

## Biography

**Chun Wang** received his Bachelor's degree in Chemistry from Nankai University and M.S and Ph.D. in Bioengineering under Jindřich Kopeček at the University of Utah. He was an NIH Postdoctoral Fellow with Robert Langer at Massachusetts Institute of Technology before joining the faculty of the University of Minnesota, where he currently is an Associate Professor and Director of Undergraduate Studies in the Department of Biomedical Engineering with courtesy appointments in Chemical Engineering and Material Science and Pharmaceutics. He was the recipient of a National Science Foundation CAREER Award, Wallace H. Coulter Foundation Early Career Translational Research Award, and McKnight Land-Grant Professorship. He served on the editorial board of the *Journal of Controlled Release* (2006-2016) and has served on the editorial board of *Advanced Drug Delivery Reviews* since 2010. He has published 80 peer-reviewed research articles and reviews and has given over 110 invited talks. His research interest is in polymer-based therapeutic biomaterials with applications in controlled drug delivery, immunotherapy, medical devices, and regenerative medicine.

## **Polymers for Drug Delivery: Some Thoughts on the History and Future Opportunities**

Chun Wang, Ph.D.

*Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN 55455, USA. [wangx504@umn.edu](mailto:wangx504@umn.edu)*

For the basic sciences of polymer chemistry and physics, an important area of application is drug delivery. The formulation and demonstration of some of the foundational concepts in this field appeared around the middle of the last century. One such concept is the “polymeric drug carrier”, where drug molecules are conjugated, often through covalent bonds, to macromolecules that maintain colloidal stability in aqueous environment. Another is the notion of “controlled drug release from polymers”, where drug particles are trapped physically in solid polymers and then released through solvent-activated diffusion. Over decades these concepts evolved, cross-pollinated, and absorbed new discoveries in biology and medicine, giving rise to a multidisciplinary research landscape with enormous impact. The first part of this talk is a brief reflection on the intellectual origins of some of the prevailing paradigms of today. The second part is to illustrate, with examples, three future opportunities for innovative polymers: [1] delivering “difficult” drugs; [2] “liquid polymers” (or polymer melt); [3] polymers as drugs.

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