Lu, Hua PhD.

Assistant Professor, College of Chemistry and Molecular Engineering, Peking University
Principal Investigator, Center for Soft Matter Science and Engineering, Peking University
Research Area: Polymer Chemistry and Materials, Biomedical Engineering
Phone: TBA; Email: chemhualu@pku.edu.cn

Education and Training

07/2011 – 05/2014	Postdoctoral fellow, The Scripps Research Institute, La Jolla, USA
	Research experience: Develop various site-specific antibody-conjugates and techniques for targeted cancer therapy; Mentor: Prof. Peter G. Schultz,
08/2006 – 05/2011	Ph.D., Department of Materials Science and Engineering, University of Illinois at Urbana–Champaign, Champaign, USA
	Research experience: Develop synthetic methodology and polypeptides materials for biological applications; Advisor: Prof. Jianjun Cheng,
09/2002 - 07/2006	B.S., College of Chemistry and Molecular Engineering, Peking University, Beijing, China

Professional Experiences

02/2014 –	Assistant Professor, College of Chemistry and Molecular Engineering, Peking University;
02/2014 –	Principal Investigator, Center for Soft Matter Science and Engineering, Peking University

Publications

[23] Nan Zheng, Lichen Yin, Ziyuan Song, Liang Ma, Haoyu Tang, Nathan P. Gabrielson, **Hua Lu**, and Jianjun Cheng*, “Maximizing gene delivery efficiencies of cationic helical polypeptides via balanced membrane penetration and cellular targeting”, *Biomaterials*, **2014**, *35*, 1302-1314

[22] **Hua Lu***, Jing Wang, Ziyuan Song, Lichen Yin, Yanfeng Zhang, Haoyu Tang, Chunlai Tu, Yao Lin*and Jianjun Cheng*, " Recent Advances in Amino Acid *N*-Carboxyanhydrides and Synthetic Polypeptides: Chemistry, Self-assembly and Biological Applications", *Chem. Comm.* **2014**, *50*, 139-155.

[21] **Hua Lu**, Danling Wang, Stephanie Kazane, Tsotne Javahishvili, Feng Tian, Frank Song, Aaron Sellers, Barney Barnett and Peter G. Schultz*, "Site-specific Antibody-polymer Conjugates for siRNA Delivery ", *J. Am. Chem. Soc.,* 2013, 135, 13885–13891

[20] Yanfeng Zhang, Qian Yin, **Hua Lu**, and Honwgwei Xia, Yao Lin Jianjun Cheng*, “PEG-Polypeptide Dual Brush Block Copolymers: Synthesis and Application in Nanoparticle Surface PEGylation”, *ACS Macro. Lett.*, **2013**, *2*, 809-813

[19] Lichen Yin, Haoyu Tang, Kyung Kim, Nan Zheng, Ziyuan Song, Nathan Gabrielson, **Hua Lu,** and Jianjun Cheng*, “Light-Responsive Helical Polypeptides Capable of Reducing Toxicity and Unpacking DNA toward Non-Viral Gene Delivery”, *Angew. Cheme. Int. Ed.,* **2013**, *52,* 9182-9186

[18] Jing Wang, Hongwei Xia, Yanfeng Zhang, **Hua Lu**, Ranjan Kamat, Andrey V. Dobrynin, Jianjun Cheng* and Yao Lin*, "Nucleation-Controlled Polymerization of Nanoparticles into Supramolecular Structures", *J. Am. Chem. Soc.*, **2013**, *135,* 11417-11420.
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[17] Jonathan Yen, Yanfeng Zhang, Nathan Gabrielson, Lichen Yin, Linna Guan, Isthier Chaudhury, **Hua Lu**, Fei Wang* and Jianjun Cheng*, "Cationic, helical polypeptide-based gene delivery for IMR-90 fibroblasts and human embryonic stem cell", *Biomater. Sci.*, **2013**, *1*, 719-727

[16] Lichen Yin, Ziyuan Song, Kyung Hoon Kim, Nan Zheng, Haoyu Tang, **Hua Lu**, Nathan Gabrielson, Jianjun Cheng*, "Reconfiguring the architectures of cationic helical polypeptides to control non-viral gene delivery", *Biomaterials*, **2013**, *34*, 2340-2349

[15] Haoyu Tang, Lichen Yin, **Hua Lu**, and Jianjun Cheng*, "Water-Soluble Poly(L-serine)s with Elongated and Charged Side-Chains: Synthesis, Conformations and Cell-Penetrating Properties", *Biomacromolecules*, **2012**, *13*, 2609-2615

[14] Nathan Gabrielson*,* **Hua Lu***,* Lichen Yin, Kyung Hoon Kim and Jianjun Cheng*, "A Cell-Penetrating Helical Polymer for siRNA Delivery to Mammalian Cells ", *Mol. Ther.* **2012**, *20*, 1599-1609

[13] Nathan Gabrielson†*,* **Hua Lu**†*,* Lichen Yin, Dong Li, Fei Wang, and Jianjun Cheng*,"A Reactive Cationic α-Helical Polypeptide Template for Non-Viral Gene Delivery", *Angew. Chem. Int. Ed*. **2012**, *51,* 1143-1147 (†**equal contribution**)
Highlighted by *Chemical and Engineering News*, issue of Dec. 19, 2011;
reported by ScienceDaily, PhysOrg, and EurekAlert! etc.

[12] Kuan-Ju Chen, Li Tang, Mitch Andre Garcia, Hao Wang, **Hua Lu,** Wei-Yu Lin, Shuang Hou, Qian Yin, Clifton K.-F. Shen, Jianjun Cheng* and Hsian-Rong Tseng*, "The therapeutic efficacy of camptothecin-encapsulated supramolecular nanoparticles", *Biomaterials*, **2012**, *33,* 1162-1169

[11] **Hua Lu**, Jing Wang, Yugang Bai, Jason Long, Shiyong Liu, Yao Lin* and Jianjun Cheng*, "Ionic Polypeptides with Unusual Helical Stability", *Nat.Commun.,* **2011**, *2,* 206
reported by NSF, ScienceDaily, PhysOrg, EurekAlert! and ChemistryViews etc.

[10] Jing Wang, **Hua Lu**, Ranjan Kamat , Sai Venkatesh Pingali , Volker S. Urban, Jianjun Cheng* and Yao Lin**,** "Supramolecular Polymerization from Polypeptide-Grafted Comb Polymers", *J. Am. Chem. Soc.* **2011**, 133*,* 12906-12909.
Highlighted by Chemical and Engineering News, issue of Aug. 15, 2011.

[9] Jing Wang, **Hua Lu**, Yuan Ren, Yanfeng Zhang, Martha Morton, Jianjun Cheng* and Yao Lin**,** "Interrupted Helical Structure of Grafted-Polypeptides in Brush-like Macromolecules", *Macromolecules*, **2011**, *44,* 8699-9709

[8] **Hua Lu**, Yugang Bai, Jing Wang, Yao Lin and Jianjun Cheng*, "Controlled Ring-Opening Polymerization of γ-(4-Vinylbenzyl)-L-Glutamate *N*-Carboxyanhydride for the Synthesis of Functional Polypeptides", *Macromolecules*, **2011**, *44,* 6237-6240*;*
Featured as the cover art of Macromolecules, Volume 44, Issue16, August 23, 2011

[7] Yanfeng Zhang**, Hua Lu,** Yao Lin and Jianjun Cheng*, "Water-Soluble Polypeptides with Elongated, Charged Side Chains Adopt Ultrastable Helical Conformations", *Macromolecules*, **2011**, *44,* 6641-6644

[6] Yugang Bai, **Hua Lu**, Ettigounder Ponnusamy, and Jianjun Cheng*, "Synthesis of Hybrid Block Copolymers via Integrated Ring-Opening Metathesis Polymerization and Polymerization of NCA ", *Chem. Comm.* **2011**, *47*, 10830-10832.

[5] **Hua Lu,** Jing Wang, Yao Lin* and Jianjun Cheng*, "One-Pot Synthesis of Brush-Like Polymers via Integrated Ring-Opening Metathesis Polymerization and Polymerization of Amino Acid *N*-Carboxyanhydrides", *J. Am. Chem*. *Soc.* **2009**, *131*, 13582-13583. Highlighted by *Chemical and Engineering News*, issue of Sept. 14, 2009.

[4] **Hua Lu** and Jianjun Cheng*, "*N*-Trimethylsilyl amines for controlled ring-opening polymerization of amino acid *N*-carboxyanhydrides and facile end group functionalization of polypeptides", *J. Am. Chem*. *Soc.* **2008**, *130*, 12562-12563

[3] **Hua Lu** and Jianjun Cheng*, "Hexamethyldisilazane-Mediated Controlled Polymerization of alpha-Amino Acid *N*-Carboxyanhydrideshydrides", *J. Am. Chem*. *Soc.* **2007**, *129*, 14115-14116

[2] Xiaoyu Cao, Hong Zi, Wei Zhang, **Hua Lu**, and Jian Pei*, "Star-shaped and Linear Nanosized Molecules Functionalized with Hexa-peri-hexabenzocoronene: Synthesis and Optical Properties" *J. Org. Chem*. **2005**, *70*, 3645-3653

[1] Xiaoyu Cao, Wenbin Zhang, Jinliang Wang, Xinhua Zhou, **Hua Lu**, and Jian Pei*, "Extended π–Conjugated Dendrimers Based on Truxene" *J. Am. Chem. Soc.* **2003**, *125*, 12430-12431

Patents

[1] Jianjun Cheng and **Hua Lu**, "Stable Helical Ionic Polypeptides", US 61/418,269, WO PCT/US2011/062656, 2011. (TF10060)

Awards and Honors

2013	AkzoNobel Award for Outstanding Graduate Research in Polymer Chemistry, ACS
2012	IUPAC Prize for Young Chemists, Honorable Mention Award
2011-2014	Damon-Runyon Cancer Foundation Postdoctoral Fellowship Award
2011	Racheff-Intel Award (top winner) for Outstanding Graduate Research, MSE@UIUC
2010	Chinese Government Award for Outstanding PHD Students Abroad
2010	Excellence in Graduate Polymer Research Symposium, ACS, San Francisco
2010-2011	Yee Memorial Fellowship from College of Engineering at UIUC
2002-2006	Mingde Fellowship (4 years), Peking University
2002	Gold Medal of 34th International Chemistry Olympiad (IChO)

Conferences, Posters and Presentations

Nov. 2013 Invited oral presentations: Nanjing University, Nanjing; Zhejiang University, Hangzhou; Xiamen Univeisty, Xiamen; University of Science and Technology of China, Hefei.

Oct. 2013 Oral presentation, Damon-Runyon Award Retreat，Bervely, MA, USA

Sept. 2013 Invited oral presentation, 246th ACS National Meeting, Indianapolis, IN, USA

June 2013 Invited Poster, AkzoNobel North America Innovation Conference, Chicago, IL, USA

Dec. 2012 Oral Presentation at the Department of Polymer Science and Engineering, Peking University, Beijing, China

June. 2012 Poster, Gordon Research Conference (GRC), Davidson, NC, USA.

Dec. 2011 Poster, the 11th US-Japan Symposium on Drug Delivery Systems, Maui, HI, USA

Sept. 2011 Poster, 2011 Damon-Runyon Fellow Retreat, San Jose, CA, USA.

May 2011 Oral presentation for Racheff-Intel Award, MSE@UIUC

Jan. 2011 Invited oral presentation for Macromolecular Materials Gordon Research Seminar (GRS) and Poster for Gordon Research Conference (GRC), Ventura, CA, USA

Sept. 2010 Invited oral presentations in China: Institute of Chemistry, Chinese Academy of Sciences, Beijing; University of Science and Technology of China, Hefei; Shanghai Jiao Tong University, Shanghai; Soochow University, Suzhou and Shanghai University, Shanghai.

March 2010 Selected oral presentation in *Excellence in Graduate Polymer Research Symposium*, ACS National Meeting, San Francisco, CA, USA

Aug. 2009 Oral presentation, ACS National Meeting, Washington, D.C. USA

Aug. 2007 Poster, ACS National Meeting, Boston, MA, USA

Teaching, Service and Other Professional Activities

Since 2011 Reviewer for Journals:

Adv. Mater., Macromolecules, ACS Macro Lett., Biomacromolecules, Polym. Chem., Adv. Healthcare Mater., Polymer, Macro. Chem. Phys., Biomaterials Sci., Org. Biomol. Chem., Adv. Funct. Mater., J. Polym. Sci. Part A: Polym. Chem., *Int. J. Nanomedicine*

Jun 2011 Colloquium between Outstanding Students Abroad and Chinese Academy of Science. Beijing, China

2011 Lecture entitled "*Controlled Polymerizations for the Preparation of Biomaterials*" for Prof. Cheng's course MSE474

Aug. 2009 Session Presider for Symposium "Nanoscience in Polymer Chemistry", Division of Polymer Chemistry, ACS National Meeting, Washington, D.C. USA

2009 Grader of course MSE470 "*Design and Use of Biomaterials*"

2009-2011 Lab demonstration and grader for course MSE474 "*Biomaterials and Nanomedicine*"

2007-2010 Mentor of three undergraduate and junior graduate students in Prof. Cheng's lab

July 2007 Lab demonstration for UIUC's Discover Engineering program