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B.S. in Chemical Engineering
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Research and Professional Interests

Polymers for Electronics
-Polymers for Optoelectronics
LED, Transistors, Solar Cells, and Memory

Polymers for Photonics
-Conjugated Polymer Nanofibers
-Organic-Inorganic Hybrid Thin Films

Amphiphilic Block Copolymers
-Living polymerization
-Nanostructured Materials

Journal Papers

1. S. Fukuta, H. C. Wu, T. Koganezawa, Y. Isshiki, M. Ueda, **W. C. Chen**, and T. Higashihara “Synthesis and FET characterization of Novel Ambipolar and Low-bandgap naphthalene-diimide-based semiconducting polymers”, *J. Polym. Sci. Part A: Polym. Chem.*, 54, 359-367 (2016). (SCI, EI)
2. J. Aimi, C. T. Lo, H. C. Wu, C. F. Huang, T. Nakanishi, M. Takeuchi, and **W. C. Chen**, “Phthalocyanine-Cored Star-Shaped Polystyrene for Nano Floating Gate in Nonvolatile Organic Transistor Memory Device”, *Adv. Electron Mater.*, 2, 1500300 (2016).
3. H. S. Sun, Y. Chen, W. Y. Lee, Y. C. Chiu, T. Isono, T. Satoh, T. Kakuchi, and **W. C. Chen**, “Synthesis, Morphology, and Electrical Memory Application of Oligosaccharide-based Block Copolymers with π -Conjugated Pyrene Moiety and Their Supramolecules”, *Polym. Chem.*, 7, 1249-1263 (2016) (**Featured on issue inside front cover**). (SCI, EI)
4. T. Kurosawa, Y. C. Chiu, Y. Zhou, X. Gu, **W. C. Chen**, and Z. Bao, “Impact of polystyrene oligomer side chains on naphthalenediimide-bithiophene polymers as n-type semiconductors for organic field-effect transistors”, *Adv. Funct. Mater.*, 26, 1261-1270 (2016). (SCI, EI)
5. C. C. Shih, W. Y. Lee, Y. C. Chiu, H. W. Hsu, H. C. Chang, C. L. Liu, and **W. C. Chen**, “High Performance Transparent Transistor Memory Devices Using Nano-Floating Gate of Polymer/ZnO Nanocomposites”, *Sci. Rep.*, 6, No.20129 (2016). (SCI, EI)
6. J. H. Wu, **W. C. Chen**, and G. S. Liou, “Triphenylamine-Based Luminogens and Fluorescent Polyimides: Effects of Functional Group and Substituent on Photophysical Behaviors”, *Polym. Chem.*, 7, 1569-1576 (2016). (SCI, EI) (工合著)
7. D. Wi, B. J. Ree, B. Ahn, J. C. Hsu, J. Kim, **W. C. Chen**, and M. Ree, “Structural details and digital memory performances of difluorene-containing diblock copolymers in nanoscale thin films”, *Euro. Polym. J.*, 81, 582-597 (2016). (SCI, EI)
8. H. C. Chang, J. T. Wang, D. H. Li, C. Lu, H. W. Hsu, H. C. Wu, C. L. Liu and **W. C. Chen**, “Conjugated Fluorene Moiety-Containing Comb-Like Polymers for Dispersion

- of Single Wall Carbon Nanotubes: Polymer Wrapping Abilities and Electrical Properties”, *Polym. J.*, 48, 421-429 (2016)(**invited paper**, SCI, EI)
9. C. C. Hung, C. C. Kuo, N. K. Weng, W. C. Wu, B. Y. Chen, C. J. Cho, I. J. Hsu, Y. C. Chiu, and **W. C. Chen**,” Novel Highly Sensitive and Reversible Electrospun Nanofibrous Chemosensor–Filters Composed of Poly(HEMA-*co*-MNA) and bpy-F-bpy with Metal-Ion-Modulated Multicolor Fluorescence Emission”, *Polym. J.*, 48, 439-449 (2016)(**invited paper**, SCI, EI).
 10. J. T. Wang, S. Takashima, H. C. Wu, Y. C. Chiu, Y. Chen, T. Isono, T. Kakuchi, T. Satoh, and **W. C. Chen**, “Donor-Acceptor Poly(3-hexylthiophene)-*block*-Pendent Poly(isoindigo) with Dual Roles of Charge Transporting and Storage layer for High-Performance Transistor-Type Memory Applications”, *Adv. Funct. Mater.*, 26, 2695-2705 (2016). (SCI, EI)
 11. C.T. Lo, Y. Watanabe, H. Oya, K. Nakabayashi, H. Mori and **W. C. Chen**, “ Non-Volatile Transistor Memory Devices using Charge Storage Cross-Linked Core-Shell Nanoparticles”, *Chem. Commun.*, 52, 7269 – 7272 (2016). (SCI, EI)
 12. W. Y. Tung, M. H. Li, H. C. Wu, H. Y. Liu, Y. T. Hsieh, and **W. C. Chen**, “High Performance Non-volatile Transistor Memories Utilizing Functional Polyimide-based Supramolecular Electrets”, *Chem.-An Asian J.*, 11, 1631-1640 (2016) (**highlighted by ChemistryViews.org**) (SCI, EI)
 13. C. Lu, W. Y. Lee, and **W. C. Chen**, “Manipulation on the Electrical Characteristics of Nonvolatile Transistor-Type Memory Devices through the Acceptor Strength of Donor-Acceptor Conjugated Copolymers”, *J. Mater. Chem. C*, 4, 5702-5708 (2016). (SCI, EI)
 14. C.-C. Shih, W.-Y. Lee and **W. C. Chen**, “Nanostructured materials for Non-volatile Organic Transistor Memory Applications”, *Mater. Horizons*, 3, 294-308 (2016) (**invited review**). (SCI, EI)
 15. C. T. Lo, H. C. Wu, W. Y. Lee, and **W. C. Chen**, “High-Performance Non-volatile Transistor Memory Devices using Charge-Transfer Supramolecular Electrets”, *React. Funct. Polym.*, 108, 31-38(2016) (**invited paper**). (SCI, EI)
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 17. H. C. Wu, C. W. Hong, and **W. C. Chen**, “Biaxially Extended Thiophene-Isoindigo Donor-Acceptor Conjugated Polymers for High-Performance Flexible Field-Effect Transistors”, *Polym. Chem.*, 7, 4378-4392 (2016). (SCI, EI)
 18. C. C. Hung, H. C. Wu, Y. C. Chiu, S. H. Tung, and **W. C. Chen**, “Crosslinkable High Dielectric Constant Polymer Dielectrics for Low Voltage Organic Field-effect Transistor Memory Devices“, *J. Polym. Sci. Part A: Polym. Chem.*, 54, 3224-3236 (2016). (SCI, EI) (工合著)
 19. J. T. Wang, K. Saito, H. C. Wu, H. S. Sun, C. C. Hung, Y. Chen, T. Isono, T. Kakuchi, T. Satoh and **W. C. Chen**, “High Performance Stretchable Resistive Memories Using Donor-Acceptor Block Copolymers with Fluorene Rods and Pendent Isoindigo Coils”, *NPG Asia Mater.*, 8, e298 (2016). (SCI, EI)

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21. J. Wang, C. Lu, T. Higashihara, and **W. C. Chen**, “All-Conjugated Donor-Acceptor Graft/Block Copolymers as Single Active Components and Surfactants in All-polymer Solar Cells”, *Microsyst. Technol.*, DOI 10.1007/s00542-016-3033-x (2016). (SCI, EI)
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25. C. Lu, W. Y. Lee, X. Gu, J. Xu, H.-H. Chou, H. Yan, Y. C. Chiu, M. He, J. R Matthews, W. Niu, J. B.-H. Tok, M. F. Toney, **W. C. Chen**, and Z. Bao, “Effects of Molecular Structure and Packing Order on the Stretchability of Semicrystalline Conjugated Poly(Tetrathienoacene-diketopyrrolopyrrole) Polymers”, *Adv. Electron. Mater.*, 3, 1600311(2017).
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30. C. C. Hung, Y. C. Chiu, H. C. Wu, C. Lu, C. Bouilhac, I. Otsuka, S. Halila, R. Borsali, S. H. Tung, and **W. C. Chen**, “Conception of Stretchable Resistive Memory Devices based on Nanostructure-Controlled Carbohydrate-block-Polyisoprene Block Copolymers”, *Adv. Funct. Mater.*, 27, 1606161 (2017). (SCI, EI) (工合著)

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37. F. C. Liang, C. C. Kuo, B. Y. Chen, C. J. Cho, C. C. Hung, **W. C. Chen**, and R. Borsali, “RGB-Switchable Porous Electrospun Nanofiber Chemoprobe-filter Prepared from Multifunctional Copolymers for Versatile Sensing of pH and Heavy Metals”, *ACS Appl. Mater. Interface*, 9, 16381-16396 (2017). (SCI, EI)
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52. P. C. Tsai, J. Y. Chen, E. Ercan, C. C. Chueh, S. H. Tung, and **W. C. Chen**, “Uniform luminous perovskite nanofibers with color-tunability and improved stability prepared by one-step core/shell electrospinning”, *Small*, 14, 1704379 (**Featured as issue back cover**). (SCI, EI) (工合著)
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Conference Papers

1. Y. C. Chiu, C. C. Shih, W. Y. Lee, H. C. Chang, Y. H. Chou, and **W. C. Chen**, “Nonvolatile Transistor Memory Devices Based on Nanostructured Polymeric Materials“, *The 12th Cross-Strait Workshop on Nanoscience and Nanotechnology*, Taipei, Taiwan, March 22-25, 2016. (**Invited lecture**)
2. **W. C. Chen**, “Donor-Acceptor Block Copolymers for Organic Electrical memory Device Applications”, *Taiwan-Japan Bilateral Polymer Symposium*, Hsinchu, Taiwan, September 7-9, 2016. (**Invited lecture**)
3. C. C. Shih, J. T. Wang, Y. C. Chiu, and **W. C. Chen**, “Nonvolatile Transistor Memory Devices Based on Nanostructured Polymeric Materials“, *The third International Conference on Advanced Materials and Nanotechnology*, Hanoi, Vietnam, October 2-5, 2016. (**Plenary lecture**)
4. C. C. Hung, C. W. Hong, H.-S. Sun, H. C. Wu, T. Higashihara, and **W. C. Chen**, “Intrinsically Stretchable Isoindigo-Based Semiconducting Polymer Thin Films with a Field-Effect Mobility Exceed $8 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$ ”, *2016 Cross-Strait Polymer Symposium, Puli, Taiwan*, Oct. 31-Nov.2, 2016. (**Invited lecture**)
5. **W. C. Chen**, “Semiconducting Polymers for Stretchable Electronics”, *13th International Symposium on Functional π -Electron Systems (Fpi-13)*, Hong Kong, on June 4-9, 2017. (**Invited lecture**)

6. C. C. Hung, Y. C. Chiu, H. C. Wu, C. Bouilhac, R. Borsali, S. H. Tung, and **W. C. Chen**, “Nanostructure-Controlled Carbohydrate-based Linear- and Star-shaped Block Copolymers For Electrical Memory Device”, 15th Pacific Polymer Conference, Xiamen, China, Dec.10-14, 2017. (**Invited lecture**)
7. **W. C. Chen**, “Organic Polymers for Stretchable Electronics”, 2018 Taiwan-Japan Bilateral Polymer Symposium (Chia-Yi, Taiwan, Sept. 30-Oct. 2, 2018). (**Plenary lecture**)
8. P. C. Tsai, J. Y. Chen, E. Ercan, C. C. Chueh, S. H. Tung, and **W. C. Chen**, “Uniform luminous perovskite nanofibers with color-tunability and improved stability prepared by one-step core/shell electrospinning”, 34th International Conference of Polymer Processing Society (Taipei, Taiwan, May 21-25, 2018). (**Keynote speech**)
9. C. C. Hung, S. Nakahira, T. Isono, S. H. Tung, T. Satoh, and **W. C. Chen**, “Molecular Architecture Effect of Oligosaccharide-based Block Copolymers for Stretchable Electrical Device Applications”, in the symposium of *Synthesis, Processing & Device Engineering of Polymeric Electronic Materials*, in 256th ACS National Meeting (Boston, MA, August 19-23, 2018). (**Invited Lecture**)
10. C. C. Hung, S. Nakahira, T. Isono, S. H. Tung, T. Satoh, and **W. C. Chen**, “Molecular Architecture Effect of Oligosaccharide-based Block Copolymers for Stretchable Electrical Device Applications” 2018 Korea Polymer Society Fall National Meeting (Gyeongju, Korea, Oct.11-12, 2018). (**Invited Lecture**).
11. E. Ercan, P.-C. Tsai, J.-Y. Chen, and **W.-C. Chen**, “Perovskite/Polymer Luminous Hybrid Nanofibers”, *Japan-Taiwan Bilateral Polymer Symposium* (July 23-27, 2019, Matsue, Japan). (**Invited Lecture**)
12. **W.-C. Chen**, “Semiconducting Polymers for Stretchable Electronics through Side Chain Engineering”, Annual Meeting of Society of Polymer Society, Japan (Sept. 25-28, 2019, Fukui, Japan). (**Invited Lecture**)
13. **W.-C. Chen**, “Develop the Organic Polymers and Nanostructured Materials for Electronic and Optoelectronic Applications”, *The 2nd International Conference on Nanomaterials and Advanced Composites* (Taipei, Taiwan, August 9-11, 2019). (**Plenary lecture**)
14. E. Ercan, P.-C. Tsai, J.-Y. Chen, and **W.-C. Chen**, “Stretchable and Ambient Stable Perovskite/Polymer Luminous Hybrid Nanofibers of Multicolor Fiber Mats”, 16th Pacific Polymer Conference (Singapore, Dec.8-12, 2019). (**Invited Lecture**)

Book/Chapter

1. **W. C. Chen**, ed., “Organic Electrical Memory Materials and Devices”, RSC book series, Royal Society of Chemistry, London, UK (2015).

Honors

1. 榮獲行政院國家科學委員會傑出研究獎 (2004-2007, 2009-2012, 2012-2015) 。

2. 榮膺英國皇家化學學會會士(Fellow, Royal Society of Chemistry) 。
3. 指導學生吳泓錦、洪千雯與陳蓉瑤同學參加 2015 中華民國高分子學會年會競賽項目中贏得獎項(2015) 。
4. 榮獲第十三屆有庠科技獎奈米科技講座(2015) 。
5. 指導博士生羅承慈同學榮獲 2014 年【巴斯夫博士生創新論文獎】並獲選參加 2015 巴斯夫德國夏令營(2015) 。
6. 指導博士生 Jau-Tzeng Wang 榮獲 2015 Japan-Taiwan Bilateral Polymer Symposium 最佳壁報獎 (2015) 。
7. 指導博士後研究員邱昱誠 獲科技部 104 年度博士後研究人員學術著作(2016) 。
8. 指導 專題生王燕婷 同學，榮獲 104 年度大專學生研究計畫研究創作獎(2016) 。
9. 榮獲第 60 屆教育部學術獎 (工程及應用科學類, 2016) 。
10. 指導博士後研究員吳泓錦 獲科技部 105 年度博士後研究人員學術著作獎(2017) 。
11. 指導 專題生曾尹澤同學，榮獲 105 年度大專學生研究計畫研究創作獎，2017 。
12. 指導陳蓉瑤獲博士科技部博士後研究人員學術著作獎(2018) 。
13. 榮獲台法科技獎，科技部及法國法蘭西科學院 (2018) 。
14. 院士，亞太材料科學院 (2019) 。
15. 國際獎，日本高分子學會 (2019) 。
16. Fellow, International Association of Advanced Materials (2020)
17. 第24屆國家講座，教育部(2020) 。

Editorial Board of International Journals

1. Editorial Board, *Reactive and Functional Polymers* (2007/5~, SCI, Elsevier)
2. Editorial Board, *NPG Asia Materials* (2008/2-now, SCI, Nature Asia-Pacific).
3. Editorial Board, *Journal of Polymer Research* (2009/8~, SCI, Springer).
4. Associate Editor, *Polymer Journal* (2011/7~, SCI journal published by NPG Nature Asia-Pacific)

5. Guest Editor on special issue, "Current progress in advanced polymer materials for electronics/photonics functions", *Reactive and Functional Polymers* (2016).
6. Guest Editor on the special issue: "Polymer Surfaces, Interfaces and Thin films", *Polymer Journal*, (2015-2016).
7. Guest Editor on the special issue: "Photo and Electro-functional Polymers and Molecular Assemblies", *Polymer Journal*, (2016).

Committee Members of International Conferences

1. **Committee Member**, *Printed Memory and Circuits*, SPIE meeting, San Diego, USA, August 9-13, 2015.
2. **Co-Organizer**, *Japan-Taiwan bilateral polymer Symposium*, Sapporo, Japan, September 2-6, 2015.
3. **International Advisory Board**, *Non-volatile Memory Devices: materials, emerging concepts and applications*, 5th International Conference Smart and Multifunctional Materials, Devices, Structures (Perugia, Italy, June 5-10, 2016).
4. **Program Committee member**, *Printed Memory and Circuits*, SPIE meeting San Diego, USA, August 28-Sept.1, 2016.
5. **Committee Member**, *Taiwan-Japan Bilateral Polymer Symposium*, Hsinchu, Taiwan, September 7-10, 2016.
6. **Committee Member**, *2016 Cross-Strait Polymer Symposium*, Puli, Taiwan, Oct. 31-Nov.2, 2016.
7. **International Advisory Board Member**, *The third International Conference on Advanced Materials and Nanotechnology*, Hanoi, Vietnam, October 2-5, 2016
8. **Co-organizer**, *2017 Taiwan-Japan Bilateral Polymer Symposium*, Yonezawa, Sept. 5-8, 2017.
9. **International Advisory Board**, the *3rd International Conference "Emerging Materials, Technologies and Applications for Non-volatile Memory Devices"* of the 8th Forum on New Materials", Salsomaggiore Terme, Italy, June 10-14, 2017.
10. **Committee member**, "*Hybrid Memory Devices and Printed Circuits III*", SPIE meeting (San Diego, USA, August 6-10, 2017).
11. **Committee member**, "*Hybrid Memory Devices and Printed Circuits*", SPIE meeting (San Diego, USA, August 19-23, 2018).
12. **Committee member**, *2018 Taiwan-Japan Bilateral Polymer Symposium*, Chia-Yi, Taiwan, Sept. 30-Oct. 2, 2018).
13. **Committee member**, "*Taiwan-China Bilateral Polymer Symposium*" (Chengdu, China, Oct.17-20, 2018).
14. **Chair**, "Asia Deans' Forum", (Taipei, Taiwan, May 29-31, 2019).

15. **Chair**, “2019 Federation of Asia Polymer Society Conference”, (Taipei, Taiwan, October 27-30, 2019).

Others

1. 中華民國高分子學會理事長 (2018-now)
2. 台灣化學產學科技協進會理事 (2006-2012), 監事 (2015-2018)
3. 經濟部技術處兼任科技顧問(2015/4~2017)
4. 科技部深耕工業基礎計畫領域召集人(2015/2~2018/2)
5. 科技部工程司產學合作計畫領域召集人(2018/2~)
6. 第五屆國家產業創新獎民生福祉領域召集人 (2016/7-2017)
7. 科技部綠能聯合研發計畫創能領域召集人(2018/2~)
8. 亞洲高分子聯合學會會長(2019/11~)

International Cooperation Project (國際合作計畫)

1. 自組裝奈米結構之醣類雙嵌段高分子薄膜於電晶體型記憶體元件應用 (3/3), Sugar-Based Block Copolymer Self-Assembly Nano-Organized Thin Films For Transistor Memory Devices (3/3) MOST 104-2923-E-002-003-MY3 , NTD 1,673,000,2017/1/1~2017/12/31 (台法雙邊國合計畫)

主辦國際會議或活動

1. *Japan-Taiwan bilateral polymer Symposium*, Sapporo, Japan, September 2-6, 2015, 參加人數約 100 人。
2. *Japan-Taiwan bilateral polymer Symposium*, Yonezawa, Japan, September 5-8, 2017, 參加人數約 100 人。
3. *Asia Deans' Forum*, Taipei, Taiwan, May 29-31, 2019, 參加人數約 100 人。
4. *Federation of Asia Polymer Society Conference*, Taipei, Taiwan, October 27-30, 2019, 參加人數約 100 人。