Chen, Wen-Chang （陳文章）
Professor

Education
B.S. in Chemical Engineering
National Taiwan University, 1985
Ph.D. in Chemical Engineering
University of Rochester, 1993

Research and Professional Interests
Polymers for Electronics
- Conjugated Polymers for Optoelectronics
LED, Transistors, Solar Cells, Memory

Optical Polymers
-Luminescent Polymer Nanofibers
-Organic-Inorganic Hybrid Thin Films

Amiphiphilic Block Copolymers
-Living anionic polymerization and ATRP
-Nanostructured Materials

Conference Papers

1. C. L. Liu, F. C. Tsai, C. C. Chang, and **W. C. Chen**, "New Soluble Conjugated Poly(azomethine)s: Theoretical Design, Synthesis, and Properties", 28th ROC Polymer Symposium, Hsinchu, Taiwan Jan.14~15, 2005. **(invited speech)**.
2. C. L. Liu, C. T. Yen, F. C. Tsai, and **W. C. Chen**, " Small Band Gap Conjugated Polymers: Theoretical Electrical Structures, Synthesis, and Properties", 28th ROC Polymer Symposium, Hsinchu, Taiwan Jan.14~15, 2005.
3. Y. Chang, C. H. Lee, and **W. C. Chen**, "Nanoporous films Prepared From poly(silsesquioxane)/Amphiphilic Block Copolymer or Non-solvent", 28th ROC Polymer Symposium, Hsinchu, Taiwan Jan.14~15, 2005.
4. Y. Y. Yu and **W. C. Chen**, "Synthesis of CdS Nanoparticle/ Porous Poly(Silsesquioxane) Composition Films via Block Copolymers, Their Characteristics of Microstructures and Optoelectronic Properties", 28th ROC Polymer Symposium, Hsinchu, Taiwan Jan.14~15, 2005.
5. Y. W. Wang, C. T. Yen, **W. C. Chen**, and Bao-Tong Dai, "Design, Synthesis, and properties of Polyimide and Their Hybrid Materials for OpticalDevice Applications", Symposium on Nano Device Technology, Hsinchu, May, 2005.
6. Y. Chang, **W. C. Chen**, Y. J.Sheng, S. Jiang and H. K. Tsao, "Molecular Simulation on Intramolecular Janus Segregation of a Heteroarm Star Copolymer", ACS National Meeting, Washington D. C., August 28~September 1, 2005.
7. W. C. Wu, C. L. Liu, and **W. C. Chen, "T**heoretical Analysis on the Geometries and Electronic Structures of Fluorene-based Conjugated Polymers**",** ACS National Meeting, Washington D. C., August 28~September 1, 2005.
8. C. L. Liu, K. H. Hsieh, and **W. C. Chen**, " Theoretical Analysis on the Geometries and Electronic Structures of Coplanar Conjugated Poly(azomethine)s", ACS National Meeting, Washington D. C., August 28~September 1, 2005.

9. C. L. Pai, and **W. C. Chen**, "Theoretical Studies on Thiophene Based Alternating Donor-Acceptor Conjugated Polymers and Their Model Compounds**"**, ACS National Meeting, Washington D. C., August 28~September 1, 2005.
10. C. L. Pai, C. L. Liu, **W. C. Chen**, and S. A. Jenekhe, " Electronic Structures and properties of Alternating Donor-Acceptor Conjugated Copolymers: 3,4-Ethylenedioxythiophene (EDOT) Copolymers and Their Model Compounds", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
11. W. C. Wu, C. L. Liu, and **W. C. Chen,** "Synthesis and Characterization of New Fluorene-Acceptor Alternating and Random Copolymers for Light-Emitting Applications", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
12. Y. Y. Yu, D. C. Lin, and **W. C. Chen**, "Synthesis of CdS Nanoparticle/ Porous Poly(Silsesquioxane) Composition Films via Block Copolymers, Their Characteristics of Microstructures and Optoelectronic Properties", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
13. B Nandan, C. H. Lee, H. L. Chen, and **W. C. Chen** , "Molecular Architecture Effect on the Microphase Separations in Supramolecular Comb-Coil Complexes of Polystyrene-block- Poly(2-vinylpyridine) with Dodecylbenzene Sulfonic Acid: $(AB)_nA_n$ Block-Arm Star Copolymer", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
14. M. Lai, H. L. Chen, and **W. C. Chen**, " A hexagonally Packed Cylinder Structure in Poly(3-hexylthiophene)-block-poly(methyl methacrylate) Rod-Coil Diblock Copolymer", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
15. P. N. Hsu, H. L. Chen, S. C. Cheng, **W. C. Chen**, and S. A. Chen, "Aggregation Behavior of Poly(3-hexylthiophene)-block-poly(methyl methacrylate) in Solution with Varying Solvent Quality", 29th Annual Polymer Symposium, Kao-Hsiung,, Taiwan, Jan. 13-14, 2006.
16. C. H. Lee, B. Nandan, H. L. Chen, and **W. C. Chen,** "Nanostructured Materials Derived from Various Molecular Architectures of Poly(styrene)-block- Poly(2-vinylpyridine)" IUPAC Macro 2006, Rio de Janeiro, Brazil, July 15-20, 2006. **(invited speech)**
17. **W. C. Chen**, " Donor-acceptor conjugated polymer systems: Theoretical electronic structures, synthesis, and device applications", 6th Cross-Strait Polymer Symposium, August 28-30, Dunhuang, China(2006) **(invited speech)**
18. **W. C. Chen**, "Fluorene Based Conjugated Copolymers For Flexible Electronics and Sensors", Optics and Photonics, Taiwan 2006, Hsinchu, December 15-16 (2006). (**invited speech**)
19. H. W. Su, **W. C. Chen,** W. C. Lee, J. S. King, " New Photocurable Acrylic/Silsesquioxane Hybrid Optical Materials: Synthesis, Properties, and Patterning",

2007 Annual Polymer Symposium, Taipei, Jan. 19-20, 2007.

20. Wen-Chung Wu, Wen-Ya Lee, Chia-Ling Pai, **Wen-Chang Chen**, Chih-Shen Tuan, and Jen-Lien Lin, "Photophysical and Electroluminescent Properties of Fluorene Based Binary and Ternary Donor-Acceptor Polymer Blends", 2007 Annual Polymer Symposium, Taipei, Jan. 19-20, 2007.
21. .Wei-Jen Yu, Rong-Hsin Tsai, Cheng-Tyng Yen, **Wen-Chang Chen**, "Methine Bridged Conjugated Poly(ethylenedioxy pyrrole): Synthesis, Properties, and Theoretical Electronic Structures", 2007 Annual Polymer Symposium, Taipei, Jan. 19-20, 2007.
22. Wen-Ya Lee, Kai-Fang Cheng, Then-Fu Wang, Chu-Chen Chueh, **Wen-Chang Chen**, Chih-Shen Tuan, and Jen-Lien Lin, "Effects of Acceptors on the Electronic and Optoelectronic Properties of Fluorene Based Donor-Acceptor-Donor Copolymers", 2007 ACS Spring National Meeting, Chicago, March 25-29.
23. Chu-Chen Chueh, Wen-Ya Lee, Kai-Fang Cheng and **Wen-Chang Chen**, "Synthesis and Optoelectronic Properties of Poly(quinoxaline vinylene) and Its Random Copolymer with Fluorene", 2007 ACS Spring National Meeting, Chicago, March 25-29.
24. Yi-Chih Tung, Wen-Chung Wu, and **Wen Chang Chen**, "Morphological Transformation and Photophysical Properties of Fluorene Based Rod-Coil Copolymers in Solution**",** 2007 ACS Spring National Meeting, Chicago, March 25-29.
25. W. C. Wu, Y. Tian, C. Y. Chen, C. S. Lee, Y. J. Sheng, **W. C. Chen**, and Alex K.-Y. Jen, "Theoretical and Experimental Studies on the Surface Structures of Conjugated Rod-Coil Block Copolymer Brushes", 2007 ACS Spring National Meeting, Chicago, March 25-29. **(Invited Speech)**.
26. **W. C. Chen**, "Fluorene based Rod-Coil Block Copolymers: Synthesis, Morphology, and Photophysical Properties", 2007, Taiwan-China Bilateral Conference, Hsinchu, August 1, 2007. **(Invited Speech)**
27. C. L. Liu, S. A. Jenekhe, and **W. C. Chen**, "Synthesis, Electronic and Optoelectronic Properties of New Didecyloxyphenylene -Acceptor Alternating Conjugated Copolymers", 41st IUPAC World Chemistry Congress, Turin, Italy, August 5-11, 2007.
28. C. H. Lin and **W. C. Chen**, "Synthesis of Hetero-arm Star Polystyrene-b -Poly(4-vinyldiene) (PS-b-P4VP) and Study of Micellar Behavior in Dilute Solution", 41st IUPAC World Chemistry Congress, Turin, Italy, August 5-11, 2007.
29. C. S. Lee, **W. C. Chen**, and Y. J. Sheng, "Study of Linear Block Copolymer Brushes in Selective Solvent via Dissipative Particle Dynamics", 41st IUPAC World Chemistry Congress, Turin, Italy, August 5-11, 2007.
30. **W. C. Chen**, "Morphologies and Photophysical Properties of Electrospun Nanofibers from Conjugated Polymer Blends", Taiwan France Bilateral Conference, Hsinchu, September 17-18, 2007. **(Invited Speech)**

31. W. C. Wu, C. S. Lee,Y. J. Sheng, and **W. C. Chen**," Molecular Architecture Effects on the Morphologies and Photophysical Properties of Rod-Coil Copolymer Brushes", International Symposium on Advanced Materials and Nano-materials with Precisely Designed Architectures, Sapporo, Japan Oct.4-6, 2007 **(Plenary Lecture)**.
32. C. C. Yang, Y.Tian, C. Y. Chen, Alex K.-Y. Jen, and **W. C. Chen**, "New Environmental-Responsive Fluorescent Poly(N-isopropylacrylamide) Copolymer: Photophysical Properties and Multifunctional Sensing Applications", Taiwan-Russia Joint Symposium on Soft Materials: Physics, Chemistry and Applications, Hsin-Chu, November 12-13, 2007. **(Invited Speech)**
33. **W. C. Chen**, "Rod-Coil Block Copolymers: Interplay between Morphology and Photophysical Properties",New Trend in Asian Polymer Science and Technology , Jeju, S. Korea, Nov. 21-23, 2007。**(Invited Speech)**
34. W. Y. Lee, W. C. Wu, C. L. Liang, K. F. Cheng, Y. C. Tung, C. C. Chueh, and **W. C. Chen**, "Donor/Acceptor 共軛高分子系統: 理論分析、合成、及元件應用(2/3)", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
35. **W. C. Chen**, C. H. Lin, C. S. Li, L. F. Hsu, Y. C. Tung, and W. Y. Lee, "階層性自組裝嵌段共聚物-生物分子系統之研究: 子計畫一 不同結構形態嵌段共聚高分子之合成及其與雙親性小分子之摻合研究(2/3)", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
36. C. S. Li, W. C. Wu, Y. J. Sheng, and **W. C. Chen**, "Effects of Chain Architectures on the Surface Structures of Conjugated Rod-Coil Block Copolymer Brushes", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
37. C. H. Lin, L. F. Hsu, **W. C. Chen**, and H. L. Chen, "Synthesis and Morphology of Heteroarm Star Polystyrene-block- Poly(4-vinylpyridine) (PS-b-P4VP)", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
38. W. Y. Lee, K. F. Cheng, C. L. Liu, S. T. Lin, C. C. Chueh, F.-Y. Tsai, and **W. C. Chen**, "High Hole Mobility From a New Donor-Acceptor Polymer Semiconductor: Thiophene-Thienopyrazine Copolymer", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
39. K.-F. Cheng, C. L. Liu, and **W. C. Chen**, "Small Band Gap Conjugated Polymers Based on Thiophene-Thienopyrazine Copolymers", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
40. W. Y. Lee, C. W. Chen, C. C. Chueh, C. C. Yang, and **W. C. Chen**, "Synthesis of New Fluorene-Indolocarbazole Alternating Copolymers for Light-Emitting Diodes and Field Effect Transistors", 2008 annual polymer symposium, Hsinchu, Jan. 18-19 (2008).
41. C. L. Liang, J. H. Tsai, M. H. Lai, C. F. Wang, **W. C. Chen**, and S. A. Jenekhe, "New Donor-Acceptor Alternating Conjugated Copolymers: Synthesis, Electronic Properties, and Thin Film Transistor Characteristics" 2008 annual polymer symposium, Hsinchu, Jan.

18-19 (2008).

42. H. W. Su and **W. C. Chen**, "High Refractive Index Polyimide-Nanocrystalline Titania Hybrid Optical Materials", IUPAC Macro 2008, Taipei, June 29~July 4 (2008).
43. K.-F. Cheng, C. C. Chueh, C. H. Lin, and **W. C. Chen**, "Synthesis, Properties, and Field Effect Transistor Characteristics of New Thiophene-[1,2,5]thiadiazolo[3,4-g]quinoxaline-Thiophene based Conjugated Polymers", IUPAC Macro 2008, Taipei, June 29~July 4, 2008.
44. S. T. Lin, Y. C. Tung, **W. C. Chen**, " Synthesis, Structures and Multifunctional Sensory Properties of Poly[2,7-(9,9-dihexylfluorene)]-block-poly[2-(dimethylamino)ethyl methacrylate] Rod-Coil Dibock Copolymers", IUPAC Macro 2008, Taipei, June 29~July 4 (2008).
45. Chi-Ching Kuo, Chen-Ting Wang, and **Wen-Chang Chen**, "Photophysics and Sensory Applications of Electrospun Semiconducting Polymer Nanofibers", IUPAC Macro 2008, Taipei, June 29~July 4 (2008). **(Invited Speech)**
46. C. S. Li, W. C. Wu, Y. J. Sheng, and **W. C. Chen**, "Effects of Chain Architectures on the Surface Structures of Conjugated Rod-Coil Block Copolymer Brushes", IUPAC Macro 2008, Taipei, June 29~July 4 (2008).
47. C. L. Liu, J. H. Tsai, W. Y. Lee, **W. C. Chen**, and S. A. Jenekhe, "New Didecyloxyphenylene–Acceptor Alternating Conjugated Copolymers: Synthesis, Properties, and Optoelectronic Device Applications", IUPAC Macro 2008, Taipei, June 29~July 4 (2008).
48. C. C. Chueh, M. H. Lai, and **W. C. Chen**, " Synthesis of New Acetylene-vinylene Alternating Copolymers and Their Thin Film Transistor Devices", IUPAC Macro 2008, Taipei, June 29~July 4 (2008).
49. J. H. Tsai, C. C. Chueh , C. Ting, B. T. Ko, and **W. C. Chen**, "Synthesis of New Indolocarbazole-Acceptor Conjugated Copolymers and Their Thin Film Transistor and Solar Cell Applications", Polycondensation 2008, Tokyo, Sept.8-11 (2008).
50. C. C. Chueh, C. F. Wang, M. H. Lai, and **W. C. Chen**, "Synthesis of New Acceptor-Vinylene Alternating Copolymers and their Thin Film Transistor Characteristics"**,** Polycondensation 2008, Tokyo, Sept.8-11 (2008).
51. Chi-Ching Kuo, Cheng-Ting Wang, and **Wen-Chang Chen**, "Aligned Luminescent Electrospun Nanofibers Prepared From Polyfluorene /PMMA Blends: Fabrication, Morphology, Photophysical Properties, and Sensory Applications", 4th International Conference on Photoresponsive Organics and Polymers (ICPOP-2008), Hangzhou, China, on October 17-20 (2008).
52. Chia-Hung Lin, Yi-Chih Tung, Janne Ruokolainen, Raffaele Mezzenga, and **Wen-Chang Chen**, "Poly[2,7-(9,9-dihexylfluorene)]-block -Poly(2-vinylpyridine) Rod-Coil and Coil-Rod-Coil Block Copolymers : Synthesis, Solution Morphology and

Photophysical properties", 2nd Japan-Korea Joint Seminar 2008 and International Symposium: Synthesis and Application of Advanced Functional Materials, Tokyo, Nov. 4-6 (2008)。(**Plenary Lecture**)

53. M. H. Lai ,C. C. Chueh , **W. C. Chen**,J. L. Wu , and F. C. Chen, "Synthesis and Properties of New Dialkoxyphenylene Quinoxaline based Donor-Acceptor Conjugated Polymers and Their Applications on Thin Film Transistors and Solar Cells", 2009 Annual Taiwan Polymer symposium, Tatung univ., Taipei, January 9-10 (2009)
54. C. C. Kuo, Y. C. Tung, C. H. Lin, and **W. C. Chen** "Novel Luminescent Electrospun Fibers Prepared From Conjugated Rod-Coil Block Copolymer of Poly[2,7-(9,9-dihexylfluorene)]-block-Poly(methylmethacrylate)", 2009 Annual Taiwan Polymer Symposium, Tatung univ., Taipei, January 9-10 (2009)
55. H. C. Chen, C. T. wang, C. L. Liu, Y. C. Liu, and **W. C. Chen**, "Full Color Light-Emitting Electrospun Nanofibers Prepared From PFO/MEH-PPV/PMMA Ternary Blends", 2009 Annual Taiwan Polymer Symposium, Tatung univ., Taipei, January 9-10 (2009)
56. J. C. Hsu, K. Sugiyama, A. Hirao, Y. C. Tung, and **W. C. Chen**, "Living Anionic Polymerization of para-Substituted Styrene with π-Conjugated Oligo(fluorene) Moieties", 2009 Annual Taiwan Polymer Symposium, Tatung univ., Taipei, January 9-10 (2009)
57. **W. C. Chen**, J. H. Tsai, C. C. Chueh,M. H. Lai, C. F. Wang, and C. Ting, "New Donor-Acceptor Conjugated Copolymers For Thin Film Transistors and Photovoltaic Cells", European Polymer Congress, Graz, Austria, July 12-17 (2009).
58. S. T. Lin, K. Fuchise, T. Kakuchi, and **W. C. Chen**, "Synthesis, Morphologies, and Photophysical Properties of Poly[2,7-(9,9-dihexylfluorene)]-block -poly(N-isopropylacrylamide) -block-poly(N-hydroxyethylacrylamide) Rod-Coil-Coil Thermoresponsive Triblock Copolymers", ACS Fall meeting, Washington D.C., USA, August 16-20 (2009).
59. C. H. Lin, C. C. Kuo, and **W. C. Chen** "Electrospun Nanofibers from Conjugated Rod-Coil Polyfluorene-block-Poly(2-vinylpyridine)/PEO Blends", The 13th Asian Chemical Congress, Shanghai, Chain, September 14-16 (2009).
60. **W. C. Chen**, "Fluorene Based Conjugated Rod-Coil Block Copolymers: Synthesis, Morphology, Photophysical Properties, and Stimuli-Responsive Applications", The 13th Asian Chemical Congress, Shanghai, Chain, September 14-16 (2009). **(invited speech)**
61. **W. C. Chen**, "Molecular Architecture Effects on the Morphologies and Photophysical Properties of Fluorene based Rod-Coil Block Copolymers", 2009 International Symposium on Nano Structures: Synthesis, Characterization, and Application, Gwangju, Korea, October 7-10 (2009) **(invited speech)**
62. **Wen-Chang Chen**, "New Donor-acceptor Semiconducting Polymers for Solar Cell Applications", 11th Pacific Polymer Conference, Cairns, Australia, December 6-11 (2009)