. L. Wooley, ATRP from a Norbornenyl-Functionalized Initiator: Balancing of Complementary Reactivity for the Preparation of α-Norbornenyl Macromonomers/ω-Haloalkyl Macroinitiators, *Macromolecules*, **2005**, *38*, 9455-9465.
55. C. Cheng, K. L. Wooley, E. Khoshdel, Hyperbranched Fluoropolymers by Atom Transfer Radical Self-Condensing Radical Vinyl Copolymerization, *Journal of Polymer Science, Part A: Polymer Chemistry*, **2005**, *43*, 4754-4770.
56. K. T. Powell, C. Cheng, C. S. Gudipati, K. L. Wooley, Design, Synthesis, and Characterization of Linear Fluorinated Poly(benzyl ether)s: a Comparison Study with Isomeric Hyperbranched Fluoropolymers, *Journal of Materials Chemistry*, **2005**, *15*, 5128-5135.
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59. H. Zhang, Y. Hou, C. Cheng, Preparation and Characterization of Block Copolymers Consisting of Allyl and Methyl Methacrylates, *Chinese Journal of Polymeric Materials Science and Engineering*, **1997**, *13*, 22-26.
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61. H. Zhang, Y. Hou, C. Cheng, Preparation and Characterization of Block Copolymers of 2,3-Epoxypropyl Methacrylate and Methyl Methacrylate", *Acta Polymer Sinica*, **1996**, *5*, 619-622.
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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.