Chi-How Peng, Ph.D. Curriculum Vitae

Professor of Chemistry

Department of Chemistry
National Taiwan University
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Education & Training

2009-2011 Postdoctoral Researcher
Department of Chemistry, Carnegie Mellon University
(Advisor: Professor Krzysztof Matyjaszewski)

2004-2009 Doctor of Philosophy in Organometallic Chemistry
Department of Chemistry, University of Pennsylvania
(Advisor: Professor Bradford B. Wayland)

1999-2001 Master of Science in Inorganic Chemistry
Department of Chemistry, National Taiwan University
(Advisor: Professor Shie-Ming Peng)

1995-1999 Bachelor of Science in Chemistry
Department of Chemistry, National Taiwan University

Positions

2022 – Present National Taiwan University, Taipei, Taiwan
Professor of Chemistry

2021 – 2022 National Tsing Hua University, Hsinchu, Taiwan
Professor of Chemistry

2016 – 2021 National Tsing Hua University, Hsinchu, Taiwan
Associate Professor of Chemistry

2015 – 2018 National Tsing Hua University, Hsinchu, Taiwan
Chief of the Division of Intellectual Property and Technology Licensing

2011 – 2016 National Tsing Hua University, Hsinchu, Taiwan
Assistant Professor of Chemistry

Research Interests

- Design and synthesis of organometallic complexes or organic compounds applied to controlled/living polymerization
- Application and mechanism study of cobalt complexes mediated radical polymerization and organic compound mediated radical polymerization
- Synthesis of block copolymers and their applications in surfactants, emulsifiers, strengtheners, adhesives, and so on
- Synthesis and characterization of Lanthanide-metal string complexes
- Studies of lanthanide-lanthanide interaction and lanthanide-transition metal bonds

Awards and Recognition

1. 2023 Chemicals Administration, Ministry of Environment_ Award for Application and Innovation of Green Chemistry (環境部化學物質管理署_綠色化學應用與創新獎)
2. 2019 The Chemical Society Located in Taipei_Outstanding Young Chemists Award (傑出青年化學家獎章)
3. 2019 The Polymer Society, Taipei_Outstanding Young Polymer Scientist Award (傑出青年高分子科技獎)
4. 2019 Ministry of Science and Technology_Project for Excellent Junior Research Investigators (優秀年輕學者研究計畫)
5. 2018 Shui-Mu Foundation of Chemistry_Award for Outstanding Young Scholar (財團法人水木化學文教基金會傑出青年學者獎)
6. 2017 The Society of Polymer Science, Japan_Invited Lecture of International Leading Young Scientist
7. 2016 POLMER_10th Feng Xinde Polymer Prize for the Best Chinese Paper, nominations for the Prize (第十屆馮新德高分子獎最佳文章提名獎)
8. 2014 National Tsing Hua University_Outstanding Research Award (傑出學術研究出版獎勵)
9. 2012 National Tsing Hua University_Outstanding New Assistant Professor Award (激勵優秀新聘助理教授獎勵)

Peer-Reviewed Publications

1. Benchaphanthawee, W.; Yang, Z.-W.; Hsu, H.-T.; **Peng, C.-H.*** " Reversible-Deactivation Radical Polymerization of Vinyl Monomers Mediated by Schiff Bases" *Macromolecules* **2025**, *58,* 495.
2. Chen, Y.-C.; Huang, X.-F.; Hsu, H.-T.; Wu, E.-T.; **Peng, C.-H.***; Huang, M. H.* "Photocatalyzed dimethylacrylamide polymerization in an aqueous solution using 4-nitrophenylacetylene-modified Cu2O crystals" *J. Mater. Chem. A* **2024**, *12,* 14792.
3. Lin, X.-J.; Wang, C.-L.; **Peng, C.-H.***; Liu, H.-J.*; Wu, Y.-K.* "A Concise Route to Keto-Bridged Polyphenols by Photo-Fries Rearrangement in Flow" *Chem. Asian J.* **2024**, e202400269.
4. Chang, I-H.; Lu, H.-H.; Ping, H.; Chang, C.-W.; **Peng, C.-H.*** "Versatile cobalt(Salen-NEt_2) for aqueous cobalt-mediated radical polymerization" *J. Chin. Chem. Soc.* **2023**, *70,* 1076.
5. Hsieh, Y.-L.; Benchaphanthawee, W.; Teng, H.-H.; Huang, N.; Yang, J.-H.; Sun, J.-R.; Lee, G.-H.; Kungwan, N.*; **Peng, C.-H.*** "Ring-opening polymerization of cyclic esters mediated by zinc complexes coordinated with benzotriazo-based imino-phenoxy ligands" *Polymer* **2023,** *267,* 125687.
6. Lee, T.-Y.; Lu, H.-H.; Cheng, H.-T.; Huang, H.-C.; Tsai, Y.-J.; Chang, I-H.; Tu, C.-P.; Chung, C.-W.; Lu, T.-T.*; **Peng, C.-H.***; Chen, Y.* "Delivery of nitric oxide with a pH-responsive nanocarrier for the treatment of renal fibrosis" *J. Control. Release* **2023,** *354,* 417.
7. Lin, X.-J.; Huang, S.-P.; Huang, M.-J.; Wang, C.-L.; **Peng, C.-H.***; Liu, H.-J.*; Wu, Y.-K.* "Revisiting the synthesis of bis(2-hydroxy-3,5-di-*t*-butylphenyl)methanone" *J. Chin. Chem. Soc.* **2022**, *69,* 1803.
8. Lu, H.-H.; Liu, H. W.; Dinh, T. K.; Huang, C.-H.; Huang, H.-C.; Tseng, Y.-C.; Ku, M.-H.; Wang, F.-S.; Chen, Y.*; **Peng, C.-H.*** "pH-Responsive, two-in-one doxorubicin and Bcl-2 siRNA-loaded micelleplexes for triple-negative breast cancer therapy" *Polym. Chem.* **2022**, *13,* 5568.
9. Wang, F.-S.; Lin, S.-H.; Zheng, G.-H.; Li, M.-H.; Cheng, Y.-C.; **Peng, C.-H.*** "Coordination of Azobisisobutyronitrile with Cobalt Complexes in Cobalt-Mediated Radical Polymerization Disclosed by Linear Correlation between the Equilibrium Constant and Half-Wave Potential" *Macromolecules* **2022**, *55,* 4276.

10. Chang, C.-W.; Jen, Y.-Y.; Tang, S.-C.; Zhang, P.; Chen, C.; **Peng, C.-H.*** "Reversible-deactivation radical polymerization of vinyl acetate mediated by tralen, an organomediator" *Polym. Chem.* **2021**, *12,* 5159.
11. Benchaphanthawee, W.; **Peng, C.-H.*** "Organo-Cobalt Complexes in Reversible-Deactivation Radical Polymerization" *Chem. Rec.* **2021**, *21,* 3628.
12. Wang, F.-S.; Tsai, Y.-W.; Xie, M.-Q.; **Peng, C.-H.*** "Computation-Assisted Investigation of Polymer Kinetics: Mechanism of the Hybridization of Cobalt-Mediated Radical Polymerization and Atom Transfer Radical Polymerization" *Macromolecules* **2020**, *53,* 10855.
13. Chen, S.-J.; Tang, S.-C.; Zhang, P.; Chen, C.*; **Peng, C.-H.*** "Aluminum Tralen Complex Mediated Reversible-Deactivation Radical Polymerization of Vinyl Acetate" *ACS Macro Lett.* **2020**, *9,* 1423.
14. Wu, Z.; **Peng, C.-H.*;** Fu, X.* "Tacticity control approached by visible-light induced organocobalt-mediated radical polymerization: the synthesis of crystalline poly(N, N-dimethylacrylamide) with high isotacticity" *Polym. Chem.* **2020**, *11,* 4387.
15. Wu, Z.; Wang, Z.; Wang, B.-W.; **Peng, C.-H.*;** Fu, X.* "Visible-Light-Induced Living/ Controlled Radical Copolymerization of 1-Octene and Acrylic Monomers Mediated by Organocobalt Complexes" *Macromolecules* **2020**, *53,* 212.
16. Chen, Y.-H.; Chen, S.-J.; Li, J.-Q.; Huang, C.; Tang, S.-C.; Lee, G.-H.; Liu, Y.-H.; Cheng, W.-T.; Yeh, C.-Y.; **Peng, C.-H.*** "Cobalt(II) Phenoxy-Imine Complexes in Radical Polymerization of Vinyl Acetate: The Interplay of Catalytic Chain Transfer and Controlled/Living Radical Polymerization" *J. Polym. Sci., Part A: Polym. Chem.* **2020**, *58,* 101.
17. Chang, H.-C.; Li, J.-Q.; Lin, C.-K.; Hsu, Y.-J.; Tu, T.-H.; Hsieh, Y.-L.; Hsu, H.-H.; Lee, G.-H.; Liu, Y.-H.; **Peng, C.-H.*** "Development of dipyridine based coordinative polymers for reusable heterogeneous catalysts" *J. Chin. Chem. Soc.* **2019,** *66,* 1119.
18. Su, C.-H.; Wu, Z.; Lin, C.-K.; Han, H.-A.; Chen, Y.-A.; Chou, P.-T.; Fu, X.*; **Peng, C.-H.*** "Polystyrene with Persistently Enhanced Fluorescence: Photo-Induced Atom Transfer Radical Polymerization Using a Pyrene-Based Initiator" *ChemPhotoChem* **2019,** *3,* 1153.
19. Lu, H.-H.; Huang, C.-H.; Shiue, T.-Y.; Wang, F.-S.; Chang, K.-K.; Chen, Y.; **Peng, C.-H.*** "Highly Efficient Gene Release in Spatiotemporal Precision Approached by Light and pH Dual Responsive Copolymers" *Chem. Sci.* **2019,** *10,* 284.
20. Wang, F.-S.; Wang, T.-F.; Lu, H.-H.; Ao-Ieong, W.-S.; Wang, J.; Chen, H.-L.*; **Peng, C.-H.*** "Highly Stretchable Free-Standing Poly(acrylic acid)-*block*-poly(vinyl alcohol) Films Obtained from Cobalt-Mediated Radical Polymerization" *Macromolecules* **2017,** *50,* 6054.
21. Chi, M.-H.; Su, C.-H.; Cheng, M.-H.; Chung, P.-Y.; **Peng, C.-H.***; Chen, J.-T.* "Shaping the Light: The Key Factors Affecting the Photophysical Properties of Fluorescent Polymer Nanostructures" *Macromol. Rapid Commun.* **2016,** *37,* 2037. (Cover page)
22. Wang, F.-S.; Yang, T.-Y.; Hsu, C.-C.; Chen, Y.-J.; Li, M.-H.; Hsu, Y.-J.; Chuang, M.-C.; **Peng, C.-H.*** "The Mechanism and Thermodynamic Studies of CMRP: Different Control Mechanisms Demonstrated by Co^{II}(TMP), Co^{II}(salen*), and $Co^{II}(acac)_2$ Mediated Polymerization and The Correlation of Reduction Potential, Equilibrium Constant, and Control Mechanism" *Macromol. Chem. Phys.* **2016,** *217,* 422. (Invited paper and Cover page for special issue of Young Talents in Polymer Science)
23. Chen, Y.-J.; Wu, B.-J.; Wang, F.-S.; Chi, M.-H.; Chen, J.-T.*; **Peng, C.-H.*** "Hybridization of CMRP and ATRP: A Direct Living Chain Extension from Poly(vinyl acetate) to Poly(methyl methacrylate) and Polystyrene" *Macromolecules* **2015,** *48(19),* 6832.
24. Zhao, Y.; Yu, M.; Zhang, S.; Wu, Z.; Liu, Y.; **Peng, C.-H.***; Fu, X.* "A Well-defined Versatile Photoinitiator (salen)Co-CO_2CH_3 for Visible Light Initiated Living/Controlled Radical Polymerization" *Chem. Sci.* **2015,** *6,* 2979.

25. Hsieh, Y.-L.; Huang, N.; Lee, G.-H.; **Peng, C.-H.*** "Bipyridine-Phenolate Based Aluminum Complexes Mediated Ring-Opening Polymerization of ε-Caprolactone and Lactides with A High Stereoselectivity" *Polymer* **2015,** *72,* 281.
26. Hsieh, Y.-L.; Lin, Y.-C.; Lee, G.-H.; **Peng, C.-H.*** "Zinc Complexes Coordinated by Bipyridine-Phenolate Ligands as An Efficient Initiator for Ring-Opening Polymerization of Cyclic Esters" *Polymer* **2015,** *56*, 237.
27. Lin, Y.-C.; Hsieh, Y.-L.; Lin, Y.-D.; **Peng, C.-H.*** "Cobalt Bipyridine Bisphenolate Complex in Controlled/Living Radical Polymerization of Vinyl Monomers" *Macromolecules* **2014,** *47(21),* 7362.
28. **Peng, C.-H.***; Yang, T.-Y.; Zhao, Y.; Fu, X.* "Reversible deactivation radical polymerization mediated by cobalt complexes: recent progress and perspectives" *Org. Biomol. Chem.* **2014**, *12,* 8580.
29. Hsu, C.-S.; Yang, T.-Y.; **Peng, C.-H.*** "Vinyl acetate living radical polymerization mediated by cobalt porphyrins: kinetic–mechanistic studies" *Polym. Chem.* **2014**, *5 (12),* 3867.
30. Hsiao, C.-Y.; Han, H.-A.; Lee, G.-H.; **Peng, C.-H.*** "AGET and SARA ATRP of styrene and methyl methacrylate mediated by pyridyl-imine based copper complexes" *Eur. Polym. J.* **2014,** *51,* 12.
31. Liao, C.-M.; Hsu, C.-C.; Wang, F.-S.; Wayland, B. B.; **Peng, C.-H.*** "Living radical polymerization of vinyl acetate and methyl acrylate mediated by Co(Salen*) complexes" *Polym. Chem.* **2013**, *4,* 3098.