CURRICULUM VITAE

Qian Miao (繆 謙)

Contact Information

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Education

- Columbia University Aug. 2000 May 2005
  Doctor of Philosophy and Master of Philosophy in chemistry
  Advisor: Prof. Colin Nuckolls, Department of Chemistry
- University of Science and Technology of China Sept. 1995 Jul. 2000
  Bachelor of Science in chemistry
  Advisor: Prof. Tianpa You, Department of Chemistry

Positions

- Professor Since Aug. 2016
  Department of Chemistry, the Chinese University of Hong Kong
- Head Since Aug. 2015
  The Graduate Division of Chemistry, the Chinese University of Hong Kong
- Deputy Chairman Aug. 2015 Jul. 2018
  Department of Chemistry, the Chinese University of Hong Kong
- Associate Professor Aug. 2012 Jul. 2016
  Department of Chemistry, the Chinese University of Hong Kong
- Assistant Professor Aug. 2006 Jul. 2012
  Department of Chemistry, the Chinese University of Hong Kong
- Postdoctoral Scholar Jun. 2005 May 2006
  Department of Chemistry & Biochemistry, University of California, Los Angeles
  Advisor: Prof. Fred Wudl

Academic Awards

- CSJ Lectureship Award 2020, the Chemical Society of Japan
- Outstanding Fellow of the Faculty of Science, the Chinese University of Hong Kong, 2019
- Croucher Senior Research Fellowship 2019-2020, Croucher Foundation, Hong Kong
- Research Excellence Award 2016-17, the Chinese University of Hong Kong
- Young Researcher Award 2011, the Chinese University of Hong Kong
- Science Faculty Exemplary Teaching Award 2007, the Chinese University of Hong Kong
- The Hammet Award, the Department of Chemistry, Columbia University, 2005
- Dissertation with distinction from Columbia University, 2005
- Dissertation with distinction from University of Science and Technology of China, 2000

Professional Activities

- Member of the International Advisory Board, the International Symposium on Novel Aromatic Compounds (ISNA), since 2017
- Member of Young Scientist Committee, Editorial Board, *Progress in Chemistry*, since 2019

- Principle Investigator,

10) "Tertiary Amines Differentiated from Primary and Secondary Amines by Active Ester-Functionalized Hexabenzoperylene in Field Effect Transistors", Li. C.; Zhang, T.; Zheng, B.; Xu, J.; **Miao, Q.*** *Chemistry – An Asian Journal*, **2019**, *14*, 1676 1680.
    - An invited paper for the S N -Conjugated Compounds for Molecular Materials.
11) "Crystal Engineering of Biphenylene-Containing Acenes for High-Mobility Organic Semiconductors", Wang, J.; Chu, M.; Fan, J.-X.; Lau, T.-K.; Ren, A.-M.; Lu, X.; **Miao, Q.*** *Journal of the American Chemical Society*, **2019**, *141*, 3589 3596.
12) "Stable and Efficient 3D-2D Perovskite-Perovskite Planar Heterojunction Solar Cell without Organic Hole Transport Layer", Zhang, T.; Long, M.; Qin, M.; Lu, X.; Chen, S.; Xie, F.; Gong, L.; Chen, J.; Chu, M.; **Miao, Q.**; Chen, Z.; Xu, W.; Liu, P.; Xie, W.; Xu, J. *Joule*, **2018**, *2*, 2706 2721.
13) "A Trefoil Macrocycle Synthesized by 3-Fold Benzannulation", Yang, X.; Yuan, L.; Chen, Z.; Liu, Z.; **Miao, Q.*** *Organic Letters*, **2018**, 20, 6952 6956.
14) "Halogenated Tetraazapentacenes with Electron Mobility as High as 27.8 $cm^2 V^{-1} s^{-1}$ in Solution-Processed N-channel Organic Thin Film Transistors", Chu, M.; Fan, J.-X.; Yang, S.; Liu, D.; Ng, C. F.; Dong, H.; Ren, A.-M.*; **Miao, Q.*** *Advanced Materials*, **2018**, *30*, 1803467.
15) "From Phenanthrylene Butadiynylene Macrocycles to S-Heterocycloarenes", Yang, Y.; Chu, M.; **Miao, Q.*** *Organic Letters*, **2018**, 20, 4259 4262.
16) "Toward Negatively Curved Carbons", Pun, S. H.; **Miao, Q.*** *Accounts of Chemical Research*, **2018**, 51, 1630 1642.
    - An invited review
17) "K -Stacks of Hexabenzoperylenes as a Platform for Chemical and Biological Sensing ", Li. C.; Wu, H.; Zhang, T.; Liang, Y.; Zheng, B.; Xia, J.; Xu, J.; **Miao, Q.*** *Chem*, **2018**, *4*, 1416 1426.
18) "Copolymer dielectrics with balanced chain-packing density and surface polarity for high-performance flexible organic electronics", Ji, D.; Li, T.*; Zou, Y.; Chu, M.; Zhou, K. Liu, J.; Tian, G.; Zhang, Z.; Zhang, X.; Li, L.; Wu, D.; Dong, H.; **Miao, Q.**; Fuchs, H.*; Hu, W.* *Nature Communications*, **2018**, *9*, 2339.
19) "Recent Progress in Chemistry of Multiple Helicenes", Li, C.; Yang, Y.; **Miao, Q.*** *Chemistry – An Asian Journal*, **2018**, *13*, 884 894.
    - An invited Focus Review
    - Selected as part of *Readers' Choice 2019*
    - A Highly Cited Paper identified by the Essential Science Indicators (ESI)
20) "Connecting Two Phenazines with a Four-Membered Ring: Synthesis, Properties and Applications of Cyclobuta[1,2-b:3,4-b']diphenazines", Yang, S.; Chu, M.; **Miao, Q.***, *Journal of Materials Chemistry C*, **2018**, 6, 3651 3657.
    - An invited paper for the themed issue celebrating 50 years of Professor Fred Wudl's contributions to the field of organic semiconductors
21) "A Dipleiadiene-Embedded Aromatic Saddle Consisting of 86 Carbon Atoms", Pun, S. H.; Chan, C. K.; Luo, J.; Liu, Z.; **Miao, Q.*** *Angewandte Chemie International Edition*, **2018**, 57, 1851 1856.
    - A Highly Cited Paper identified by the Essential Science Indicators (ESI)
22) "Recent Progress in Interface Engineering of Organic Thin Film Transistors with Self-Assembled Monolayers", Liu, D.*; **Miao, Q.***, *Materials Chemistry Frontiers*, **2018**, *2*, 11 21.
    - An invited review for the themed collection of "Molecular Materials and Devices"
23) "A Twisted Nanographene Consisting of 96 Carbon Atoms", Cheung, K. Y.; Chan, C. K.; Liu, Z.; **Miao, Q.*** *Angewandte Chemie International Edition*, **2017**, 56, 9003 9007.
    - Selected as a Hot Paper

- Cover of *Angewandte Chemie International Edition* **2017**, volume 56, issue 31.

24) "N-Phenylated N-Heteroacenes: Synthesis, Structures and Properties", Gu, X.; Shan, B.; He, Z.; **Miao, Q.*** *ChemPlusChem*, **2017**, 82, 1034 1038.
- An invited paper for the special issue of *Novel Aromatics: From Synthesis to Applications*

25) "Synthesis, Structure and Properties of Tetrabenzo[7]circulene", Gu, X.; Li, H.; Shan, B.; Liu, Z.; **Miao, Q.*** *Organic Letters*, **2017**, 19, 2246 2249.

26) "From Tetrabenzoheptafulvalene to sp^2 Carbon Nano-rings", Cheung, K. Y.; Yang, S.; **Miao, Q.*** *Organic Chemistry Frontiers*, **2017**, 4, 699 703.
- An invited paper for the special issue of *Novel π-electron molecular scaffolds*
- Selected as an Organic Chemistry Frontiers HOT article for 2017

27) "Molecular Design of N-type Organic Semiconductors for Organic Thin Film Transistors", Shan, B; **Miao, Q.*** *Tetrahedron Letters*, **2017**, 58, 1903 1911.
- An invited review

28) "Engineering Thin Films of a Tetrabenzoporphyrin toward Efficient Charge-Carrier Transport: Selective Formation of a Brickwork Motif", Takahashi, K.; Shan, B.; Xu, X.; Yang, S.; Koganezawa, T.; Kuzuhara, D.; Aratani, N.; Suzuki, M.*; **Miao, Q.***; Yamada, H.* *ACS Applied Materials & Interfaces*, **2017**, *9*, 8211 8218.

29) "Aggregation-Induced Emission: Mechanistic Study of Clusteroluminescence of Tetrathienylethene", Viglianti, L.; Leung, N. L. C.; Xie, N.; Gu, X.; Sung, H. H. Y.; **Miao, Q.**; Williams. I. D.; Licandro, E.; Tang, B. Z.* *Chemical Science*, **2017**, *8*, 2629 2639.

30) "Twisted Polycyclic Arenes from Tetranaphthyldiphenylbenzenes by Controlling the Scholl Reaction with Substituents", Yang, Y.; Yuan, L.; Shan, B.; Liu, Z.; **Miao, Q.*** *Chemistry – A European Journal*, **2016**, 22, 18620 18627.

31) "Benzo[4,5]cyclohepta[1,2-*b*]fluorene: an Isomeric Motif for Pentacene Containing Linearly Fused Five-, Six- and Seven-membered Rings", Yang, X.; Shi, X.; Aratani, N.; Gonçalves, T. P.; Huang, K.-W.; Yamada, H.; Chi, C.*; **Miao, Q.*** *Chemical Science*, **2016**, *7*, 6176 6181.
- Highlighted by *Synfacts*, **2016**, *12*, 916.

32) "Studies toward the Synthesis of Hepta-*peri*-heptabenzo-[7]circulene", Yang, X.; **Miao, Q.*** *Synlett*, **2016**, *27*, 2091 2094.
- An invited paper for the Cluster issue on *Non-planar Polyaromatic Compounds*.

33) "Electron Mobility Exceeding 10 $cm^2V^{-1}s^{-1}$ and Band-like Charge Transport in Solution-processed N-channel Organic Thin Film Transistors", Xu, X.; Yao, Y.; Shan, B.; Gu, X.; Liu, D.; Liu, J.; Xu, J.; Zhao, N.; Hu, W.; **Miao, Q.***, *Advanced Materials*, **2016**, *28*, 5276 5283.
- Highlighted by *Materials Views China.*

34) "Extension of N-Heteroacenes through a Four-Membered Ring", Yang, S..; Shan, B.; Xu, X.; **Miao, Q.*** *Chemistry – A European Journal*, **2016**, 22, 6637 6642.
- Highlighted by *Synfacts*, **2016**, *12*, 684.

35) "Boosting the electron mobility of solution-grown organic single crystals via reducing the amount of polar solvent residues", Xue, G.; Wu, J.; Fan, C.; Liu, S.; Huang, Z.; Liu, Y.; Shan, B.; Xin, H. L.; **Miao, Q.**; Chen. H.; Li, H. *Materials Horizons*, **2016**, *3*, 119 123.

36) "Synthesis, Molecular Packing and Thin Film Transistors of Dibenzo[*a*,*m*]rubicenes", Gu, X.; Xu, X.; Li, H.; Liu, Z.; **Miao, Q.*** *Journal of the American Chemical Society*, **2015**, 137, 16203 16208.
- Highlighted by *Synfacts*, **2016**, *12*, 258.

37) "Solution-Processed Ambipolar Organic Thin Film Transistors by Blending p- and n-Type Semiconductors: Solid Solution versus Microphase Separation", Xu, X.; Xiao, T.; Gu, X.; Yang, X.; Kershaw, S. V.; Zhao, N.; Xu, J.; **Miao, Q.*** *ACS Applied Materials & Interfaces*, **2015**, 7, 28019 28026.
- An invited paper for the special issue of "Advances towards Electronic Applications in Organic Materials"

53) "Facile Passivation of Solution-Processed InZnO Thin-Film Transistors by Octadecylphosphonic Acid Self-Assembled Monolayers at Room Temperature", Xu, W.; Liu, D.; Wang, H.; Ye, L.; **Miao, Q.**; Xu. J.* *Applied Physics Letters*, **2014**, *104*, 173504/1 173504/5.

54) "Ternary Blend Bulk Heterojunction Photovoltaic Cells with an Ambipolar Small Molecule as the Cascade Material", Ye, L.; Xia, H.; Xu, J.*; **Miao, Q.*** *RSC Advances*, **2014**, *4*, 1087 1092.

55) "Conjugated Macrocycles of Phenanthrene: a New Segment of [6,6]-Carbon Nanotube and Solution-Processed Organic Semiconductors", He, Z.; Xu, X.; Zheng, X.; Ming, T.; **Miao, Q.*** *Chemical Science*, **2013**, *4*, 4525 4531.

56) "Revisiting Zethrene: Synthesis, Reactivity and Semiconductor Property", Shan, L.; Liang, Z.; Xu, X.; Tang, Q.; **Miao, Q.*** *Chemical Science*, **2013**, *4*, 3294 3297.
- Highlighted by *Synfacts*, **2013**, *9*, 953.

57) "Self-Assembled Monolayers of Phosphonic Acids with Enhanced Surface Energy for High-Performance Solution-Processed N-Channel Organic Thin Film Transistors", Liu, D.; Xu, X.; Su, Y.; He, Z.; Xu, J.; **Miao, Q.*** *Angewandte Chemie International Edition*, **2013**, *52*, 6222 6227.

58) "Quantitative Determination of Scattering Mechanism of large-area graphene on conventional and SAM-functionalized Substrates at Room Temperature", Chen, K.; Wan, X. Liu, D.; Kang, Z.; Xie, W.; Chen, J.; **Miao, Q.**; Xu, J.* *Nanoscale*, **2013**, *5*, 5784 5793.

59) "Ambipolar Organic Semiconductors from Electron-Accepting Cyclopenta-Fused Anthracene", Xia, H.; Liu, D.; Xu, X.; **Miao, Q.*** *Chemical Communications*, **2013**, *49*, 4301 4303.
- An invited paper for *Chemical Communications* Emerging Investigators issue 2013

60) "Curved Polycyclic Aromatic Molecules t F -Isoelectronic to Hexabenzocoronene" Luo, J.; Xu, X.; Mao, R. **Miao, Q.*** *Journal of the American Chemical Society*, **2012**, *134*, 13796 13803.

61) "Highly Electron-Deficient Hexaazapentacenes and Their Dihydro Precursors" He, Z.; Mao, R.; Liu D.; **Miao, Q.*** *Organic Letters*, **2012**, *14*, 4190 4193.

62) "High-Quality Large-Area Graphene from Dehydrogenated Polycyclic Aromatic Hydrocarbons", Wan, X.; Chen, K.; Liu, D.; Chen, J.; **Miao, Q.**; Xu, J.* *Chemistry of Materials*, **2012**, *24*, 3906 3915.

63) "Polymer Pen Lithography Using Dual-Elastomer Tip Arrays", Xie, Z.; Shen, Y.; Zhou, X.; Yang, Y.; Tang, Q.; **Miao, Q.**; Su, J.; Wu, H.; Zheng, Z.* *Small*, **2012**, *8*, 2664 2669.

64) "The Application of a High-k Polymer in Flexible Low-Voltage Organic Thin-Film Transistors", Li, J.; Liu, D.; **Miao, Q.**; Yan, F.* *Journal of Materials Chemistry*, **2012**, *22*, 15998 16004.

65) "Hydrogen-Bonded Dihydrotetraazapentacenes" He, Z.; Liu D.; Mao, R.; Tang, Q.; **Miao, Q.*** *Organic Letters*, **2012**, 14, 1050 1053.

66) "Induced Crystallization of Rubrene with Diazapentacene as the Template" Liu, D.; Li, Z.; He, Z.; Xu, J. **Miao, Q.*** *Journal of Materials Chemistry*, **2012**, 22, 4396 4400.
- An invited article for the themed issue on Organic Optoelectronic Materials

67) N-heteropentacenes and .5 reW* nBT/F1 11 Tf1 0 0 1 112.6 183.6 Tm0 g0 G[(N)] TJETQ/4 0 595.5 841.5 r

DOR

70) "Single crystal n-channel field effect transistors from solution-processed silylethynylated tetraazapentacene" Wang, C.; Liang, Z.; Liu, Y.; Wang, X.; Zhao, N.; **Miao, Q.***; Hu, W.*; Xu, J.* *Journal of Materials Chemistry*, **2011**, *21*, 15201 15204.

71) "Degradation Mechanism of Organic Solar Cells with Aluminum Cathode" Wang, M.; Xie, F.; Du, J.; Tang, Q.; Zheng, S.; **Miao, Q.**; Chen, J.; Zhao, N.; Xu, J.* *Solar Energy Materials & Solar Cells*, **2011**, *95*, 3303 3310.

72) "Switching of Non-Helical Overcrowded Tetrabenzoheptafulvalene Derivatives" Luo, J.; Song, K.; Gu, F.; **Miao, Q.*** *Chemical Science*, **2011**, *2*, 2029 2034.

73) "High hole mobility of 1,2-bis[4'-(diphenylamino)biphenyl-4-yl]-1,2-diphenylethene in field effect transistor" Zhao, Z.; Li, Z.; Lam, J. W. Y.; Maldonado, J.-L.; Ramos-Ortiz, G.; Liu, Y.; Yuan, W.; Xu, J.; **Miao, Q.***, Tang, B. Z.* *Chemical Communications*, **2011**, *47*, 6924 6926.

74) "Thermotropic Liquid Crystals Based on 1,8,9,16-Tetrasubstituted Tetraphenylenes and Their Structure Property Relationship Studies" Hau, C.-K.; Chui, S. S.-Y.; Lu, W.; Che, C.-M.; Cheng, P.-S.; Mak, T. C. W.; **Miao, Q.**; Wong, H. N. C.* *Chemical Science*, **2011**, *2*, 1068 1075.

75) "Soluble and Stable N-Heteropentacenes with High Field Effect Mobility" Liang, Z.; Tang, Q.; Xu, J.; **Miao, Q.*** *Advanced Materials*, **2011**, *23*, 1535 1539.
- A Highly Cited Paper identified by the Essential Science Indicators (ESI)

76) "N- G -Deficient Pentacenequinones: Synthesis, Electronic Structures, Molecular Packing and Thin Film Transistors" Liang, Z.; Tang, Q.; Liu, J.; Li, J.; Yan, F.; **Miao, Q.*** *Chemistry of Materials*, **2010**, *22*, 6438 6443.

77) "Performance and stability improvement of P3HT:PCBM based solar cells by thermally evaporated chromium oxide (CrOx) interfacial layer" Wang, M.; Tang, Q.; An, J.; Xie, F.; Chen, J.; Zheng, S.; Wong, K. Y.; **Miao, Q.**; Xu, J.* *ACS Applied Materials & Interfaces*, **2010**, *2*, 2699 2072.

78) "Induced Crystallization of Rubrene in Thin Film Transistors" Li, Z.; Du, J.; Tang, Q.; Wang, F.; Xu, J.; Yu, J. C.; **Miao, Q.*** *Advanced Materials*, **2010**, 22, 3242 3246.
- Inside front cover of *Advanced Materials*, **2010**, volume 22, issue 30.

79) "N-Heteroquinones: Quadruple Weak Hydrogen Bonds and N-Channel Transistors" Tang, Q.; Liang, Z.; Liu, J.; Xu, J.; **Miao, Q.*** *Chemical Communications*, **2010**, 46, 2977 2979.

80) "A Meaningful Analogue of Pentacene: Charge Transport, Polymorphs and Electronic Structures of Dihydrodiazapentacene" Tang, Q.; Zhang, D.; Wang, S.; Ke, N.; Xu, J.; Yu, J. C.; **Miao, Q.*** *Chemistry of Materials*, **2009**, *21*, 1400 1405.

81) "Benzenoid and Quinonoid Nitrogen-Containing Heteropentacenes" Tang, Q.; Liu, J.; Chan, H.S.; **Miao, Q.*** *Chemistry – A European Journal*, **2009**, *15*, 3965 3969.
- Featured in the front page of *Chemistry – A European Journal*, **2009**, volume 15, issue 16.

82) "Transistors from a Conjugated Macrocycle Molecule: Field and Photo Effects" Zhao, W.; Tang, Q.; Chan, H.S.; Xu, J.; Lo, K.Y.; **Miao, Q.*** *Chemical Communications*, **2008**, 4324 4326.

83) "Unexpected Photooxidation of H-Bonded Tetracene" Liang, Z.; Zhao, W.; Wang, S.; Tang, Q.; Lam, S.-C.; **Miao, Q.*** *Organic Letters*, **2008**, *10*, 2007 2010.

Publications from Graduate and Postdoctoral studies (*: corresponding author)

84) "Photoresponsive nanoscale columnar transistors" Guo, X.*; Xiao, S.; Matthew, M.; **Miao, Q.**; Steigerwald, M.L.; Nuckolls, C.* *Proceedings of the National Academy of Science of the United States*, **2009**, 106, 691 696.

85) "Hexathiapentacene: Structure, Molecular Packing and Thin-Film Transistors", Briseno, A.L.; **Miao, Q.**; Ling, M.-M.; Reese, C.; Meng, H.*; Bao, Z.*; Wudl, F.* *Journal of the American Chemical Society*, **2006**, *128*, 15576 15577.

86) "Chemical Complementarity in the Contacts for Nanoscale Organic Field-Effect Transistors" Tulevski, G.S.; **Miao**, **Q.**; Afzali, A.; Graham, T.; Kagan C.*; Nuckolls, C.* *Journal of the American Chemical Society*, **2006**, *128*, 1788 1789.

87) "Organization of Acenes with a Cruciform Assembly Motif " **Miao**, **Q.**; Chi, X.; Xiao, S.; Zeiss, R.; Lefenfeld, M.; Kloc, C.; Steigerwald, M.; Siegrist, T.; Nuckolls, C.* *Journal of the American Chemical Society*, **2006**, *128*, 1340 1345.

88) "Molecular Wires from Contorted Aromatics" Xiao, S.; Myers, M.; **Miao, Q.**, Sanaur, S.; Pang, K.; Steigerwald, M.; Nuckolls, C.* *Angewandte Chemie International Edition*, **2005**, *44*, 7390 7394.

- Front cover of *Angewandte Chemie International Edition* **2005,** volume 44, issue 45.

89) "Self-Assembly and Electronics of Dipolar Linear Acenes", **Miao, Q.**; Lefenfeld, M.; Nguyen, T.-Q. Siegrist, T.; Kloc, C.; Nuckolls, C.* *Advanced Materials* **2005**, *17(4)*, 407 412.

90) "A Recyclable Electrochemical Allylation in Water" Zha, Z.; Hui, A.; Zhou, Y.; **Miao, Q.***; Wang, Z.*; Zhang, H. *Organic Letters* **2005**, *7*, 1903 1905.

91) "Barbier-type reaction mediated with tin nanoparticles in water" Zha, Z.; Qiao, S.; Jiang, J.; Wang, Y.; **Miao**, **Q.***; Wang. Z.* *Tetrahedron*, **2005**, *61*, 2521 2527.

92) "Chemoselective carbonyl benzylation mediated by Zn/CdCl2/InCl3 in tap water", Zhou, C.; Jiang, Y.; Zhou, Y.; Xie, Z., Miao, Q.; Wang, Z. *Letters in Organic Chemistry*, **2005**, *2*, 61 64.

93) "Attaching Organic Semiconductors to Gate Oxides: In Situ Assembly of Monolayer Field Effect Transistors" Tulevski, G.S.; **Miao, Q.**; Fukuto, M.; Abram, R.; Ocko, B.; Pindak, P.; Kagan, C.*; Nuckolls, C.* *Journal of the American Chemical Society*, **2004**, *126*, 15048 15050.

94) "Resonant Raman Scattering in Nanoscale Pentacene Films, " He, R.*; Dujovne, I.; Chen, L.; **Miao, Q.**; Hirjibehedin, C.F.; Pinczuk, A.; Nuckolls, C.; Kloc, C.; Ron. A. *Applied Physics Letters*, **2004**, *84*, 987-989.

95) "Allylation of carbonyl compounds mediated by nanometer-sized bismuth in water", Xu, X.; Zha, Z. **Miao, Q.***; Wang, Z.* *Synlett*, **2004**, *7*, 1171 1174.

96) "Synthesis, Assembly, and Thin Film Transistors of Dihydrodiazapentacene: an Isostructural Motif for Pentacene", **Miao, Q.**; Nguyen, T.-Q.; Someya, T.; Blanchet, G.B.; Nuckolls, C.* *Journal of the American Chemical Society*, **2003**, *125*, 10284 10287.

Invited Presentations

Invited Lectures at Conferences

1) *Symposium: Designed π Systems - Synthesis, Properties, Theory and Function, the 2020 International Chemical Congress of Pacific Basin Societies (Pacifichem 2020)*, Honolulu, Hawaii, USA, Dec. 15-20, 2020.
2) *The 4th International Symposium on the Synthesis and Application of Curved Organic π-Molecules and Materials (CURO-π IV)*, Beijing, China, Sept. 21-24, 2020.
3) *International Meeting on Emerging Macromolecular Materials (POLYMAT Spotlight)*, San Sebastian, Spain, Jun. 23-26, 2020.
4) "A General Supramolecular Platform for OFET-Based Chemical and Biological Sensors", *The 2nd National Symposium on Organic Field Effect Transistors*, Shenzhen, Dec. 12-15, 2019.
5) "Synthesis of Carbon Nanobelts", *The 1st Chem-Reaxys-HKCS symposium*, Hong Kong, Nov. 23, 2019
6) "A General Supramolecular Platform for OFET-Based Chemical and Biological Sensors", *International Conference on Optoelectronic and Microelectronic Technology and Application 2019*, Nanjing, Nov. 7-9, 2019.
7) "Synthesis of Carbon Nanobelts", *The 1st Clar-Müllen Carbon Symposium (CMC)*, X 1 China, Oct. 11-12, 2019.

8) "Crystal Engineering of Organic Semiconductors for High-Performance Organic Thin Film Transistors", *China-Germany Joint Symposium on Conjugated Molecules and Macromolecules in Functional Materials*, Beijing, China, Oct. 6-9, 2019.
9) "From Curved Polycyclic Aromatics to Electronic Materials" (keynote lecture), the NSFC-BHAEC Joint Symposium on Chemistry for New Frontiers, Hong Kong, China, July 29-31, 2019.
10) "From Curved Polycyclic Aromatics to Electronic Materials", *Yanqi Molecular Science Symposium*, Beijing, July 5-6, 2019.
11) "From Curved Polycyclic Aromatics to Materials", *the International Conference on Materials for Advanced Technologies (ICMAT 2019)*, Singapore, Jun. 23-28, 2019.
12) "Synthesis and Applications of Curved Polycyclic Aromatics" (plenary lecture), *the 15th Sino-US Chemistry Professors Conference*, Xinxiang, China, June 16-19, 2019.
13) "Synthesis and Applications of Curved Polycyclic Aromatics", *The 2nd Manchester-Shanghai-Hong Kong Trilateral Symposium on Chemistry Frontiers*, Hong Kong, China, Dec. 17-19, 2018.
14) "A Nine-Year Journey from 0.1 cm^2/Vs to 27.8 cm^2/Vs", *The 1st National Symposium on Organic Field Effect Transistors*, Tianjin, China, Dec. 13-15, 2018.
15) "Interface Engineering and Crystal Engineering for High-Performance Organic Thin Film Transistors", *The 11th National Symposium on Electronic Process in Organic Solids*, Qingdao, China, Oct. 26-29, 2018.
16) "Self-Assemblies and Devices of Curved Organic Semiconductors", at *the 2018 China Mainland-Taiwan-Hong Kong Symposium on Polymer Liquid Crystals and Supramolecular Ordered Structures*, Qingdao, China, Aug. 7-10, 2018.
17) "Toward Negatively Curved Carbons", *The 2nd From Carbon-Rich Molecules to Carbon-Based Materials Conference*, Nassau, Bahamas, Jun. 7-10, 2018.
18) "Interface Engineering and Crystal Engineering for High-Performance Organic Thin Film Transistors", *ACS Publications Technical Forum on "Nano-, Meso-, and Microstructured Materials for Energy, Electronics and Biotechnology"*, Shenzhen, China, Apr. 15-18, 2018.
19) "Synthesis and Applications of Curved Polycyclic Aromatics", *the 7th Lingnan Symposium on Organic Chemistry*, Guangzhou, China, Nov. 10-13, 2017
20) "Recent Progress in Organic Chemistry of Negatively Curved Nanographenes", Shanghai-Hong Kong Forum on Chemical Synthesis, Shanghai, China, Sept. 1-2, 2017
21) "Recent Progress in Organic Chemistry of Negatively Curved Nanographenes", *International ERATO Itami Molecular Nanocarbon Symposium 2017*, Nagoya, Japan, Aug. 2-4, 2017.
22) "Recent Progress in Organic Chemistry of Negatively Curved Nanographenes", *The 17th International Symposium on Novel Aromatics (ISNA 17)*, Stony Brook, NY, USA, July 23-28, 2017.
23) "Thin Film Transistors of Non-Planar Organic Semiconductors and Their Applications for Chemical Sensing", *International Workshop of Recent Advances in Organic Bioelectronics*, Hong Kong, China, Jun. 8-10, 2017.
24) "Interface Engineering and Crystal Engineering for High-Performance Organic Thin Film Transistors", *Symposium C: Functionalized π-Electron Materials and Devices, the International Conference on Materials for Advanced Technologies (ICMAT 2017)*, Singapore, Jun. 18-23, 2017.
25) "Synthesis and Applications of Novel Non-planar Polycyclic Arenes", the 1st Manchester-Shanghai-Hong Kong Trilateral Symposium on Chemistry Frontiers, Shanghai, China, Apr. 3 4, 2017.
26) "Synthesis of Novel Non-planar Polycyclic Arenes by Controlling Scholl Reactions", *The 14th International Symposium for Chinese Organic Chemists (ISCOC) and the 11th International Symposium for Chinese Inorganic Chemists (ISCIC)*, Singapore, Dec. 8-10, 2016.
27) "From Nonplanar Polycyclic Arenes to Carbon-rich Materials" (keynote lecture), *The 12th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XII)*, Changsha, China, Oct. 14-19, 2016.

28) "Novel Non-planar Polycyclic Arenes Synthesized By Controlling Scholl Reactions", *The 2nd International Symposium on the Synthesis and Application of Curved Organic π-Molecules and Materials (CURO-π II),* Eugene, Oregon, USA, Sept. 12-14, 2016.

29) "Novel Self-assembled Monolayers and High-Performance Organic Thin Film Transistors" (plenary lecture), at *the 2016 China Mainland-Taiwan-Hong Kong Symposium on Polymer Liquid Crystals and Supramolecular Ordered Structures*, Nanchang, China, Aug. 2-5, 2016.

30) "Recent Progress of n-channel Organic Thin Film Transistors", *Symposium 20: Photonic and Electronic Functional Devices*;
and "Synthesis of Negatively Curved Polycyclic Arenes", *Symposium 9: Organic Chemistry, the 30th Annual Meeting of Chinese Chemical Society*, Dalian, China, July 1-4, 2016.

31) "From Non-Planar Polycyclic Arenes to Carbon-Rich Materials", *Symposium 25: Designed π Systems - Synthesis, Properties, Theory and Function, the 2015 International Chemical Congress of Pacific Basin Societies (Pacifichem 2015),* Honolulu, Hawaii, USA, Dec. 15-20, 2015.

32) "Molecular Assemblies in High-Performance Organic Thin Film Transistors", *The 10th National Symposium on Electronic Process in Organic Solids*, Beijing, China, Aug. 7-10, 2015.

33) " -Systems and Materials by Molecular Engineering of Pentacene and HBC" *Symposium U: Functional pi-Systems, Materials and Devices, the International Conference on Materials for Advanced Technologies (ICMAT)*, Singapore, Jun. 28 - Jul. 3, 2015.

34) "Self-Assembled Monolayers for High-Performance Organic Thin Film Transistors", *The 13th International Conference of Polymers for Advanced Technologies (PAT2015)*, Hangzhou, China, Jun. 25-28, 2015.

35) "Novel Curved Polycyclic Arenes by Tailoring HBC: Synthesis, Assemblies and Devices", at *International Symposium on the Synthesis and Application of Curved Organic π-Molecules and Materials,* Kyoto, Japan, Oct. 19-21, 2014.

36) "Self-assembled Monolayers of Non-planar Polycyclic Conjugated Molecules and Novel Phosphonic Acids", at *the 2014 China Mainland-Taiwan-Hong Kong Symposium on Polymer Liquid Crystals and Supramolecular Ordered Structures,* Changchun, China, Aug. 12-16, 2014.

37) "Novel Non- -Molecules and Their Applications", at *Session: Novel Functional π-Systems and Materials, the 15th Asian Chemical Congress,* Singapore, Aug. 19-23, 2013.

38) "Tailoring Stars of Organic Semiconductors", at *International Young Chemist Symposium on Functional π-Systems toward Molecular Electronics,* Nara, Japan, Aug. 7, 2013.

39) "N-Heteropentacenes: From Molecules to Solution-Processed Organic Semiconductors", at *Collaborative Conference on Materials Research (CCMR 2013),* Jeju Island, South Korea, Jun. 24-28, 2013.

40) "Molecular Engineering and Interface Engineering of Thin Film Transistors of N-heteropentacenes", at *International Symposium on Functional Organic Materials and Devices (ISFOMD),* Lanzhou, China, Jun. 7-9, 2013.

41) "Interface Engineering of Organic Thin Film Transistors with Self-Assembled Phosphonic Acids", at *the BASF and CAS Joint Workshop*, Beijing, China, Mar. 4-5, 2013.

42) "Novel Structures for High-Performance N-Type Organic Semiconductors", at *the 9th National Symposium on Electronic Process in Organic Solids*, Yangzhou, China, Nov. 10-12, 2012.

43) "N-Heteropentacenes: From Molecules to Semiconductors" at *Symposium Z: Conjugated Organic Materials for Energy Conversion, Energy Storage, and Charge Transport, the 2012 MRS Spring Meeting & Exhibit*, San Francisco, California, USA, Apr. 9-13, 2012.

44) "High-Performance Organic Materials with Pyrazine and Cycloheptatriene as Novel Building Blocks" at t*he 6th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOA-6), Asian Core Program*, Hong Kong, China, Dec. 11-15, 2011.

45) "Novel Applications of Pentacenequinones in Organic Thin Film Transistors: from a Template to N-Type Semiconductors" at *Symposium 225 Organic Electronic Materials: From Small Molecules to Conducting Polymers, the 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010)*, Honolulu, Hawaii, USA, Dec. 15-20, 2010.

Departmental Seminars

1) Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Nov. 7, 2019
2) College of Chemistry & Chemical Engineering, Shanghai Jiaotong University, Nov. 6, 2019
3) College of Chemistry & Chemical Engineering, Lanzhou University, Jun. 10, 2019
4) Organic Chemistry Institute, Ruprecht-Karls-Universität Heidelberg, May 24, 2019
5) Department of Chemistry and Pharmacy, Friedrich-Alexander-Universität Erlangen-Nürnberg, May 20, 2019
6) Department of Chemistry, University of Science and Technology of China, Sept. 14, 2018
7) College of Chemistry and Chemical Engineering, Anhui University, Sept. 14, 2018
8) Department of Chemistry, Ulsan National Institute of Science and Technology, May 15, 2018.
9) Institute of Chemistry, Chinese Academy of Sciences, Jan. 6, 2018.
10) College of Chemistry and Molecular Engineering, Peking University, Jan. 5, 2018.
11) Department of Chemistry, Tianjin University, Jan. 4, 2018.
12) Department of Chemistry, Shanghai Normal University, Jan. 2, 2018.
13) Department of Chemistry, Hunter College, The City University of New York, July 26, 2017.
14) College of Material Science and Engineering, Shenzhen University, June 17, 2016.
15) Department of Materials Science and Engineering, University of Science and Technology of China, Oct. 19, 2015.
16) School of Materials Science and Engineering, Nanyang Technological University, Jul. 1, 2015.
17) College of Chemistry & Chemical Engineering, Lanzhou University, Jun. 1, 2015.
18) Department of Mechanical Engineering, Hong Kong University, Mar. 10, 2015.
19) School of Materials Science and Engineering, Nanyang Technological University, Aug. 21, 2013.
20) Department of Chemistry, Graduate School of Science, Kyoto University, Aug. 9, 2013.
21) Institute of Chemistry, Chinese Academy of Sciences, Mar. 6, 2013
22) Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Nov. 8, 2012
23) Department of Chemistry, Hong Kong University of Science and Technology, Feb. 16, 2012
24) National Center for Nanoscience and Technology, China, Jun. 13, 2011.
25) Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Sept. 3, 2010.
26) College of Chemistry and Molecular Engineering, Peking University, Dec. 10, 2009.
27) Shenzhen graduate school, Peking University, Feb. 26, 2009.
28) Department of Biology and Chemistry, City University of Hong Kong, Jun. 17, 2008.
29) Department of Chemistry, Tsinghua University, Dec. 3, 2007.
30) Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Jun. 28, 2007.
31) Department of Chemistry, University of Science and Technology of China, Dec. 25, 2006.

Patents

1) "Self-assembled Monolayers of Phosphonic Acids as Dielectric Surfaces for High-Performance Organic Thin Film Transistors",
U.S. Patent No. 9,701,698 B2 (July 11, 2017)

P. R. China patent No.: 201580000780.2 (May 10, 2019)

2) "N-Heteropentacene Derivatives and Method for Preparing the Same", US provisional patent filed on Feb. 23, 2011 (Application No. 61/445,943).

Research Grants Awarded

As Principle Investigator or Project Coordinator:

1) "Covalent and Noncovalent Networks of Negatively Curved Nanographenes", the Research Grant Council of Hong Kong, General Research Fund 2019-20 (reference number: 14300919), amount: HK$558,272, from 01/01/2020 to 31/12/2022.
2) "Curved Polycyclic Arenes: A New Frontier of Carbon Nanoscience and Application in Bioelectronic Noses", Croucher Senior Research Fellowship 2019, amount: HK$2,000,000, from 01/09/2019 to 31/08/2022.
3) Academic Equipment Grant (2018-2019) of CUHK for a Recycling Preparative HPLC system, amount: HK$260,000.
4) "Negatively Curved Nanographenes and Carbon Nanobelts Containing Heptagons", the Research Grant Council of Hong Kong, General Research Fund 2018-19 (reference number: 14300218), amount: HK$505,298, from 01/01/2019 to 31/12/2021.
5) "Synthesis and Applications of Linear and Hoop-Shaped N-Heteroarenes Containing Four-Membered Rings", the Research Grant Council of Hong Kong, General Research Fund 2017-18 (reference number: 14300217), amount: HK$784,347, from 01/11/2017 to 31/10/2020.
6) Academic Equipment Grant (2017-2018) of CUHK for a High Vacuum Thermal Evaporator, amount: HK$226,000.
7) "Non-planar Polycyclic Arenes: From Molecules to Materials", the Research Grant Council of Hong Kong, Collaborative Research Fund 2014/15 (reference number: C4030-14G), total amount: HK$6,300,000, from 1/6/2015 to 31/7/2018.
8) "Functionalized Hexabenzoperylenes: Synthesis, Self-Assemblies and Applications", the Research Grant Council of Hong Kong, General Research Fund 2014-15 (reference number: 14303614), amount: HK$483,065, from 01/01/2015 to 31/12/2017.
9) "Molecular Engineering and Crystal Engineering of N-Heteroacenes: N-Phenylation, Co-crystals and Applications", the Research Grant Council of Hong Kong, General Research Fund 2013-14 (reference number: 402613), amount: HK$974,193, from 01/01/2014 to 31/12/2016.
10) "Heptagon-Embedded Polycyclic Aromatic Hydrocarbons: Synthesis, Properties and Applications", the Research Grant Council of Hong Kong, General Research Fund 2012-13 (reference number: 402412), amount: HK$775,000, from 01/01/2013 to 31/12/2015.
11) "Clathrates of Aryl Tetracenes and Their Applications in Chemical Vapor Sensors Based on Organic Thin Film Transistors", the Research Grant Council of Hong Kong, General Research Fund 2011-12 (reference number: 402011), amount: HK$710,000, from 01/01/2012 to 31/12/2014.
12) "Development of Novel N-Type Organic Semiconductors Featuring Five-Membered Rings For Organic Solar Cells and Thin Film Transistors", the Research Grant Council of Hong Kong, General Research Fund 2010-11 (reference number: 402810), amount: HK$755,700, from 01/01/2011 to 31/12/2013.
13) "Molecular Engineering of Dihydrotetraazaacenes (DHTAAs) for Organic Thin Film Transistors: Operational Stability, Molecular Ordering, and Solution Processing", the Research Grant Council of Hong Kong, General Research Fund 2008-09 (reference number: 402508), amount: HK$668,417, from 01/01/2009 to 31/12/2011.
14) "H F H J H H -Extended 6l6 -Binaphthyls", CUHK Research Committee Direct Grant for Research (project ID: 2060381), amount: HK$60,000, from 01/03/2010 to 29/02/2012.

15) "Integrating Pentagons into Hexagons: Tuning Molecular Orbital Levels to Develop Novel Ambipolar Organic Semiconductors", CUHK Research Committee Direct Grant for Research (project ID: 2060325), amount: HK$80,000, from 01/03/2008 to 28/02/2010.

16) "Iodinated Acenes: A New Approach to Organic Semiconductors with High Charge Carrier Mobility", CUHK Research Committee Direct Grant for Research (project ID: 2060302), amount: HK$100,000, from 01/03/2007 to 28/02/2009.

17) Academic Equipment Grant (2006-2007) of CUHK for a High Vacuum Thermal Evaporator, amount: HK$230,000.

As Co-Investigator or Co-Principle Investigator:

18) "Development of New Methodologies for New Carborane Materials", the Research Grant Council of Hong Kong, Collaborative Research Fund 2012/13 (reference number: CUHK7/CRF/012G), total amount: HK$8,000,000, from 1/6/2013 to 31/5/2016. HK$1,000,000 was allocated to Qian Miao.

19) Institute of Molecular Functional Materials, Areas of Excellence Scheme, University Grants Committee (project ID: AoE/P-03/08), total amount: HK$80,000,000, from 01/01/2010 to 31/12/2018. HK$1,297,000 (including matching fund from CUHK) was allocated to Qian Miao in 2010-2016.

20) "Interface Engineering for Organic Transistors: Materials, Fabrication, Characterization, and Application", the Research Grant Council of Hong Kong, Collaborative Research Fund 2008/09 (reference number: CUHK2/CRF/08), total amount: HK$4,000,000, from 01/06/2009 to 31/05/2012. Qian Miao was the *deputy project leader* for this project.

21) "Interface Engineering for Organic Transistors: Materials, Fabrication, Characterization, and Application", CUHK Research Committee Group Research Scheme 2008-09 (project ID: 3110037), total amount: HK$1,200,660, from 01/04/2009 to 31/03/2012.

22) "Interface Engineering for Organic/Solid Hybrid System: Materials, Fabrication, Characterization, and Application", CUHK Research Committee Group Research Scheme 2007-08 (project ID: 3110033), total amount: HK$416,000, from 01/04/2008 to 30/09/2009.

Teaching Experience

Lecture Courses:

CHM5642 Supramolecular Chemistry (2007-2008 to present)
CHM1280 Introduction to Organic Chemistry and Biomolecules (2009-2010 to present)
CHM5660 Advanced Organic Chemistry: Structure and Mechanism (2008-2009)
CHM3232 Amines, Arenes and Heterocycles (2008-2009)
CHM5730 Special Topics in Chemistry (2007-2008)
CHM5910 Current Topics in Chemistry (2006-2007)

Other Courses:

GEC0413 Chung Chi College Senior Seminar (2007-2008, 2014-2015, 2015-2016)
GEJC1110 College, University and Community: STOT (2010-2011, 2011-2012)

Students and Postdoctoral Researchers Supervised

Graduate Students

1) Zhao, Wei (M. Phil. 2008, currently at GF Securities Co. Ltd.)
2) Zheng, Xing (M. Phil. 2010, currently at Fujian Huamin Industrial Group Company Ltd.)
3) Liang, Zhixiong (PhD 2011, currently a senior scientist at Rohm and Haas Electronic Materials Asia Ltd., the Dow Chemical Company)
4) Tang, Qin (PhD 2011, currently a senior scientist at Rohm and Haas Electronic Materials Asia Ltd., the Dow Chemical Company)
5) Mao, Renxin (M. Phil. 2012)
6) He, Zikai (PhD 2013, currently an associate professor at Harbin Institute of Technology

Shenzhen)

7) Luo, Jiye (PhD 2013, currently an associate professor at Guangdong University of Technology)
8) Xia, Hai (PhD 2013, currently a senior engineer at Shenzhen Boardtech Co. Ltd.)
9) Liu, Danqing (PhD 2014, currently a lecturer at Shenzhen University)
10) Xu, Xiaomin (PhD 2015, Hong Kong PhD Fellowship, currently an assistant professor at Tsinghua-Berkeley Shenzhen Institute)
11) Shan, Liang (PhD 2015, currently a senior engineer at Shenzhen Institute of Advanced Technology, CAS)
12) Cheung, Kwan Yin (PhD 2016, currently a Croucher Postdoctoral Fellow at Nagoya University)
13) Gu, Xiao (PhD 2016, Hong Kong PhD Fellowship, currently a research scientist at STA Pharmaceutical Co., Ltd.)
14) Yang, Xuejin (PhD 2017, currently a postdoctoral researcher at University of Wisconsin-Madison)
15) Yang, Yong (PhD 2017, currently a postdoctoral researcher at University of Zurich)
16) Shan, Bowen (PhD 2018, currently a project manager at Huierli Biotech Inc. Shenzhen)
17) Li, Changqing (PhD 2018, currently a postdoctoral researcher at Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)
18) Zhang, Binghao (MPhil 2018, currently a PhD student at City University of Hong Kong)
19) Pun, Sai Ho (PhD 2019, currently a postdoctoral researcher at the Chinese University of Hong Kong)
20) Chu, Ming (PhD 2019, currently a Senior Chemical Engineer at First Union Group)
21) Wang, Jinlian (PhD 2019, currently an associate professor at Shaanxi University of Science and Technology)
22) Zhao, Mengna (PhD student, 3rd year, Hong Kong PhD Fellowship)
23) Wang, Yujing (PhD student, 3rd year)
24) Chen, Han (PhD student, 3rd year)
25) Zhang, Yiqun (PhD student, 2nd year)
26) Gao, Man (PhD student, 2nd year)
27) Gong, Qi (PhD student, 1st year)
28) Xiong, Yongming (PhD student, 1st year)
29) Zeng, Xingwei (PhD student, 1st year)
30) Ye, Liping (PhD student, 1st year)

Undergraduate Students

1) Lam, Sheung-Chuen (summer 2007)
2) Lo, Ka Yuen (summer 2007)
3) Lau, Wing Hei (summer 2009)
4) Lee, Rennie (summer 2013)
5) Ng, Yik Kwong (summer 2014)
6) Yuen, Yiu Shing (summer 2015)
7) Chan, Yik Tin (summer 2016)
8) Cheung, Ka Man (summer 2019)

Postdoctoral researchers

1) Li, Zhefeng (2009-2010; PhD from Changchun Institute of Applied Chemistry, Chinese Academy of Sciences; currently an associate professor at Chongqing University)
2) Xie, Minghua (2011-2012; PhD from Zhejiang University; currently an associate professor at Yancheng Institute of Technology)
3) Cheung Kwan Yin (2016-2018: PhD from the Chinese University of Hong Kong; currently a Croucher Postdoctoral Fellow at Nagoya University)
4) Yang, Shuaijun (2013-2018; PhD from Sichuan University; currently a lecture at University of Jinan)
5) Xia, Zeming (2018 - present; PhD from Sun Yat-sen University)

6) Pun, Sai Ho (2019 - present; PhD from the Chinese University of Hong Kong)

Visiting Graduate Students

1) Kohtaro Takhashi (2015, Nara Institute of Science and Technology, Japan)
2) Yuto Tamura (2016, Nara Institute of Science and Technology, Japan)
3) Thomas Wiesner (2019, Ruprecht-Karls-Universität Heidelber)