

Zhonghua PENG

Curators' Professor of Chemistry

University of Missouri – Kansas City

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Ph: 816-235-2288 Email: pengz@umkc.edu

EDUCATION

- 1997 Ph. D. in Chemistry, the University of Chicago, Chicago, IL
- 1992 M.S in Material Sciences, Shanghai Institute of Ceramics
- 1989 B.S in Geochemistry, Univ. Sci. Tech. of China

EMPLOYMENT

- 2014 - Curators' Professor of Chemistry, UMKC
- 2003 - 2014 Professor of Chemistry, UMKC
- 2001 - 2003 Associate Professor of Chemistry (with tenure), UMKC
- 1998 - 2001 Assistant Professor of Chemistry, UMKC
- 1997 - 1998 Postdoctoral Member of Technical Staff, Bell Laboratories

AWARDS & HONORS

- N. T Veatch Award for Outstanding Research, UMKC, **2006**
- UMKC Trustees' Faculty Fellow, **2006**, UMKC
- National Science Foundation CAREER Award, **2001**
- UMKC Trustee's Faculty Scholar, **2000**
- Research Innovation Award, Research Corporation, **1999**

RESEARCH SUPPORTS/GRANTS

PI for all grants (NSF, ONR, NIH, ARO, DARPA, ACS-PRF, RC)

1. Faculty Research Grant-UMKC, PI, \$5,000. 1999-2000
2. University of Missouri Research Board, \$36,492, 1999-2000,
3. *Research Corporation*, Research Innovation Award, PI, \$35,000. 2000-2002
4. *American Chemical Society-Petroleum Research fund*, PI, \$25,000
5. *Defense Advanced Research Projects Agency (DARPA)*, PI, \$362,000, 2001-2005
6. *Office of Naval Research (ONR)*, PI, \$299,090, 2002-2006
7. *Defense Advanced Research Projects Agency (DARPA)*, PI, \$177,546., 2002-2005
8. *National Science Foundation (NSF)* – Career Award, PI, \$400,000, 2002-2006
9. *Defense Advanced Research Projects Agency (DARPA)*, PI, \$93,942, 2003-2005
10. *University of Missouri Research Board*, PI, \$25,000, 2006-2007
11. *National Science Foundation (NSF)*, PI, 300,000, 2008-2012.
12. *National Science Foundation (NSF)*, PI, \$5,000, 2002-2006.
13. *National Institute of Health (NIH)*, PI, \$450,000, 2010-2013
14. *Army Research Office (ARO)*, PI, \$698,400, 2010-2012.
15. *National Science Foundation (NSF)*, PI, \$345,000, 2013-2017.
16. *UM FastTrack*, \$47100, 7/1/17-6/30/18

PhD STUDENTS MENTORED

1. Yongchun Pan, 05/99-12/03, PhD
Student Award/Recognition: Distinguished dissertation fellowship, KL Cheng Fellowship
Current Position: Senior Chemist at Incyte Corporation, DE, USA
2. Bubin Xu, PhD, 01/99-12/03

- Student Award/Recognition:* Chancellor IPhD Fellowship, KL Cheng Fellowship
Current position: founder and CEO of Jiangxi RV Pharmaceuticals
Contact: bubxu@163.com
3. Meng Lu, Ph.D, 08/00-05/05, PhD
Student Award/Recognition: Chancellor IPhD Fellowship, *Distinguished dissertation fellowship*, KL Cheng Fellowship
Current Position: Postdoc at Rice University and now Senior Chemist at *CNPC USA*
Contact: glvmeng@gmail.com
 4. Jeonghee Kang, PhD, 08/02-05/07
Student Award/Recognition: *Distinguished dissertation Fellowship*, KL Cheng Fellowship
Current Position: Tenured Associate professor & Chair, *St. Joseph College*, New York.
Contact: jkang@sjcny.edu
 5. Degang Wang, PhD, 08/03-05/09
Current Position: Venture Capital Manager, Boston, US.
Contact: degang.wang@gmail.com
 6. Mahuya Bagui, PhD, 08/05-05/10
Student Award/Recognition: KL Cheng Graduate Fellowship, *Outstanding Dissertation award (UMKC, 2011)*
Current Position: Senior manager, Reliance Industrial Limited
Contact: bagui.mahuya@gmail.com
 7. Sanjiban Chakraborty, PhD, 08/06-05/12
Current Position: Postdoc at Northwestern University, *and now at Novol Inc. California*
Contact: sanjiban@vt.edu
 8. ChingEn Chou, PhD, 08/07-05/13
Current Position: Senior Chemist at RJ Reynolds
Contact:
 9. Tanmoy Dutta, PhD, 01/11-05/14
Student Awards: Chancellor's IPhD Fellowship, KLCheng Graduate Fellowship 2012
Current Position: Postdoc at Sandia National laboratory
Contact: tanmdutta@gmail.com
 10. Shaohua Li, PhD, 08/08-12/13
Current Position: *Research Fellow at New England Biolabs, Boston, MA*
Contact: shaohuali1227@gmail.com
 11. Lu Jin, PhD, 8/10-12/15
Student Awards: SGS Graduate Research Fellowship (13/14), KLCheng Graduate Fellowship 2012
Current Position: USTC, China
Contact: ljxm6@ustc.edu.cn
 12. Kuldeep Shetye, Ph.D, 8/11-8/17
Current Position: Chemist at RTI Laboratories, Livonia, MI, US.
Contact: kuldeep.shetye@gmail.com
 13. Vikalp Thakor, M. S., 02-05
Current Position: Senior Chemist & Manager in Trinity Biotech, US.
Contact:

CURRENT PhD STUDENTS

Xiaodong Yan 01/17 ~, expected graduation 05/18.
 Email:xyzn9@mail.umkc.edu
 Kyle Scheel, 01/16 ~, Email: krsb75@mail.umkc.edu
 Tony Powers, 01/17 ~, Email: tjpdkc@mail.umkc.edu

POSTDOCTORAL & VISITING SCHOLARS SUPERVISED

1. Dr. Jianheng Zhang, 10/98 ~ 12/99, currently R&D Manager at American Peptide Company
2. Dr. Yongge Wei, 4/00 – 10/01, currently Professor at Tsinghua University
3. Dr. Jie Wang, 1/01 – 1/02, currently a Professor at Nanjin University
4. Dr. Lin Xu, 8/01 – 9/02, currently a Professor and Dean of Northeast Normal University
5. Dr. R. Katabathini, 12/02-10/03, currently a Faculty at King Abdulaziz University
6. Dr. Tianyi Ke, 02/02 – 08/03
7. Dr. Baohan Xie, 4/02 – 11/04, currently at Chemical Abstract Services
8. Dr. Ruiyuan Guo, 8/02 – 6/05, currently a Professor in Zhenzhou University
9. Mr. Youchang Wei, 11/08-5/09, Currently vice president of Zhejiang Chemical Industry Research Institute
10. Dr. Xia Wu, 9/10 –9/11. Currently Associate Professor at Beijing University of Technology.
11. Dr. Guolong Tan, 02/11 – 09/11, currently Professor at Wuhan University of Technology
12. Mr. Zhongkai Qu, 07/11 – 6/12, currently Manager at China Petro. & Chem. Corp.
13. Dr. Ruixin Wang, 6/13-8/14, currently Professor at North University of China
14. Dr. Yong Li, 11/11- present

Undergraduates and project SEED students (high school program) supervised

1. James Nelson, undergraduate researcher, 06/01-08/02
2. Calida Cheung, undergraduate researcher, 06/00 – 08/01
3. La'chelle Bailey, Project SEED, summer 2002 – ACS College Scholar Winner
4. Shelita Terrill, Project SEED, summer 2002
5. John Brown, Project SEED, summer 2004
6. Kathryn Dixon, undergraduate researcher, summer 2005
7. Shayne Sprenkle, undergraduate researcher, fall 2005
8. Brain Stapleton, undergraduate researcher, 08/05-05/06
9. Channa Srouch, Project SEED, summer 08 and 09
10. Durontez Washington, Project SEED, summer 2010
11. Mayurkumar Patel, undergraduate researcher, 7/10-5/11
12. Trieu Do, undergraduate researcher, 1/2011 –5/12
13. Mark Rayhart, undergraduate researcher, 8/12-5/13
14. Abigail Lose, undergraduate researcher, 8/12-12/12
15. Lauren Harris, project SEED, summer 2012
16. Cody Woodall, undergraduate researcher, 8/13-
17. Abid Ahmadi, undergraduate researcher, 6/13-12/13
18. Michelle K. Vanderpool, undergraduate researcher, 8/13-12/13
19. Brian McEntee, undergraduate researcher, 01/14-12/14
20. Silas R. Arnold, undergraduate researcher, 01/15-
21. Arjelle L. Lawrence, Female, African American, UGRA, SP15
22. Massey, Hayley I., UGRA, fall 2015 & SP16
23. Eric Wheeler, UGRA, SP16
24. Momin Ansare, African America, UGTA, SP16
25. Ashley Harder, Female, FS16
26. Anthony Mok, SPS17
27. Jasmine Ugbajah, African-American Female, SPS17

As an IPhD Supervisory Committee Member

Chemistry

- | | | |
|--------------------|------------------------|------------------------|
| 1. Mathew Miller | 8. Xiaohua Zhou | 15. Brad Miller |
| 2. Huan Huang | 9. Wenjing Li | 16. Ikhlas Darkhalil |
| 3. Wei Xie | 10. Nalin Chandrasoma | 17. Ting Xia |
| 4. Junjie Zhang | 11. Chi Zhang | 18. Eliz. Horn |
| 5. Diheng Luo | 12. James Bryan | 19. Bhushan S. Deodhar |
| 6. Josh Klaassen | 13. Sudhaunshu Purohit | 20. Xiaodong Yan |
| 7. Savitha Panikar | 14. Dattatray Sawant | 21. Abrar Alnafisah |

Physics

- | | |
|----------------------|--------------------|
| 1. Liaoyuan Wang | 4. Yuxiang Mo |
| 2. Yilu Li | 5. Lokendra Poudel |
| 3. Shailesh Bhungana | |

Geosciences

1. Safaa Abdalrazzak

Pharmaceutical Sciences

- | | |
|--------------------------|------------------------|
| 1. Sridhar Duvvuri, | 22. Dipu Karunakaran |
| 2. Mohit Gandhi | 23. Zhiying Wang |
| 3. Suresh Katragadda | 24. Rubio Mahato |
| 4. Ritesh Jain | 25. Vibhuti Agrahari |
| 5. Subhashree Rangarajan | 26. Wei Jin |
| | 27. Zhijin Chen |
| 6. Sriram Gunda | 28. Namita Giri |
| 7. Viral Kansara | 29. Mitesh Patel |
| 8. Samit Shah | 30. Jianing Meng |
| 9. Kumar Gaurav Janoria | 31. Sujay J. Shah |
| 10. Karla K. Pradeep | 32. Shante Jackson |
| 11. Ravi S. Talluri | 33. Abhirup Mandal |
| 12. Sheetal S. Agarwal | 34. Hao yi |
| 13. Durga K. Paturi | 35. Meshal, Alshamrani |
| 14. Hariharan Sudharshan | 36. Ashutosh Barve |
| 15. Rajoshi Chaudhuri | 37. Hao Liu |
| 16. Nitin Jain | 38. Akshay Jain |
| 17. Wanyi Tai | 39. Zhen Zhao |
| 18. Ravi S. Shukla | 40. Khagendra Baral |
| 19. Sulabh Patel | |
| 20. Tao Zhang | |
| 21. Qin Bin | |

PUBLICATIONS

1. Li, Y.; Shetye, K.; Baral, K.; Jin, L.; Oster, J. D.; Zhu, D.; Peng, Z. "Main-chain polyoxometalate-containing donor-acceptor conjugated copolymers: synthesis, characterization, morphological studies and applications in single-component photovoltaic cells," *RSC Adv.*, **2016**, 6, 29909-29919, DOI: 10.1039/C6RA03251F

2. Li, Y.; Clevenger, R.; Jin, L.; Kilway, K.;* Peng, Z.* “Spin-Coated Thin Films of Polycyclic Aromatic Hydrocarbons Exhibiting High SCLC Hole Mobilities,” *J. Phys. Chem. C*, **2016**, 120 (2), pp 841–852.
3. Haso, F.; Wang, R.; He, J.; Luo, J.; Eghtesadi, S.; Peng, Z.;* Liu, T.* “Solution behaviour of a polymer with polyoxometalate inorganic molecular clusters in its main chain,” *New J. Chem.*, **2016**, *40*, 910-913
4. Liu Y, Li S, Peng Z, Keightley A, Wang Y.* “Methacrylate functionalized grape seed extract: A light-curable collagen crosslinker,” *Journal of dental research*. **2015**;94, Spec Iss A, 2174.
5. Tan, G.; Li, S.; Murowchick, J. B.; Wisner, C.; Leventis, N.; **Peng, Z.*** “Preparation of ternary Cd_{1-x}Zn_xS nanocrystals with tunable UV absorption by mechanical alloying”, *Electronic Materials Lett.* **2015**, *11*, 187.
6. Li, Y.; Dutta, T.; Gerasimchuk, N.; Wu, S.; Shetye, K.; Jin, L.; Wang, R.; Zhu, D.-M., **Peng, Z.*** “Conjugated Foldamers with Unusually High SCLC Hole Mobilities,” *ACS Appl. Mater. Inter.* **2015**. 7, 9372-9384.
7. Wang, R.; Li, Y.; Dutta, T.; Jin, L.; Shetye, K.; Li, S.; **Peng, Z.*** “Luminescent Polythiophene-Based Main-Chain Polyoxometalate-Containing Conjugated Polymers with Improved Solar Cell Performance,” *Enr. J. Inorg. Chem.* **2015**, 4, 656-663.
8. Wang, R.; Chakraborty, S.; Li, Y.; **Peng, Z.*** “Polyoxometalate-containing hybrid diblock copolymers: synthesis, morphology, and applications,” book chapter in *Trends in Polyoxometalates Research*, **2015**. ISBN 978-1-63482-656-3. Nova Science Publishers, InC.
9. Li, S.; Li, Y.; Wisner, C. A.; Jin, L.; Leventis, N.; **Peng, Z.*** “Synthesis, optical properties and photovoltaic applications of hybrid rod–coil diblock copolymers with coordinatively attached CdSe nanocrystals,” *RSC Advances*, **2014**, 4, 35823-35832.
10. Li, Y.; Clevenger, R.; Jin, L.; Kilway, K.; **Peng Z.*** “Unusually high SCLC hole mobility in solution-processed thin films of a polycyclic thiophene-based small-molecule semiconductor,” *J. Mater. Chem. C*. **2014**, 2, 8180-7183.
11. Haso, F.; Wang, R.; Yin, P.; Zhou, J.; Jin, L.; **Peng, Z.***; Liu, T.* “Supramolecular Assemblies of Polyoxometalate-Tethered Diblock Copolymers with Tunable Sizes in N-Methyl-2-pyrrolidone/Toluene Mixed Solvents,” *Eur. J. Inorg. Chem.* **2014**, 27, 4589-4592. DOI: 10.1002/ejic.201402201.
12. Dutta, T.; Li, Y.; Thornton, A. L.; Zhu, D.; **Peng, Z.*** “Imide-Functionalized Naphthodithiophene Based Donor-Acceptor Conjugated Polymers for Solar Cells,” *J. Polym. Sci. A*, **2013**, *51*, 3818-3828.
13. Li, Y.; Jin, L.; Charaborty, S.; Li, S.; Lu, P.; Zhu, D.; Yan, X.; **Peng, Z.*** “Femtosecond Time-Resolved Fluorescence Study and Photovoltaic Properties of Polyoxometalate-Containing Rod-Coil Diblock Copolymers,” *J. Polym. Sci. B*, **2014**, 52 (2), 122-155.
14. Li, Y.; Li, S.; Jin, L.; Murowchick, J. B.; **Peng, Z.*** “Carbon nanoparticles as an interfacial layer between TiO₂-coated ZnO nanorod arrays and conjugated polymers for high-photocurrent hybrid solar cells,” *RSC Adv.*, **2013**, 3 (37), 16308 – 16312.

15. Chou, C.; Li, Y.; Che, Y.; Zang, L.; **Peng, Z.*** “Synthesis, self-assembly and photovoltaic applications of tribenzopentaphene derivatives,” *RSC Adv.*, **2013**, 3 (43), 20666 - 20672.
16. Li, S.; Tan, G.; Murowchick, J. B.; Wisner, C.; Leventis, N.; Xia, T.; Chen, X.; **Peng, Z.*** “Preparation of uncapped Cd_{1-x}Se_xTe_{1-x} nanocrystals with strong near-IR tunable absorption,” *J. Electronic Mater.* **2013**, 42(12), 3373-3378.
17. Tai, W.; Chen, Z.; Barve, A.; **Peng, Z.**; Cheng, K.* “A novel rapamycin-polymer conjugate based on a new poly(ethylene glycol) multiblock copolymer,” *J. Pharmaceutical Research*, **2013**, 10.1007/s11095-013-1192-3
18. Huang, H.; Chou, C.; Che, Y.; Li, L.; Wang, C., Yang, X.; **Peng, Z.**;*** Zang, L.*** “Morphology control of nanofibril donor-acceptor heterojunction to achieve high photoconductivity: exploration of new molecular design rules,” *J. Am. Chem. Soc.* **2013**, 135(44), 16490-16496.
19. Dutta, T.; Che, Y.; Zhong, H.; Laity, J. H.; Dusevich, V.; Murowchick, J. M.; Zang, L.; **Peng, Z.*** “Synthesis and self-assembly of triphenylene-containing conjugated macrocycles,” *RSC Advances*, **2013**, 3, 6008-6015.
20. Li, Y.; Lu, P. F.; Yan, X. Z.; Jin, L.; and **Peng, Z.*** “Non-aggregated hyperbranched phthalocyanines: single molecular nanostructures for efficient semi-opaque photovoltaics,” *RSC Advances* **2013**, 3(2), 545-558.
21. Chakraborty, S.; Jin, L.; Li, Y.; Liu, Y.; Dutta, T.; Zhu, D.-M.; Yan, X. Z.; Keightley, A.; **Peng, Z.*** “Synthesis, Characterization, and Photovoltaic Applications of Polyoxometalate-Containing Rod-Coil Diblock Copolymers,” *Eur. J. Inorg. Chem.* **2013**, 1799-1807.
22. T. Xia, J. W. Otto, T. Dutta, J. Murowchick, A. N. Caruso, **Z. Peng**, X. Chen* “Formation of TiO₂ nanomaterials via titanium ethylene glycolide decomposition,” *J. Mater. Res.* **2013**, 28, 326-332. DOI: 10.1557/jmr.2012.239
23. Li, Y.; Lu, P.; Jiang, M.; Dhakal, R.; Thapaliya, P.; **Peng, Z.**; Jha, Bi.; Yan, X. Z.* “Femtosecond Time-Resolved Fluorescence Study of TiO₂-Coated ZnO Nanorods/P3HT Photovoltaic Films,” *J. Phys. Chem. C* **2012**, 116 (48), 25248–25256. DOI: 10.1021/jp3094897.
24. Li, Y.; Lu, P.; Yan, X.;* **Peng, Z.** “Novel non-aggregated hyperbranched phthalocyanines for efficient dye-sensitized solar cells,” Photovoltaic Specialists Conference (PVSC), **2012**, 38th IEEE, 002311-002314.
25. Yin, P.; Jin, L.; Li, D.; Cheng, P.; Vezenov, D. V.; Bitterlich, E.; Wu, X.; **Peng, Z.**;*** Liu, T.*** “Supramolecular Structures of Conjugated Polymers with Polyoxometalate-Containing Side Chains in Polar and Nonpolar Solvents,” *Enr. J. Chem.* **2012** 18, 6754-6758.
26. Bagui, M; Dutta, T.; Zhong, H.; Li, S.; Chakraborty, S.; Keightley, A.; **Peng, Z.*** “Synthesis and Optical Properties of Perylene Diimide Derivatives with Triphenylene-Based Dendrons Linked at the Bay Positions through a Conjugated Ethynyl Linkage,” *Tetrahedron* **2012**, 68, 2806-2818. doi:10.1016/j.tet.2012.02.008.

27. Tan, G.; Li, S.; Murowchick, J. B.; Wisner, C.; Leventis, N.; **Peng, Z.*** "Preparation of uncapped CdSe_{1-x}S_x semiconducting nanocrystals by mechanical alloying", *J. Appl. Phys.* **2011**, *110*, 124306.
28. Kuroda, D. G.; Singh, C. P.; **Peng, Z.**; Kleiman, V. D.* "Exploring the role of phase modulation on photoluminescence yield," *Faraday Discuss.* **2011**, *153*, 61-72.
29. Bagui, M.; Dutta, T.; Chakraborty, S.; Melinger, J. S.; Zhong, H.; Keightley, A.; **Peng, Z.*** "Synthesis and Optical Properties of Triphenylene-Based Dendritic Donor Perylene Diimide Acceptor Systems," *J. Phys. Chem. A*, **2011**, *115* (9), 1579–1592.
30. Chakraborty, S.; Keightley, A.; Dusevich, V. Wang, Y.; **Peng, Z.*** "Synthesis and optical properties of a rod-coil diblock copolymer with polyoxometalate clusters covalently attached to the coil block," *Chem. Mater.* **2010**, *22*, 3995.
31. Chen, X.; Barnes, C.; Bai, X.; Sandreczki, T. C.; **Peng, Z.**; Kadnikova, E. N.; Dias, J. R.* "Synthesis and structural analysis of a novel iodinated cyclopentadienone via ring-contraction iodination and its application in synthesis of alkyne-functionalized cyclopentadienones," *Chem. Commun.*, **2010**, *46*, 8171.
32. Chou, C.; Wang, D.; Bagui, M.; Hsu, J.; Chakraborty, S.; **Peng, Z.*** "Syntheses and Optical Properties of Triphenylene-Containing Conjugated Polymers." *J. Lumin.* **2010**, *130*, 986.
33. Guo, R.; Bagui, M.; Wei, Y.; **Peng, Z.*** "Synthesis and Optical Properties of 6-Substituted β -cyclodextrin Derivative," *Lett. Org. Chem.* **2009**, *6*(8).
34. Kuroda, D. G.; Singh, C. P.; **Peng, Z.**; Kleiman, V.* "Mapping Excited State Dynamics by Coherent Control of a Dendrimer's Photoemission Efficiency," *Science*, **2009**, *326*, 263.
35. Chou, C.; wang, D.; Hsu, J.; Liu, Y.; **Peng, Z.*** "Synthesis and Optical Properties of Poly(2,11-Triphenyleneethynylene-*alt*-m-Phenyleneethynylene)s", *Synth. Met.* **2009**, *159*, 1657.
36. Bagui, M.; Melinger, J.; Chakraborty, S.; Keightley, A. J.; **Peng, Z.*** "Synthesis and Optical Properties of Triphenylene Containing Conjugated Dendrons," *Tetrahedron*, **2009**, *65*, 1247.
37. Wang, D.; Hsu, J.; Bagui, M.; Dusevich, V.; Wang, Y.; Liu, Y.; Holder, A.; **Peng, Z.*** "Synthesis and self-assembly of a triphenylene-containing amphiphilic conjugated macrocycle," *Tetrahedron Letters*, **2009**, *50*, 2147.
38. Guo, X.; **Peng, Z.**; Spencer, P; Wang, Y.* "Effect of Initiator on Photopolymerization of Acidic, Aqueous Dental Model Adhesives," *J. Biomed. Mater. Res. A*. **2009**, *90A*, 1120.
39. Thakor, V.; Bagui, M.; **Peng, Z.*** "Synthesis of Poly(Phenylene Ethynylene)s Containing Trialkoxysilane Side Chains," *Lett. Org. Chem.*, **2009**, *6*, 485.
40. Xie, B.; Bagui, M.; Guo, R.; Li, Q.; Wang, Q.; **Peng, Z.*** "Water-Soluble Conjugated Polymers: Synthesis and Optical Properties," *J. Polym. Sci. A. Polym. Chem.* **2007**, *45*, 5123.
41. Kang, J.; Wang, D.; Bagui, M.; Chakraborty, S.; **Peng, Z.*** "Synthesis of AB₂ functionalized triphenylene derivatives," *Lett. Org. Chem.* **2006**, *3*, 674.

42. **Peng, Z.;*** Melinger, J. S.; Kleiman, V. D. "Light-harvesting unsymmetrical conjugated dendrimers as photosynthetic mimics," *Photosynthesis Research*, **2006**, 87, 115.
43. Lu, M.; Kang, J.; Wang, D.; **Peng, Z.;*** "Enantiopure 1,1'-binaphthyl-based polyoxometalate-containing molecular hybrids," *Inorg. Chem.* **2005**, 44, 7711.
44. Kang, J.; Xu, B.; **Peng, Z.;*** Zhu, X.; Wei, Y.; Powell, D. R. "Molecular and polymeric hybrids based on covalently linked polyoxometalates and transition metal complexes," *Angew. Chem. Int. Ed.* **2005**, 44, 6902.
45. Atlas, E.; Mair, C.; Melinger, J. S.; **Peng, Z.;** Kleiman, V.* "Energy transfer in phenylene ethynylene dendrimers," *Springer Series in Chemical Physics*, **2005**, 79 (Ultrafast Phenomena) 456.
46. Etas E.; **Peng, Z.;** Kleiman, V. D.* "Energy Transfer in Unsymmetrical Phenylene Ethynylene Dendrimers," *J. Phys. Chem. B.* **2005**, 109, 13553.
47. Xu, B.; Lu, M.; Kang, J.; G. Wang; Brown, J.; **Peng, Z.;*** "Synthesis and optical properties of conjugated polymers containing polyoxometalates as side chain pendants," *Chem. Mater.* **2005**, 17, 2841.
48. Meng, L.; Xie, B.; Kang, J. H.; Chen, T.; Yang, Y.; **Peng, Z.;*** "Synthesis of main-chain polyoxometalate containing hybrid polymers," *Chem. Mater.* **2005**, 17, 402.
49. Kang, J.; Nelson, J.; Lu, M.; Xie, B.; **Peng, Z.;*** Powell, D. R. "Charge-Transfer Hybrids Containing Covalently Bonded Polyoxometalates and Ferrocenyl Units," *Inorg. Chem.* **2004**, 43, 6408.
50. Davis B. L.; Melinger, J. S. ;* McMorrow, D.; **Peng, Z.;** Pan, Y. "Aggregation Effects on the Optical Properties of a Light Harvesting Phenylacetylene Dendrimer in Non-Polar Solution", *J. Luminescence*, **2004**, 106, 301-311.
51. Melinger, J. ;* Davis, B. L.; McMorrow, D.; Pan, Y. and **Peng, Z.** "Photoluminescence Properties of Conjugated Phenylacetylene Monodendrons in Thin Films," *J. Fluorescence* **2004**, 14(1), 105-112.
52. **Peng, Z.;*** "Rational Synthesis of Covalently Bonded Organic/Inorganic Hybrids," *Angew. Chem.* **2004**, 43(8), 930-935.
53. Pan, Y.; Lu, M.; **Peng, Z.;*** Melinger, J. S. "Synthesis of Light-Harvesting Dendrimers Focally Anchored with Crown Ethers or Terpyridine Ligands," *Org. Biomolecular Chem.* **2003**, 1(24), 4465-4470.
54. Xu, B.; **Peng, Z.;*** Wei, Y.; and Powell, D. R. "Polyoxometalates covalently bonded with terpyridine ligands," *Chem. Comm.* **2003**, 2562.
55. Pan, Y.; Lu, M.; **Peng, Z.;*** and Melinger, J. S. "Synthesis and Optical Properties of Unsymmetrical Conjugated Dendrimers Focally Anchored with Perylenes in Different Geometries," *J. Org. Chem.* **2003**, 68, 6952-6958.

56. Pan, Y.; **Peng, Z.*** and Melinger, J. S. "Synthesis and optical properties of conjugated dendrimers with unsymmetrical branching," *Tetrahedron* **2003**, 59, 5495-5506.
57. Lu, M.; Pan, Y. and **Peng, Z.*** "Soluble Dipolar Dendrimers with Peripheral Sulfone Groups," *Tetrahedron Lett.* **2002**, 43/44, 7903.
58. Wang, J.; Pan, Y.; Lu, M. and **Peng, Z.*** "Synthesis of Nonlinear Optical Active Dendrimers", *J. Org. Chem.* **2002**, 67(22), 7781.
59. Xu, L.; Lu, M.; Xu, B.; Wei, Y.; **Peng, Z.*** and Powell, D. R. "A highly efficient approach to bifunctionalized organoimido derivatives of hexamolybdates: towards main-chain POM-containing hybrid polymers", *Angew. Chem. Int. Ed. Engl.* **2002**, 41(21), 4129.
60. Melinger, J. S.*; Pan, Y.; Kleiman, V. D.; **Peng, Z.;** Davis, B. L.; McMorro, D. and Lu, M. "Optical and photophysical properties of light-harvesting phenylacetylene monodendrons based on unsymmetrical branching," *J. Am. Chem. Soc.* **2002**, 124 (40), 12002-12012.
61. Lu, M.; Wei, Y.; Xu, B.; Cheung, C. F.-C.; **Peng, Z.;*** Powell, D. "Hybrid molecular dumbbells: bridging polyoxometalate clusters with organic π -conjugated rods," *Angew. Chem. Int. Ed. Engl.* **2002**, 41(9), 1566.
62. Wei, Y.; Lu, M.; Cheung, C. F.-C.; Barnes, C. L.; **Peng, Z.*** "Functionalization of $[\text{MoW}_5\text{O}_{19}]^{2-}$ with aromatic amines: synthesis of the first arylimido derivatives of mixed-metal polyoxometalates," *Inorg. Chem.* **2001**, 40 (22), 5489 - 5490.
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PATENTS & TECHNICAL DISCLOSURE

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4. Wang, R.; Peng, Z.* “Process to prevent thermoplastic polyurethane (TPU) composites from blooming,” Technical disclosure, **2013**.
5. Peng, Z.*; Li, Y.; Kilway K. “Dopant-free inexpensive hole transporting materials for highly efficient and stable perovskite solar cells,” Patent application submitted in October **2016**.

COURSES TAUGHT AT UMKC

Average student evaluation: 4.7/5.0

Undergraduate Level Courses

1. CHEM320 – one semester organic chemistry for premed students, ~100 enrollment, 2002-2006, 14-present
2. CHEM 321-organic chemistry I, enrollment ~ 45, 2000, 2001, 2010
3. CHEM 322R- organic chemistry II, enrollment ~ 45, 99-02, 05-09, 11-14
4. CHEM321L-Organic Chemistry Lab I, 99-11
5. CHEM322L-Organic Chemistry Lab II, 99-11
6. CHEM367-Bioorganic Chemistry, 09-12
7. CHEM395 – Directed studies

8. CHEM451-Inorganic Chemistry, 06-08, 12
9. CHEM471-Polymer Chemistry, 02-08, 11
10. CHEM499-undergraduate Research

Graduate Level Courses

1. CHEM520R – Survey of Organic Chemistry
2. CHEM5551R-*Advanced Inorganic Chemistry*, 05, 07, 09, 11,13
3. CHEM5571R – *Polymer Chemistry*, 02-08, 11,13
4. CHEM5599-Graduate Research, 1999-present
5. CHEM6999-Graduate Research, 1999-present

SERVICES:

UM SYSTEM-WIDE COMMITTEES

- Member, advisory committee on Presidential Award for Outstanding Research, 08-10

CAMPUS-WIDE COMMITTEES

- IPh.D Executive Committee, 2014-
- Strategic Plan for Research Working Group, 2011-2013
- UMKC Faculty Senate, 2010-2012
- Campus-Wide Tenure & Promotion Advisory Committee, 2009-2012, 2014
- Chair, Campus-wide Tenure & Promotion Adv. Committee, 2011-2012
- Search Committee on Vice Provost of Faculty Affairs, 2011

COLLEGE-Wide COMMITTEES

- Promotion & Tenure Committee, 2012, 2014
- Committee on Recruiting & Retention, 2007
- Interim Chair, Department of Mathematics & Statistics, 2007

DEPARTMENT COMMITTEES

- Principle Graduate Advisor, 2003-present
- Division Head, 2007-present
- Faculty Recruiting Committee, 2001, 2002, 2004, 2005, 2011, 2012, 2013, 2014, 2017
- Graduate Program Committee Chair, 2003-present
- Promotion & Tenure Committee, 2001-present; Chair, 2005-2006
- Faculty Secretary, 1998-1999, 2008-2009
- Nomination Committee, 2001-Present, Chair, 2002-2003, 2016-
- Library & Colloquium Committee, 2005-present
- Space/Equipment Committee, 2005-present
- Graduate Recruiting Committee, 2003-2005, 2011-present

SERVICE OT OTHER UNIVERSITY

External reviewer for P&T (MoST, Univ. North Dakota; South Dakota State Univ.; Southern Illinois Univ.; Missouri State Univ.; Creighton University; University of Nebraska-Omaha, University of Utah)

SERVICE TO THE PROFESSION

- Secretary (2010), Chair-Elect (2011) and Chair (2012) of the American Chemical Society-Kansas City Section

- Editorial Board Members: International Journal of Polymer Science, Letter of Organic Chemistry
- Reviewer NSF, NIH, DOE, DOD, Research Grant Council of Hongkong, Hungary,
- Panelist: NSF, since 2000; AAAS Marion Milligan Mason-Award for Women in the Chemical Science

SERVICE TO THE COMMUNITY

- Science Mentor to Science Pioneers Inc.
- Judge, Kansas Odyssey of the Minds State Competitions