

Curriculum Vitae

I. PERSONAL DATA

HUNG-JUE SUE, Professor/Director (ptc.tamu.edu/hjsue)

Meinhard H. Kotzebu '14 Professorship

Department of Materials Science and Engineering; Department of Mechanical Engineering; Polymer Technology Consortia

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RESEARCH INTERESTS

To conduct research on dispersion and assembly of **nanomaterials** for nanotechnology, energy sector, and microelectronic applications; **surface damage phenomena** of polymers; **fracture, toughening, and strengthening** of polymers, blends, polyolefin films, fiber-reinforced composites, coatings, laminates, adhesives and nanocomposites.

A. Education

Ph. D. Macromolecular Science and Engineering Program (1988)

The University of Michigan, Ann Arbor, Michigan

Dissertation topic: "Mechanical Modeling and Experimental Observations of Toughened Rigid-Rigid Polymer Alloys" (Advisor: Professor Albert F. Yee)

M.S.E. Department of Mechanical Engineering (1987)

The University of Michigan, Ann Arbor, Michigan

Project Topic: "Stress and Strain Fields in Two-Phase Materials"

M.S.E. Department of Materials Science and Engineering (1985)

The University of Michigan, Ann Arbor, Michigan

B.E. Department of Chemical Engineering (1981)

Chung-Yuan Christian University, Chung-Li, Taiwan

B. Work Experience

Professor, Department of Materials Sci. & Eng., TAMU. (2014-)

Director, Polymer Technology Center, Texas Engineering Experimental Station (2003-)

Director, Scratch Behavior in Polymers Consortium, TAMU. (2001-)

Visiting Professor, Kyushu U., Kobe U., Nanjing Tech U., National Taipei U. Tech. (2015-2021)

Co-Director, Advancing Polymers for Energy Sector Appl. Consortium, TAMU. (2011-2021)

Professor, Department of Mechanical Engineering, TAMU. (2002-2014)

Visiting Professor, Kyoto Institute of Technology and Kaneka Corporation, Japan (2008-2009)

Visiting Principal Fellow, Institute of Materials Research & Eng., Singapore (2001-2002)

Visiting Professor, City University of Hong Kong (Summer 2001)

Co-Director, Polyolefins Film Consortium, TAMU. (1998-2001)

Visiting Associate Professor, Hong Kong Univ. Sci. Tech. (Summer 1999)

Visiting Associate Professor, INSA, Lyon, France (Summer 1997)

Associate Professor, Department of Mechanical Engineering, TAMU. (1995-2002)

Project Leader, Dow Chemical USA, Freeport, TX 77541 (1988-1995)

II. Student Research Advising

A. Doctorate:

1. Chris K. Li, "Novel Equal Channel Angular Extrusion Process for Improving Physical and Mechanical Properties of Polymers", Graduated in June 1999. (Dow-Asia)
2. Guangxue Wei, "Toughening and Strengthening of Polypropylene Blends Using the Rigid-Rigid Polymer Toughening Concept", Graduated in November 1999. (Avery Dennison)
3. John Miranda, "Interleaving Toughening of Preformed RTM Composites for Aerospace Applications", December 1999. (Amkor Technology)
4. Jim Lu, "Process-Structure-Property Relationship in Blown-Film Polyolefins", Graduated in August 2000. (KANEKA Corporation)
5. Chen Xiang, "Micromechanical Modeling of Scratch/Mar Behavior in Polymers", graduated in October 2000. (Stress Engineering Services, Inc.)
6. Z. Xia, "Structure-Property Relationship in Highly Oriented Semi-Crystalline Polymers", May 2001. (BP Solar)
7. Yanmei Li, "Morphology and Mechanical Behavior of Multi-Phase Polypropylene Nanocomposite Systems", December 2001. (Schlumberger)
8. Chao Li, "Fracture Behavior and Mechanical Modeling of Hybrid Composite Systems", December 2001. (SBM-IMODCO)
9. Tit-tak Gam, "Polymer Nanocomposites and Toughening", December 2003. (Nanacor)
10. Yuntao Li, "Synthesis and Characterization of Functional Nanoparticles", December 2004. (**Southwest Petroleum University, China**)
11. Jongil Weon, "Nanopatterning of Polymer Structures Using ECAE", August 2005. (**Dongguk University, Korea**)
12. Goyteck Lim, "FEM Modeling of Scratch Behavior of Polymers", August 2005. (Exponent Consulting, Inc.)

13. W. Boo, "Structure-Property Relationship in Polymer Nanocomposites", March 2007. (Samsung-Total, Korea)
14. Neil Everett, "Evanescent Wave and Video Microscopy Methods for Directly Measuring Interactions Between Surface-Immobilized Biomolecules", August 2007. (Clean Energy Lab.)
15. Jia Liu, "Toughening of Epoxies Based on Self-Assembly of Nano-Sized Amphiphilic Block Copolymer Micelles", 5/2009. (Apple Computers)
16. Dazhi Sun, "Colloidal Manipulation of Nanoparticles: Stable Dispersion and Self-assembly", 5/2009. (**South University of Science and Technology of China**)
17. Han Jiang, "Modeling of Scratch Behavior of Polymers and Coatings", 8/2009. (**Southwest Jiaotong University, China**)
18. Robert Browning, "Fundamental Structure-Property Relationship in Scratch Behavior of SAN", August 2010. (Valeron Corporation)
19. Taohua Lee, "Dye-Sensitized Solid-State Solar Cells", Dec. 2011. (Taiwan Semiconductor)
20. Xi Zhang, "Controlled Dispersion and Assembly of Nanomaterials", May 2012. (Kaneka)
21. Minghao Wong, "Colloidal Nanoparticles Tethered by Oligomers and Short Polymers in Organic and Polymeric Media", May 2013. (Chevron-Japan)
22. Kevin White, "Rheology of Polymer Nanocomposites", 2013. (Akron Ascent Innovations)
23. Mohammad M. Hossain, "Modeling of Scratch Behavior of Polymers", Dec. 2013. (**TAMU-Kingsville**)
24. Ehsan Moghbelli, "Scratch Behavior of SAN", Aug. 2014. (**Golestan University, Iran**)
25. Haiqing Yao, "Functionalization of Nanomaterials", May 2015. (Kaneka)
26. Chinfu Lee, "Fracture Mechanics of PE Blown Films", May 2015. (Apple Computers)
27. Peng Li, "Nanohybrid Materials", May 2016. (Formosa Plastics)
28. Peng Liu, "Preparation and Characterization of PEEK/PBI", Aug. 2016. (Oak Ridge N. Lab.)
29. Kevin Laux, "Scratch and Wear Behavior of PAEKs", Aug. 2016. (Kuraray)
30. Marouen Hamdi, "Modeling Viscoelastic Behavior of Polymers and Composites", Dec. 2016. (ASML, Netherlands)
31. Fan Lei, "Polymer Nanocomposite Based Spray Coating", Dec. 2016. (S. China U. Sci. Tech.)
32. Spencer Hawkins, "Mechanical Properties of Epoxy/MWCNT-ZnO Nanocomposites", August 2017. (AFRL)

33. Shuang Xiao, "Scratch Behavior of Polyurethane Materials", Dec. 2018. (Mitsui Chemical)
34. Farhad D. Fatah, "Copper/CNT Nanocomposites wires", May 2020. (Intel Corporation)
35. Cong Liu, "Hybrid Nanocomposites", 2020. (U. Tokyo)
36. Shuoran Du, "Modeling of Scratch Behavior of Polymers", 2020. (Procter & Gamble)
37. Glendy Morelo, "Self-healing Polymers", 2021. (Dow Chemical)
38. Zhiyuan Jiang, "Viscoelastic Behavior of Polymers", 2021. (Formosa Plastics)
39. ChiaYing Tsai, "Rheological Behavior of LCB Containing PP", 2021. (Dow Chemical)
40. Mingzhen Zhao, "Polyethylene Nanocomposites", 2022. (Shanghai Jiaotong Univ.)
41. Zewen Zhu, "Synthesis of Nanomaterials for Aerospace Applications", 2022.
42. KwangHae Noh, "Fire Retardant Polymers", 2023.
43. Hengxi Chen, "Toughening of Aerospace Composites", 2024.
44. Shaik Merkatur Hakim, "Modeling Scratch Behavior of Engineering Polymers", 2025.
45. Xiuzhu Zhu, "Engineered PMMA for Automotive Applications", 2025.
46. Meng-Shuan Lee, "PP/CuNW Nanocomposites", 2025.
47. Wentao Cen, "Biodegradable Plastics", 2026.

B. Masters:

1. H. Dilan, "FEM Modeling of Deformation of Polymers During Equal Channel Angular Extrusion Process", Dec. 1997 (Owns a company).
2. Estrada, "Structure-Property Relationship in Rubber-Modified Polypropylene", September 2000. (Ford Motors)
3. J. Weaver, "Toughening of Microelectronic Packaging Materials", December 2001. (Raytheon)
4. M. Wong, "Test Method Development for Evaluation of Scratch Behavior of Polymers", December 2003. (KANEKA Corporation)
5. C. Feng, "Durability of Structural Adhesives", August 2004. (UT-Austin)
6. Kirk, Non-thesis MS, December 2004. (Honda-USA)

7. K.-J. Lee, "LED Device Fabrication Based on ZnO Nanoparticles", August 2005. (UT-Austin)
8. B. Browning, "Scratch Behavior of Polymeric Coatings", 2006. (Continued for Ph.D.)
9. E. Moghbelli, "Scratch Behavior of Polymer Nanocomposites", 2007. (Continued for Ph.D.)
10. G. Warren, "VARTM of CNT-Reinforced Epoxy Composites", 5/2009. (Lockheed Martin)
11. Y. Song, "Mechanical Modeling of Viscoelastic Scratch Behavior of Polymers", 2009. (Chinese Aerospace Materials)
12. B. Hare, "Scratch Behavior of Packaging Films", 2011. (Petroleum Geo-Services)
13. P. Cheng, "Essential Work of Fracture of LLDPE Films", 2014. (Taiwan Semiconductors)
14. M.S. Gundi, "Scratch Behavior of Polymeric Films", May 2016. (Kaneka)
15. N. Benner, "Degradation Mechanisms in PAEK", May 2017. (Teacher)
16. James Chrisman, "Scratch Visibility Assessment and Material Properties Relationship on Mar", May 2019. (Teacher)

Undergraduate Senior Projects:

Sara West, Leah Hess, Jarian Galloway, Micaela Torres, Lauren Defesche, Ines Figueroa-Casas, Hannah Chang, Z. Thornburg, B. Hausman, M. Nicholson, M. Chantharayukhonthorn, Garret Nowak, Spencer Hawkins, Joseph Pickard, Nangelie Ferrer, Zhenya Liu, Adrienne O'Reilly, K. White, J. O'Reilly, D. Curry, C. Tapp, D. Moore, E. Roberson, S. Eschmann, B. Derkowski, J. Avila, J. Lo, S. Autry, D. Sanford, J. Dean, W. Robertson, J. Brier, P. Rood, J. Garcia-Meitin, V. Toth, C. Tapp.

D. Postdocs and Research Staff:

1. B. Zhou, "Synthesis of Environmentally Friendly Epoxies for Marine and Infrastructure Composite Applications", May 1999. (EXXON-MOBIL)
2. T. Eason, "Structure-Property-Process Relationship in Blown Film Polyolefins", Jan. 2000. (AFRL)
3. C. Huang, "Polymer Nanocomposites for Automotive Structural Applications", April 2000. **(South China University of Technology)**
4. B. Clement, "Environmentally Friendly Phytochemical-Modified Plastics for Food Safety and Infrastructure Anti-Fouling Applications", August 2000. **(Blinn College)**
5. B. Pratt, "Mechanical Characterization of Anisotropic Polymers", 2000. (Baker Hughes)
6. B. Slay, "PE Blown Film Line Operation", 1999-2001. (Halliburton)

7. H.-Y. Lee, "Scratch Behavior in Polymers", Visiting Associate Professor, **Keimyung University**, South Korea, 2001-2002.
8. L. Bonnaud, "Intrinsically Tough Epoxies for Microelectronic Packaging Applications", May 2001. (Atochem)
9. M. Kotaki, "Scratch Behavior in Polymers", October 2001. (**Kyoto Inst. Tech.**)
10. J. Wong, "Scratch Behavior of Polymers in Nanoscale", 2003. (**Imperial College, London**)
11. J. Lu, "E-Beam Cured Composites", January 2003. (KANEKA Corporation)
12. S.-W. Moon, "Thermal Conductivity Behavior of Polymers", October 2003. (Intel)
13. L. Sun, "Fundamental Structure-Property Relationship of Polymer Nanocomposites", July 2006. (**UConn**)
14. H. Ikeda, "Elastomeric Polymer Nanocomposites", Tokai Rubber, 2006-2007.
15. N. Aoki, "Scratch Behavior of Injection Molded Sandwich Structures", **Kyoto Institute of Tech.**, 2007.
16. C.-C. Chu, "CNT Exfoliation and Application", Feb. 2007.
17. Shinji Iio, "Nylon Nanocomposites and Characterization", Tokai Rubber, 2008-2009.
18. S.Y. Song, "Scratch Behavior of Environmentally Aged Polymers", KRICT, 2007-2009.
19. Ben Chang, "Oil/Gas Pipeline Integrity", PolyLab, 2009-2010.
20. A. Moyses, Lab Manager, 1997-2012. (Owner of Surface Machine Systems)
21. E.N. Everett, "CNT Dispersion", Aug. 2008. (Clean Energy Labs)
22. Han Jiang, "Modeling of Scratch Behavior of Epoxy Coatings", April 2010. (**SW Jiaotong University, China**)
23. Ivan Liang, "Scratch Behavior of Packaging Films", Feb. 2011. (Dow Chemical)
24. C.-C. Chu, "CNT Applications", Aug. 2011. (Company in Taiwan)
25. Colin Meyer, "Food Package Materials", 2012. (Retired)
26. L. Jin, "Material Science of PAEKs", 2013. (Hoerbiger)
27. T. Huang, "Dispersion and Assembly of Nanoparticles", Sept. 2014. (Formosa Plastics)
28. Y. Sugiyama, "CNT Exfoliation Process Optimization", Kaneka, 2011-2013.
29. Rene Perez, "Core-Shell ZnO-SiO₂ Quantum Dots", **Univ. of Puebla, Mexico**, 2013-2014.

30. C. Zhao, "Toughening of Benzoxazine and its Nanocomposites", **SW Petroleum Univ.**, 2014-2015.
31. X. Zhang, "Scratch Behavior of Laminated Polymeric Films", National Center for Packaging Material Quality Supervision and Inspection, 2014-202015.
32. M. Tsai, "Polyimide Nanocomposites", **National Chin-Yi Univ.**, Taiwan, 2015.
33. T. Hirata, "High Performance Thermosets for Electronic Packaging Applications", Asahi Kasei, 2014-2016.
34. K. Akamine, "ZrP-derivatives for Improved Scratch Resistance", **Kyushu Univ.**, Japan, 2015-2016.
35. M. Puopolo, "Polymeric Coatings for Improved Barrier Properties", **Univ. of Rome - Sapienza**, 2015-2016.
36. M. Hossain, "Numerical Modeling of Wear, Scratch, and Fracture in Polymers", 2015. **(TAMU-Kingsville)**
37. H. Wang, "Manipulation of Inter-particle Forces Between ZrP Nanoplatelets", 2016. (Arizona State U.)
38. Y.-H. Lin, "Electrospinning Nanofibers with High Electrical Conductivities", 2016. (ExxonMobil)
39. Suguru Sasaki, "Latent Curing Agent for Epoxy", **Osaka Inst. Tech.**, 2017.
40. Jongil Weon, "Scratch Behavior of Polymers", **Dongguk Univ., Korea**, 2016-2017.
41. Shuntaro Uenuma, "Mechanical Behavior of Sliding Ring Modified Polymers", Univ. Tokyo, 2018. **(U. Tokyo)**
42. Joseph Baker, "Functionalization of Nanoparticles", 2018-2020. (Albemarle)
43. Guanhui Lai, "2-D Polymer Nanocomposites", Chinyi Univ., Taiwan, 2019-2020. **(National Sun Yat-Sen University)**
44. Qihui Chen, "Mechanical Behavior of Polymer Nanocomposites", North Univ. China, 2018-2020. **(North Univ., China)**
45. Sinan Feng, "PEEK/MWCNT Nanocomposites", 2018-2020. **(Kyushu Univ., Japan)**
46. Tan Zhang, "Copper-CNT Nanocomposites", 2016-2021.
47. X. Zhang, "Dispersion of Nanoparticles in Organic Solvents", Kaneka, 2012-2022.

48. Hong-Mao Wu, "Polyethylene-based Foams, Nanocomposites, and Fire Retardant", 2020-2022. (Formosa Plastics)
49. Yen-Ting Lin, "Sustainable PP and Fire Retardant PP", 2020-2022. (Formosa Plastics)
50. M. Mullins, "Construction of Equipment, Polymer Chemistry, and Project Research Implementation", 2014-present.
51. R. Tietze, "Thermosetting Polymers", 2019-present.
52. Yu-Chen Hsu, "Super-absorbent Polymers and Toughening of Aerospace Composites", 2022-present.
53. R. Yeh, "Sustainable Polymers and Biodegradation", 2022-present.
54. Z. Hse, "Crystallization Behavior of Polyolefins", 2022-present.
55. G. Lai, "Polyethylene Foams", 2022-present.

III. RESEARCH WORK (Google Scholar Citations: 16290+; h-index: 73; i10-index: 257)

A. Refereed Journal Publications (ISI Knowledge: Non-self Citation: 10,130+; h-index: 61)

1. Z. Zhu, H. Chen, X. Zhu, Z. Sang, S. Sukhishvili, S. UENUMA, K. Ito, M. Kotaki and **H.-J. Sue**, "Strengthening and Toughening of Polybenzoxazine by Incorporation of Polyrotaxane Molecules", *Macromolecules*, submitted.
2. M. Zhao, H. Wu, G. Lai, H. Chen, Z. Zhu, J. Wu, W. Kang and **H.-J. Sue**, "Preparation of Polyethylene/ α -Zirconium Phosphate Nanocomposites via Well-Controlled Polyethylene-Grafted Interface", *Macromolecules*, submitted.
3. H. Chen, Z. Zhu, D. Bajaj, D. Patil, N. Verghese, Z. Jiang, and **H.-J. Sue**, "Mechanical Properties of Telechelic Polyetherimide-Modified Tetrafunctional Epoxy", *Polymer*, submitted.
4. C. Tsai, C. Chang, and **H.-J. Sue**, "Highly Conductive Polypropylene Nanocomposites Containing Copper Nanowire", *J. Appl. Polym. Sci.*, submitted.
5. M. Zhao, H. Wu, H. Chen, Z. Zhu, Z. Zhu, Y. Quan, Z. Zhang, Q. Wang, J. Wu, W. Kang and **H.-J. Sue**, "Multi-Functional Polyethylene Nanocomposites Based on Polyethylene-Grafted α -Zirconium Phosphate Nanoplatelets", *Polymer*, submitted.
6. H. Chen, F. Daneshvar, Q. Tu, and **H.-J. Sue**, "Highly Conductive and Ultra-strong Carbon Nanotube-Copper Core-Shell Wires as High-Performance Power Transmission Cables", *ACS Appl. Mater. Interf.*, submitted.
7. Z. Zhu, H. Chen, Q. Chen, C. Liu, K. Noh, M. Kotaki and **H.-J. Sue**, "Fracture Behavior of Hybrid Epoxy Nanocomposites Based on Multi-walled Carbon Nanotube and Core-shell

- Rubber", *Nano Mater. Sci.*, 4, 251-258(2022).
8. Z. Jiang, Z. Zhu, M. Zhao, H. Chen, and **H.-J. Sue**, "Well-dispersed Poly(ether-ether-ketone)/Multi-walled Carbon Nanotubes Nanocomposite for Harsh Environment Applications", *J. Appl. Polym. Sci.*, 139, e52784(2022).
 9. C. Tsai, K. Laux, C. Chang, and **H.-J. Sue**, "Linear and Nonlinear Viscoelasticity of Polypropylene Containing Crosslinked Gels", *Macro. Mater. Eng.*, 307, 2100819(2022).
 10. M. Zhao, H. Wu, Z. Zhu, J. Wu, W. Kang and **H.-J. Sue**, "Preparation of Polyethylene Nanocomposites Based on Polyethylene Grafted Exfoliated α -Zirconium Phosphate", *Macromolecules*, 55, 3039-3050(2022).
 11. B. Phillips, Abani, H. Lin, P. Wei, C Li, M. Zhao, J. Handy, S. Banerjee, **H.-J. Sue**, E. Pentzer, M. Al-Hashimi, H.-C. Zhou, and L. Fang, "Inverse Emulsion-Crosslinked Cyclodextrin Polymer Nanoparticles for Selective Adsorption and Chemiresistive Sensing of BTEX", *Materials Today Chem.*, 24, 100915(2022).
 12. G. Molero, C. Liu, Z. Zhu, Q. Chen, S. Peterson, P. Polluru, **H.-J. Sue**, S. Uenuma, K. Mayumi, and K. Ito, "Fracture Behavior of Polyrotaxane-Toughened Poly(methyl methacrylate)", *Langmuir*, 38, 2335-2345(2022).
 13. Z. Zhu, C.-Y. Tsai, M. Zhao, J. Baker, and **H.-J. Sue**, "PMMA Nanocomposites Based on PMMA-Grafted α -Zirconium phosphate nanoplatelets", *Macromolecules*, 55, 1165-1177(2022).
 14. S. Feng, C. Liu and **H.-J. Sue**, "Preparation of multi-functional PEEK/MWCNT nanocomposites *via* MWCNT-induced crystallization mediated compatibilization", *Comp. Sci. Tech.*, 221, 109298(2022).
 15. C. Li, B. Lee, C. Wang, A. Bajpayee, L. Douglas, B. Phillips, N. Rivera-Gonzalez, B. Peng, G. Yu, Z. Jiang, **H.-J. Sue**, S. Banerjee, and L. Fang, "Photopolymerized superhydrophobic hybrid coating enabled by dual-purpose tetrapodal ZnO for liquid/liquid separation", *Materials Horizons*, 9, 452-461(2022).
 16. J. Baker, J. Zhang, M. Zhao, M. Mullins, and **H.-J. Sue**, "Dynamic Light Scattering Studies on Ethylene-Propylene Copolymers in a Hydrocarbon Based Oil", *J. Rheology*, 66, 105-110(2022).
 17. C. Tsai, T. Zhang, M. Zhao, C. Chang, and H.-J. Sue, "Preparation of thermally conductive but electrically insulated polypropylene containing copper nanowire", *Polymer*, 236, 124317(2021).
 18. F. Daneshvar, H. Chen, S. Hankins, G. Fern, T. Zhang, W. Brown, R. Aiken and **H.-J. Sue**, "Investigating potential inhalation exposure to nanofibers during electrospinning and TGA characterization of carbon nanotubes and copper nanowires", *Indoor Air*, 31, 1967-

- 1981(2021).
19. C. Hu, M. Zhao, Z. Liu, N. Hao, X. Meng, J. Li, Q. Li, F. Lin, C. Li, L. Fang, S.Y. Dai, A.J. Ragauskas, **H.-J. Sue**, and J.S. Yuan, "Phototunable Lignin Plastics to Enable Recyclability", *ChemSusChem*, 14, 1-11(2021).
 20. C. Tsai, C. Chang, M. Zhao, and **H.-J. Sue**, "Effect of Long-chain Branching Content on Scratch Behavior of Polypropylene", *J. Appl. Polym. Sci.*, 138, e50993(2021).
 21. S. Du, Z. Zhu, C. Liu, T. Zhang, M.M. Hossain, and **H.-J. Sue**, "Experimental Observation and FEM Analysis on Scratch Induced Delamination of Multilayer Polymeric Structures", *Polym. Eng. Sci.*, 61, 1742-1754(2021).
 22. G. Molero, C.-Y. Tsai, C. Liu, **H.-J. Sue**, S. Uenuma, K. Mayumi, and K. Ito, "Mechanical and Scratch Behaviors of Polyrotaxane-Modified Poly(methyl methacrylate)", *J. Appl. Polym. Sci.*, 138, e51237(2021).
 23. Z. Jiang, Q. Chen, Z. Zhu, C. Tsai, M. Zhao, A. Chang, T. Bremner, and L.P. DiSano and **H.-J. Sue**, "Well-dispersed Poly(ether-ether-ketone)/Multi-Walled Carbon Nanotubes Nanocomposites Prepared *via* A Simple Solution Mixing Approach", *Polym. Int.*, 70, 1090-1098(2021).
 24. M. Zhao, J. Baker, Z. Jiang, Z. Zhu, H.-M. Wu, J.-L. Wu, W.-H. Kang and **H.-J. Sue**, "Preparation of Exfoliated Polymer Nanocomposites Based on Random Copolymer of Polyethylene-Polyvinyl Acetate and α -Zirconium Phosphate", *Langmuir*, 37, 4550-4561(2021).
 25. K. Noh, J. Fincher, R. Mimms, and **H.-J. Sue**, "Effect of Mold Temperature and Additive Migration on Scratch Behavior of TPOs at Elevated Temperatures", *Polymer*, 212, 123709(2021).
 26. C. Tsai, C. Chang, and **H.-J. Sue**, "Quantification of Long-chain Branching Content in Polypropylene", *Ind. Eng. Chem. Res.*, 60, 3770-3778(2021).
 27. F. Daneshvar, H. Chen, and **H.-J. Sue**, "Critical challenges and advances at the carbon nanotube-metal Interface for next generation electronics", *Nanoscale Adv.*, 3, 942-962(2021).
 28. R. Al-Mezrakchi, T. Creasy, T. Bremner, and **H.-J. Sue**, "Manipulation of Thick-Walled PEEK Bushing Crystallinity and Modulus via Instrumented Compression Molding", *J. Appl. Polym. Sci.*, 138, 49930(2021).
 29. Z. Zhu, J. Baker, C. Liu, M. Zhao, M. Kotaki and **H.-J. Sue**, "High performance epoxy nanocomposites based on dual epoxide modified α -zirconium phosphate nanoplatelets", *Polymer*, 212, 123154(2021).
 30. C. Liu, T. Zhang, F. Daneshvar, S. Feng, Z. Zewen, M. Mullins, M. Kotaki, and **H.-J. Sue**,

- "High dielectric constant epoxy nanocomposites containing ZnO Quantum Dots decorated Carbon Nanotube", *J. Appl. Polym. Sci.*, **138**, 49778(2021).
31. Daneshvar, S. Tagliaferri, H. Chen, T. Zhang, C. Liu, and **H.-J. Sue**, "Ultra-long electrospun copper-carbon nanotube composite fibers for transparent conductive electrodes with high operational stability", *ACS Electronic Mater.*, **2**, 2692-2698(2020).
 32. T. Zhang, W.-Y. Hsieh, F. Daneshvar, C. Liu, S.-P. Rwei, and **H.-J. Sue**, "Copper(I)-Alkylamine Mediated Synthesis of Copper Nanowires", *Nanoscale*, **12**, 17437-17449(2020).
 33. F. Daneshvar, H. Chen, T. Zhang, and **H.-J. Sue**, "Fabrication of Light-Weight and Highly Conductive Copper-Carbon Nanotube Core-Shell Fibers Through Interface Design", *Adv. Mater. Interfaces*, 2000779(2020).
 34. C. Liu, S. Feng, Z. Zhu, Q. Chen, K. Noh, M. Kotaki, and **H.-J. Sue**, "Manipulation of Fracture Behavior of Polymethylmethacrylate Nanocomposites by Interfacial Design of Metal-Organic-Framework Nanoparticle Toughener", *Langmuir*, **36**, 11938-11947(2020).
 35. J. Baker, F. Xia, Z. Zhu, X. Zhang and **H.-J. Sue**, " α -Zirconium phosphate nanoplatelets with covalent modifiers for exfoliation in organic media", *Langmuir*, **36**, 11948-11956(2020).
 36. R Pérez-Cuapio, J Alberto Alvarado, M Pacio, A Arce-Plaza, J Santoyo-Salazar, LH Liang, and **H.-J. Sue**, "Enhanced green photoluminescence and dispersion of ZnO quantum dots shelled by a silica shell", *J. Nanoparticle Res.*, **22**, 1-13(2020).
 37. C. Liu, F. Daneshvar, S. Hawkins, M. Kotaki, and **H.-J. Sue**, "High Dielectric Constant Epoxy Nanocomposites Based on Metal Organic Frameworks Decorated Multi-walled Carbon Nanotubes", *Polymer*, **207**, 122913(2020).
 38. S. Du, M. Mullins, M.M. Hamdi, and **H.-J. Sue**, "Quantitative Modeling of Scratch Behavior of Amorphous Polymers at Elevated Temperatures", *Polymer*, **197**, 122504(2020).
 39. Y. Xu, J. Qin, X. Zhang, J. Shen, S. Guo, and **H.-J. Sue**, "Enhancing Scratch Damage Resistance of PMMA via Layer Assembly with PVDF: Numerical Modeling Prediction and Experimental Verification", *Polymer*, **194**, 122382(2020).
 40. Z. Jiang, P. Liu, Q. Chen, **H.-J. Sue**, T. Bremner, and L.P. DiSano, "The influence of processing conditions on the mechanical properties of poly(aryl-ether-ketone)/polybenzimidazole blends", *J. Appl. Polym. Sci.*, **137**, 48966(2020).
 41. S. Du, M.M. Hamdi, and **H.-J. Sue**, "Experimental and FEM Analysis of Mar Behavior on Amorphous Polymers", *Wear*, **444-5**, 203155(2020).
 42. F. Daneshvar, A. Aziz, T. Zhang, M.E. Welland and **H.-J. Sue**, "Tuning the Composition

- and Morphology of Carbon Nanotube-copper Interface", *Carbon*, 157, 583-593(2020).
43. T. Zhang, M. Zhao, F. Daneshvar, F. Xia, and **H.-J. Sue**, "Solution-Processable Oxidation Resistant Copper Nanowires Decorated with Alkyl Ligands", *ACS Appl. Nano Mater.*, 2, 7775-7784(2019).
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191. Z.-Y. Xia, B. S. Slay and **H.-J. Sue**, "Creep Behavior of Oriented isotactic Polypropylene," American Chemical Society (ACS), Polymeric Materials: Science and Engineering (PMSE), Orlando, Florida, April 7-11, 2002.
192. Z.-Y. Xia and **H.-J. Sue**, "Structural Evolution of Semicrystalline Poly(ethylene Terephthalate) During Large Scale Simple Shear Deformation," American Chemical Society (ACS), Polymeric Materials: Science and Engineering (PMSE), Orlando, Florida, April 7-11, 2002.
193. Z.-G. Wang, Z.-Y. Xia, **H.-J. Sue**, B.S. Hsiao, and C.C. Han, "In situ Small-angle X-ray Scattering of Simple Shear Oriented Poly(ethylene terephthalate) During Heating," Proceedings of American Physical Society (APS), Division of Polymer Physics (DPOLY), Indianapolis, Indiana, March 18-22, 2002.
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196. J. Lu, **H.-J. Sue**, and S. Magonov, "Investigation of Morphology and Deformation of HDPE Blown Films Using AFM", PMSE, ACS, Chicago, August 2001.
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201. K.T. Gam, L. Bonnaud, **H.-J. Sue**, H. Kawai, and M. Miyamoto, "Preparation and Mechanical properties of Epoxy-Clay Nanocomposites. Influence of Core Shell Rubber Particles Addition to Epoxy-Clay Nanocomposites", ANTEC, SPE, Dallas, May 2001.
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203. C. Li, X. Tang, **H.-J. Sue**, J.D. and Whitcomb, "Study of Damage Mechanisms in Uni-weave/Satin-weave Hybrid IM7/BMI Composites under Uniaxial Tensile Loading", ANTEC, SPE, Dallas, May 2001.
204. J. Lu and **H.-J. Sue**, "Morphology-Property Relationship in Blown Films of LDPE, LLDPE and Their Blend", ANTEC, SPE, Dallas, May 2001.
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207. J. Weaver, K. T. Gam, Y. Oh, L. Bonnaud, S. Suh, and **H.-J. Sue**, "Strengthening of Microelectronic Packaging Materials Using Core-Shell Rubber Technology", RETEC, SPE, New Jersey, October 2000.
208. J.D. Whitcomb, X. Tang, C. Li, and **H.-J. Sue**, "Failure of Woven Composites Under Compressive Load," ASME IMECE 2000, Orlando, FL, November 2000.
209. C. Xiang, **H.-J. Sue**, J. Chu, and B. Coleman, "Scratch Behavior and Material Properties Relationship in Polymers", TPOs in Automotives, Detroit, October 2000.

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211. Y. Li, X. Tang, J.A. Miranda, **H.-J. Sue**, and J. Whitcomb, "Damage in Hygrothermally Aged Hybrid IM7/BMI Composites", 15th Annual Technical Conference, American Society for Composites, College Station, TX, Sept. 2000.
212. J.J. Lu, **H.-J. Sue**, "Crystalline texture investigation of linear low-density polyethylene blown films", *ACS, Polym. Preprint.*, 220, 330-1, 2000.
213. J. Lu and **H.-J. Sue**, "Structure-Process-Property Relationship in LLDPE Blown Films", ANTEC, SPE, May 2000.
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220. J. Lu, B. Zhao and **H.-J. Sue**, "Morphology of LLDPE Blown Films: Effect of Stalk Height", *ACS-PMSE*, 81, 296(1999).
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222. G.-X. Wei and **H.-J. Sue**, "Morphology and Mechanical Property of Noryl-Modified Polypropylene Blends", *SPE-ANTEC*, 45, 3443(1999).
223. C. Xiang, **H.-J. Sue**, J. Chu, "Scratch resistance and material property relationship in polymers", *SPE-ANTEC*, 45, 3463(1999).

224. J. Lu, B. Zhao and **H.-J. Sue**, "Phase Structure Characterization and Processing-Structure-Property Relationships in Linear Low-Density Polyethylene Blown Films", SPE-ANTEC, 45, 1768(1999).
225. G.-X. Wei, C. Xiang, **H.-J. Sue**, and J. Chu, "Toughening Mechanisms in PP/Noryl PPO Blends", SAE-99, Detroit, March. 1999.
226. G.-X. Wei, C. Xiang, and **H.-J. Sue**, "Toughening and Strengthening of PP Using the Rigid-Rigid Polymer Toughening Concept", Polyolefins XI Conf., Houston, February 1999.
227. **H.-J. Sue**, J. L. Bertram, and P.M. Puckett, "Network Structure and Toughenability Relationship in Model Epoxies", *Polym. Mat. Sci. Eng.*, 79, 216(1998).
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229. G. Wei and **H.-J. Sue**, "Morphology and Fracture Behavior of Thermoplastic-Modified BMI Resins", SPE-ANTEC, 44, 1458(1998).
230. J. Li and **H.-J. Sue**, "Low Temperature Impact Fracture Behavior of Thermoplastic Polyolefins", SPE-ANTEC, 44, 3123(1998).
231. Chris K.-Y. Li and **H.-J. Sue**, "Microstructure Evolution of Linear Low Density Polyethylene in Simple Shear Using the Novel Equal Channel Angular Extrusion Process", PMSE, *Polymer Preprint*, 39, 728(1998).
232. **H.-J. Sue**, "Network Structure and Property Relationship in Model Epoxies", Network-'98, Trondheim, Norway, June 1998.
233. **H.-J. Sue**, C. Xiang, K. Sehanobish, and J. Chu, "Impact Fracture Behavior and Scratch Behavior in TPOs for Automotive Applications", SAE-98, Detroit, Feb. 1998.
234. **H.-J. Sue**, "Microstructure Orientation of Liquid Crystalline Epoxies in Graphite Fiber Composites", Gordon Research Conference, Ventura, CA, Jan. 1998.
235. P.M. Puckett, **H.-J. Sue**, and W.L. Bradley, "Modeling of Creep Behavior of Vinyl Ester Composites", Gordon Research Conference, Ventura, CA, Jan. 1998.
236. **H.-J. Sue**, "Morphology in Liquid Crystalline Epoxy Composites", MRS, Boston, December 1997.
237. **H.-J. Sue**, P.M. Puckett, and Y.Y. Wang, "Toughening of High Performance Epoxy Adhesives Using Core-Shell Particles", ASME Conf. on Microelectronic Packaging Materials, Dallas, November 1997.

238. P.M. Puckett and **H.-J. Sue**, "Viscoelastic Creep Characteristics of Neat and E-Glass Reinforced Thermoset Resins", 29th International SAMPE Conf., Orlando, Florida, October 1997.
239. P.M. Puckett, S.W. Bradley, **H.-J. Sue**, and W.L. Bradley, "Long Term Characterization of Neat and E-Glass Reinforced Thermoset Resins", ASME Conf. on Application of Fiber Composites in Offshore and Marine Technologies, Dallas, November 1997.
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241. **H.-J. Sue**, J.D. Earls, and R.E. Hefner, Jr., "Morphology and Fracture Behavior in Liquid Crystalline Epoxies and Composites", *Deformation, Yield, and Fracture of Polymers*, 6, 129(1997).
242. **H.-J. Sue**, "Fracture Mechanisms in Multi-Phase Semi-Crystalline Polymers Under Severe Conditions", SPE-ANTEC, 41, 1517(1995).
243. **Sue, H.-J.** and Yee, A.F. "Micromechanical Modeling on Effects of Crack Tip Particle Cavitation Process in Polymer Toughening", SPE-ANTEC, 41, 1517(1995).
244. K.J. Wang and **H.-J. Sue**, "Investigation of Impact Fracture Mechanisms of Polyurethane/Urea Bumper Fascia Systems ", ANTEC, 41, 1758(1995).
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247. **H.-J. Sue** and P.M. Puckett, "Toughening of Engineering Thermosets *via* New Toughening Mechanisms", Symp. Durability of Composites, ASME, San Francisco, Nov. 1995.
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251. **H.-J. Sue**, P.C. Yang, J.L. Bertram, C.C. Garrison, E.I. Garcia-Meitin, and M.T. Bishop, "Crazing Phenomena in Thermosetting Resins", *Polym. Mat. Sci. Eng.*, 70, 256(1994).
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262. **H.-J. Sue** and A.F. Yee, "Failure Mechanisms in a Multi-Phase Alloy of PA 6,6/PPO Under Severe Conditions", Gordon Research Conf. on Composites, Ventura, California, January 1990.
263. P.C. Yang, E.P. Woo, M.T. Bishop, D.M. Pickelman, and **H.-J. Sue**, "Rubber Toughening of Thermosets -- A System Approach", *Polym. Mat. Sci. Eng.*, 63, 315(1990).
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265. A.F. Yee, R.A. Pearson, and **H.-J. Sue**, "Fracture and Toughening Mechanisms in Polymers", 7th International Conference on Fracture, 4, 2739(1989).
266. **H.-J. Sue**, J. Huang and A.F. Yee, "Effects of Interfacial Adhesion and Cavitation Strength of the Toughener Phase in Polymer Toughening", *Bull. Amer. Phys. Soc.*, 34, 704(1989).

267. **H.-J. Sue**, R.A. Pearson and A.F. Yee, "Design of Toughened Polymer Alloys", AICHE 2nd Topical Conference, San Francisco, November 1989.
268. **H.-J. Sue**, "The Use of the Double-Notch Four-Point-Bend Technique for Measuring the Toughness of Modified Epoxy Resins", Gordon Research Conf. on Thermosetting Polymers, New Hampshire, 1989.
269. **H.-J. Sue**, R. A. Pearson, D. S. Parker, J. Huang, and A. F. Yee, "Probing Toughening Mechanisms of Polymers Using a Double-Notch Four-Point-Bending Method", *Polymer Preprint*, 29, 147(1988).
270. **H.-J. Sue** and A.F. Yee, "Toughening Mechanisms in Alloys of Rigid Polymers", 7th Int. Conf. on Deformation, Yield and Fracture of Polymers, Cambridge, England, April 1988.
271. **H.-J. Sue** and A.F. Yee, "Toughening Mechanisms in a Multi-Phase Alloy of Nylon 6,6/Polyphenylene Oxide", Bull. Amer. Phys. Soc., 33, 500(1988).
272. **H.-J. Sue** and A.F. Yee, "Toughening Mechanism(s) in Alloys of Rigid Polymers", The Society of Plastic Engineering, RETEC, Chicago, September 1987.
273. A.F. Yee, D.S. Parker, **H.-J. Sue** and I.C. Huang, "Toughening Mechanisms in Some Rubber/Plastic and Plastic/Plastic Multi-Phase Blends", PMSE, Amer. Chem. Soc., 57, 417(1987).

F. Research Equipment Proposals and Other Donations (\$3,000,000+)

1. **H.-J. Sue**, Equipment Maintenance Fund, 11/17, funded \$5,000 by Society of Plastics Engineers.
2. **H.-J. Sue**, Equipment Maintenance Fund, 9/16, funded \$10,000 by Society of Plastics Engineers.
3. **H.-J. Sue**, Equipment Maintenance Fund, 9/15, funded \$7,000 by Society of Plastics Engineers.
4. **H.-J. Sue**, Equipment Maintenance Fund, 10/14, funded \$10,000 by Society of Plastics Engineers.
5. **H.-J. Sue**, Equipment Maintenance Fund, 10/13, funded \$7,500 by Society of Plastics Engineers.
6. **H.-J. Sue**, Equipment Maintenance Fund, 10/12, funded \$7,125 by Society of Plastics Engineers.
7. **H.-J. Sue**, Equipment Maintenance Fund, 9/11, funded \$7,000 by Society of Plastics Engineers.

8. **H.-J. Sue**, Equipment Fund, 5/10, funded \$120,000 by College of Engineering, TAMU.
9. **H.-J. Sue**, Equipment Maintenance Fund, 9/10, funded \$5,000 by Society of Plastics Engineers.
10. **H.-J. Sue**, Equipment Maintenance Fund, 9/09, funded \$6,000 by Society of Plastics Engineers.
11. **H.-J. Sue**, Equipment Fund, 5/08, funded \$150,000 by College of Engineering, TAMU.
12. **H.-J. Sue**, Equipment Maintenance Fund, 9/08, funded \$17,000 by Society of Plastics Engineers.
13. **H.-J. Sue**, Equipment Maintenance Fund, 9/07, funded \$5,000 by Society of Plastics Engineers.
14. **H.-J. Sue**, Equipment Maintenance Fund, 9/06, funded \$12,000 by Society of Plastics Engineers.
15. **H.-J. Sue**, Equipment Maintenance Fund, 12/05, funded \$22,000 by Society of Plastics Engineers.
16. **H.-J. Sue**, Dynamic Mechanical Analyzer, 9/04, funded \$9,000 by Society of Plastics Engineers.
17. **H.-J. Sue**, Scratch Machine, 12/03, funded \$11,000 by Society of Plastics Engineers.
18. **H.-J. Sue**, Diamond Saw and DSC Accessory, 2/03, funded \$10,000 by Society of Plastics Engineers.
19. **H.-J. Sue**, D. Shantz, R. Morgan, and A. Clearfield, WAXS and SAXS instrument, 6/02, funded \$420,000 by NSF.
20. **H.-J. Sue**, Instrumented Scratcher, 5/01, funded \$10,500 by Society of Plastics Engineers.
21. J. Boyd, **H.-J. Sue**, D. Lagoudas, M. Pishko, "Nanoindenter", 1/01, funded \$218,000 by TAMU.
22. **H.-J. Sue**, Instrumented Scratcher, 12/99, funded \$12,000 by Society of Plastics Engineers (SPE).
23. **H.-J. Sue**, Purchase of Image Analysis Camera and Software, 12/98, funded \$12,000 by SPE.
24. T. Hartwig, L. Cornwell, R. Goforth, and **H.-J. Sue**, Purchase of Hydraulic Press System for Bulk Simple Shear of Materials, 3/98, funded \$387,275 by AFOSR.
25. **H.-J. Sue**, Accessories for Thin Film Mechanical Testing and FTIR Dichroism, 1/98, funded \$12,000 by SPE.
26. **H.-J. Sue**, New FTIR, 1/98, funded \$15,000 by Texas A&M University and SPE.

27. **H.-J. Sue**, SAXS Shutter and Image Analysis Upgrade for Polymer Laboratory, 12/97, funded \$11,000 by SPE.
28. **H.-J. Sue**, New Differential Scanning Calorimeter, 5/97, funded \$22,500 by SPE.
29. **H.-J. Sue**, Torsional Braid Analyzer Upgrade for Polymer Laboratory, 12/96, funded \$9,240 by SPE.
30. **H.-J. Sue**, Computer Upgrade for Polymer Laboratory, 12/95, funded \$9,000 by SPE.
31. **H.-J. Sue**, W.L. Bradley, Purchase of a Research Grade Optical Microscope, 10/95, funded \$30,000 by TAMU.

Numerous polymer-related research equipment were solicited and donated by the industry (Phillips, Dow, GE, Huntsman, Exxon, etc.). These equipment include polyolefin Blown Film equipment, MTS and Instron mechanical testers, environmental chamber, creep station, torsional braid analyzer, Tri-GPC, 3d-TREF, FT-IR, dielectrometer, C-Scan defect detector for composite panels, dynamic mechanical thermal analyzer, melt indexer, differential scanning calorimeter, ovens, glassware, sample preparation accessories, mechanical testing fixtures, balances, and programmable hot presses.

G. Unrestricted Research/Symposium Grants (\$1,000,000+)

1. **H.-J. Sue**, "Fracture Toughness of Adhesive Joints", 1/22, funded \$20,000, Olin Corporation.
2. **H.-J. Sue**, "Fracture Behavior of Polymers", 6/21, funded \$20,000, Olin Corporation.
3. **H.-J. Sue**, "Polymer Nanocomposites", 7/21, funded \$10,000 by GAF Corporation.
4. **H.-J. Sue**, "Polymer Nanocomposites", 12/20, funded \$50,000 by Kaneka Corporation.
5. **H.-J. Sue**, "Polyolefin Polymers", 2/20, funded \$30,000 by Formosa Plastics Corporation.
6. **H.-J. Sue**, "Polymer Nanocomposites", 3/19, funded \$20,000 by Kaneka Corporation.
7. **H.-J. Sue**, "Thermosetting Resins", 3/19, funded \$20,000 by Parts Consulting.
8. **H.-J. Sue**, "Thermosetting Polymers", 2/19, funded \$10,000 by Sabic Corporation.
9. **H.-J. Sue**, "Adhesion in Laminates", 6/17, funded \$50,000 by Procter & Gamble Corporation.
10. **H.-J. Sue**, "Polymer Nanocomposites", 12/17, funded \$20,000 by Kaneka Corporation.
11. **H.-J. Sue**, "Polymer Nanocomposites", 12/16, funded \$20,000 by Kaneka Corporation.
12. **H.-J. Sue**, "Strengthening of Electronic Packaging Thermosets", 9/15, funded \$20,000 by Asahi Kasei Corporation.

13. **H.-J. Sue**, "Scratch and Mar of Containers", 6/15, funded \$98,000 by Procter & Gamble Corporation.
14. **H.-J. Sue**, "Nanomaterials Dispersion and Assembly", 1/15, funded \$20,000 by Kaneka Corporation.
15. **H.-J. Sue**, "Strengthening of Electronic Packaging Thermosets", 9/14, funded \$20,000 by Asahi Kasei Corporation.
16. **H.-J. Sue**, "Strengthening of Electronic Packaging Thermosets", 9/14, funded \$20,000 by Kaneka Corporation.
17. **H.-J. Sue**, "Preparation of NIST and NSF Center Proposals", funded \$80,000 by TAMU and TEES, 4/2014-present.
18. **H.-J. Sue**, "Fundamental Study of Nanomaterial Dispersion and Stabilization", 2/13, funded \$20,000 by Kaneka Corporation.
19. **H.-J. Sue**, "Fundamental Study of CNT Purification", 2/12, funded \$20,000 by Kaneka Corporation.
20. **H.-J. Sue**, "Fundamental Study of CNT Dispersion", 2/11, funded \$20,000 by Kaneka Corporation.
21. **H.-J. Sue**, "Fundamental Study of Polymer Nanocomposites", 12/07, funded \$20,000 by Tokai Rubber Corporation.
22. **H.-J. Sue**, "Fundamental Research on Toughening of Polymers", 3/07, funded \$100,000 by Dow Chemical.
23. **H.-J. Sue**, "Fundamental Research on Impact Fracture Behavior of TPO", 1/06, funded \$30,000 by SUNOCO.
24. **H.-J. Sue**, "Fundamental Study of Polymer Nanocomposites", 12/06, funded \$20,000 by Tokai Rubber Corporation.
25. **H.-J. Sue**, "Fundamental Study of Polymer Nanocomposites", 1/06, funded \$50,000 by Dow Chemical.
26. **H.-J. Sue**, "International Symposium on Deformation and Relation of Polymer Solids", 8/05, funded \$8,750 by Specialty Mineral, 3M, Arkema, Uniliver, and National Starch.
27. **H.-J. Sue**, "Fundamental Research on Impact Fracture Behavior of TPO", 6/05, funded \$10,000 by Engelhard.
28. **H.-J. Sue**, "Fundamental Research on Polypropylene Systems", 12/04, funded \$5,000 by Engelhard.

29. **H.-J. Sue**, "Fundamental Research on Epoxy Nanocomposites", 12/03, funded \$35,000 by Dow Chemical.
30. **H.-J. Sue**, "Fundamental Research on Talc-Filled PP", 11/03, funded \$10,000 by Luzenac.
31. **H.-J. Sue**, "Fundamental Research on Polypropylene Systems", 2/03, funded \$5,000 by Engelhard.
32. **H.-J. Sue**, "Fundamental Research on Structure-Property-Process Relationships in Polypropylene Systems", 9/01, funded \$25,000 by Dow Chemical.
33. **H.-J. Sue**, "International Symposium on Structure, Deformation, and Fracture in Semi-Crystalline Polymers", 4/01, funded \$4,030 by NSF.
34. **H.-J. Sue**, "Characterization of Polymer Molecular Structures", 4/01, funded \$10,000 by Polymer Insight, Inc.
35. **H.-J. Sue**, "Polypropylene and Noryl Blends", 5/00, funded \$10,000 by GE Plastics.
36. **H.-J. Sue**, "International Symposium on Toughening of Plastics", 8/98, funded \$1,500 by Dow Chemical.
37. **H.-J. Sue**, "Fundamental Research on Structure-Property-Process Relationships in Polymeric Systems", 1/98, funded \$45,000 by Dow Chemical.

IV. EXTERNAL PROFESSIONAL OUTREACH

A. Invited Lectures/Guest Editors/Guest Scientists

1. **H.-J. Sue**, "Role of Interface on Mechanical Properties of Polymer Nanocomposites", Moonshot Lecture, Univ. of Tokyo, August 5, 2022.
2. **H.-J. Sue**, "Biodegradable Plastics", Avery Dennison, Cleveland, OH, April 26, 2022.
3. **H.-J. Sue**, "Role of nanoparticle surface brush length and graft density on fracture behavior of polymethylmethacrylate", PacificChem, Hawaii, December 15-21, 2021.
1. **H.-J. Sue**, "Delamination Behavior of Multi-layered Polymeric Structures", Kyushu University, ZOOM Presentation, January 22, 2021.
2. **H.-J. Sue**, "Role of Interface in Toughening of PMMA", IUPAC, Hawaii, December 15-20, 2020.
3. **H.-J. Sue**, "Scratch Behavior of PMMA/Polyrotaxane", Kyushu University, ZOOM Presentation, Nov. 12, 2020.
4. **H.-J. Sue**, "Multifunctional Polymer Nanocomposites", ANTEC, San Antonio, March 31-April 2, 2020.

5. K.-H. Noh, S. Du, G. Molero, H. Pham, M. Agerton, M. Mamak, J. Earls, and **H.-J. Sue**, "Quantitative Determination of Interfacial Strength in Commercial Coatings and Laminates", International Polyolefins Conferences, Houston, Febr. 24-26 2020.
6. **H.-J. Sue**, "Determination of Delamination Strength in Polymeric Laminates", TPO Conference, Troy, Michigan, October 7-9, 2019.
7. **H.-J. Sue**, "Physical Correlation between Scratch and Abrasive Wear Behaviors of Polyurethane Elastomer", EPS Division, ANTEC, Detroit, March 18-21, 2019.
8. **H.-J. Sue**, "Experimental and Numerical Determination of Delamination Strength in Polymeric Laminates & Coatings", Fellows Forum, ANTEC, Detroit, March 18-21, 2019.
9. **H.-J. Sue**, "Fracture Behavior of Polymer Nanocomposites", MRS-J, Kita-Kyushu, Japan, Dec. 18-20, 2018.
10. H.-J. Sue, "Fundamental Understanding of Mechanical Properties of Polymer Nanocomposites", ACS, Boston, Aug. 19-23, 2018.
11. H.-J. Sue, "Recent Progresses on Nanomaterial Dispersion and Assembly in Polymeric Systems", ACS, Boston, Aug. 19-23, 2018.
12. H.-J. Sue, "Nanoparticle Dispersion and Assembly in Organic Media", International Adhesion Society Conference, San Diego, CA, Feb. 26-Mar. 1, 2018.
13. H.-J. Sue, "Nanoparticle-assisted Dispersion of Dissimilar Nanoparticles in Polymer Matrices", Symposium for 90's Birthday Celebration of Abe Clearfield, College Station, TX, Nov. 9, 2017.
14. H.-J. Sue, "Nanoparticle-assisted Dispersion of Dissimilar Nanoparticles in Polymer Matrices", U Connecticut, Storrs, CT, September 22, 2017.
15. H.-J. Sue, "Dispersion and Self-assembly of Nanoparticles", Baker Hughes, Houston, TX, September 20, 2017.
16. H.-J. Sue, "Materials Science of Polyolefins", Formosa Plastics, Kaoshiung, August 21, 2017.
17. H.-J. Sue, "Manipulation of Nanomaterial Dispersion and Assembly", National Taipei Univ. of Tech., Taipei, August 17, 2017.
18. H.-J. Sue, "Morphology and Fracture Behavior of PAEK and its Blends", National Cheng-Kung Univ., Tainan, August 7, 2017.
19. H.-J. Sue, " Fracture Behavior of PEEK/PBI Blend", Solvay Corporation, Milan, July 12, 2017.

20. H.-J. Sue, "MOF-based Polymer Nanocomposites", Kaneka Corporation, Brussels, July 4, 2017.
21. H.-J. Sue, "FEM Modeling of Scratch Behavior of Polymers", Univ. Rome, Rome, Italy, July 7, 2017.
22. H.-J. Sue, "Scratch and Wear Behavior of Polyurethane Elastomers", ExxonMobil, Baytown, TX, March 31, 2017.
23. H.-J. Sue, "Nanoparticle Self-assembly Phenomena", Workshop on Advanced Materials, Shenzhen, China, March 2-4, 2017.
24. H.-J. Sue, "Fracture and Toughening of Polymers", Yamagata Univ., Yonezawa, Japan, Feb. 24, 2017.
25. H.-J. Sue, "Nanoscale Phenomena in Polymeric Systems", Tohoku Univ., Sendai, Japan, Feb. 22, 2017.
26. H.-J. Sue, "Fracture Behavior of Polymers and Polymer Nanocomposites", Hyogo Univ., Himeji, Japan, Feb. 10, 2017.
27. H.-J. Sue, "Mechanical Characterization of Polyolefin Films", Kyoshu Univ., Fukuoka, Japan, Jan. 31, 2017.
28. H.-J. Sue, "Self-assembly Phenomena in Epoxy/Clay Nanocomposites", Polymer Science Symposium, Taichung, Taiwan, January 11-13, 2017.
29. H.-J. Sue, "Fundamentals and Applications of α -Zirconium Phosphate Based Polymer Nanocomposites", Workshop on Chemistry and Application of α -Zirconium Phosphate, Osaka, Japan, Dec. 13, 2016.
30. H.-J. Sue, "Scratch and Mar Behavior of Polymers", Milliken Corporation, Shanghai, China, Dec. 2, 2016.
31. H.-J. Sue, "Mar Behavior of High Gloss Polymer Surfaces", Kyushu University, Fukuoka, Japan, Nov. 11, 2016.
32. H.-J. Sue, "Self-Assembly of 2D Nanoparticles in Polymers and Their Applications", Polymer Discussion Group Conference, Kagoshima, Japan, July 3-5, 2016.
33. H.-J. Sue, "Self-Assembly of 2D Nanoparticles in Polymer Matrices", Society of Polymer Science-Japan, Kobe, Japan, May 25-27, 2016.
34. H.-J. Sue, Seminar on "Dispersion and Assembly of Nanoparticles in Organic Media", National Univ. of Singapore, Singapore, April 28, 2016.
35. H.-J. Sue, Seminar on "Assessment of Physical Parameters on EWF based on PE Blown Films", Formosa Plastics, Point Comfort, TX, March 16, 2016.

36. H.-J. Sue, Seminar on "Fundamental Scratch Behavior of Polymers and Laminates", Proctor and Gamble, Cincinnati, February 3, 2016.
37. H.-J. Sue, Seminar on "CNT-Based Polymer Nanocomposites", National Taipei Univ. of Tech., Taipei, January 12, 2016.
38. H.-J. Sue, Seminar on "How to Conduct Effective Research", Formosa Plastics, Taiwan, Jan. 5, 2016.
39. H.-J. Sue, Seminar on "Manipulation of Nanoparticle Dispersion and Assembly", INSA, Lyon, France, Dec. 17, 2015.
40. H.-J. Sue, Seminar on "EWF of LLDPE Blown Films", Yamagata Univ., Yonezawa, Japan, Dec. 4, 2015.
41. M. Hamdi and H.-J. Sue, "Effect of Color and Texture on Scratch and Mar Behavior of TPO", Thermoplastics Olefins Conference, Troy, Michigan, October 5-7, 2015. (1st Prize Paper Award)
42. H.-J. Sue, Seminar on "Nanomaterial Dispersion and Assembly", National Taipei Univ. of Tech., Taipei, Sept. 25, 2015.
43. H.-J. Sue, Seminar on "Nanomaterials Research Related to Petrochemical Plastics", Formosa Plastics, Taiwan, June 26, 2015.
44. **H.-J. Sue**, Seminar on "Nanomaterials Research Related to Petrochemical Plastics", Formosa Plastics, Taiwan, June 26, 2015.
45. **H.-J. Sue**, Seminar on "Essential Work of Fracture Analysis of Polymeric Thin Films", Yamagata Univ, Yonezawa, Japan, June 22, 2015.
46. **H.-J. Sue**, Workshop on "Scratch Behavior in Polymers", Yamagata Univ., Yonezawa, Japan, June 21, 2015.
47. **H.-J. Sue**, Workshop on "Manufacturing of Nanomaterials", Kobe Univ, Kobe, Japan, June 18, 2015.
48. **H.-J. Sue**, "Barrier Properties of Polymer Nanocomposites", Natick Army R&D Center, Natick, June 1, 2015.
49. **H.-J. Sue**, "Manipulation of Nanoparticle Dispersion and Assembly", Army Research Laboratory, Baltimore, April 15, 2015.
50. **H.-J. Sue**, "Mechanical Properties of Polymeric Thin Films", BASF-Shanghai, Shanghai, China, March 16, 2015.

51. **H.-J. Sue**, "EWF Analysis of Polyethylene Blown Films", Japan Polyethylene, Kawasaki, Japan, January 16, 2015.
52. **H.-J. Sue**, "Engineering Application of Nanomaterials", Tokyo Institute of Technology, Tokyo, Japan, January 14, 2015.
53. **H.-J. Sue**, "Manipulation of Nanomaterial Dispersion and Assembly", Institute of Chemistry, Beijing, China, Nov. 21, 2014.
54. **H.-J. Sue**, "Quantitative Assessment Mar Behavior of Polymers", Tokyo Institute of Technology, Tokyo, Japan, Nov. 17, 2014.
55. **H.-J. Sue**, "Ultrastrong Polymer Nanocomposites", International Conference on Energy and Transportation Materials, Chengdu, China, October 15-17, 2014.
56. **H.-J. Sue**, "Fundamental Scratch Behavior of TPOs", Mytex, Louisville, KY, Sept. 19, 2014.
57. **H.-J. Sue**, "Mechanical Modeling of Scratch Behavior of Polymers", BASF, Shanghai, China, July 18, 2014.
58. **H.-J. Sue**, "Barrier Coating Films Based on Epoxy/ZrP", Nanjin Technical University, Nanjin, China, July 17, 2014.
59. **H.-J. Sue**, "Manipulation of Nanoparticle Dispersion and Assembly in Polymers", National Institute of Clean and Low Carbon Energy, Beijing, China, July 7, 2014.
60. **H.-J. Sue**, "Recent Advances in Polymer Nanocomposites Processing", Sichuan Institute of Atomic Energy, Chengdu, China, July 4, 2014.
61. **H.-J. Sue**, "Dispersion and Assembly of Nanomaterials in Polymers", ANTEC Chinese American Professionals Banquet, Las Vegas, NV, April 29, 2014.
62. **H.-J. Sue**, "Anti-Corrosion Epoxy/ZrP Coatings", High Performance Polymers for Oil and Gas Industries, Edinburgh, Britain, April 14-16, 2014.
63. **H.-J. Sue**, "Quantitative Evaluation of Scratch and Mar of Polymers", Kyoto Institute of Technology, Kyoto, Japan, Dec. 15, 2013.
64. **H.-J. Sue**, "Mechanical Behavior of Polymeric Thin Films", Kyushu Univ., Fukuoka, Japan, Dec. 13, 2013.
65. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers", BASF, Shanghai, China, Oct. 8, 2013.
66. **H.-J. Sue**, "Polymer Technology Center", TAMU-Q, Doha, Qatar, Sept. 25, 2013.
67. **H.-J. Sue**, "Fracture Mechanics of PE Thin Films", ExxonMobil, July 26, 2013.

68. **H.-J. Sue**, "Polymer Nanocomposites", National Taipei University of Science and Technology, Taipei, Taiwan, July 19, 2013.
69. **H.-J. Sue**, "Toughening and strengthening of Polymer Coatings and Composites", ITRI, Hsinchu, Taiwan, July 18, 2013.
70. **H.-J. Sue**, "Dispersion and Assembly of Nanoparticles in Organic Media", DongDien Corporation, Chengdu, China, July 9, 2013.
71. **H.-J. Sue**, "Toughening of Epoxy Using Block Copolymer Micelle Particles", Dow Chemical, Shanghai, China, July 2, 2013.
72. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers and Coatings", BASF, Shanghai, China, July 1, 2013.
73. **H.-J. Sue**, "Quantitative Determination of Scratch/Mar Visibility of Polymers", Kaneka, Tokyo, Japan, June 19, 2013.
74. **H.-J. Sue**, "Epoxy Nanocomposites Containing Ordered and Disordered Nanoplatelets Dispersion", Fellows Forum, ANTEC, Cincinnati, OH, April 2013.
75. **H.-J. Sue**, "Dispersion and assembly of nanoplatelets in polymers and their properties", 245th American Chemical Society Mtg., New Orleans, LA, April 2013.
76. **H.-J. Sue**, "Influence of Trace-amount of Well-dispersed Carbon Nanotubes on Structural Development and Tensile Properties of Polypropylene", International Polyolefins Conf., Houston, TX, February 2013.
77. **H.-J. Sue**, "Nanoscale Phenomena in Polymer Nanocomposites", NIST, Gaithersburg, MD, October 22, 2012.
78. **H.-J. Sue**, "Fundamental Fracture Behavior in Polymers and Composites", Chung Yuan University, Chung-Li, Taiwan, October 15, 2012.
79. **H.-J. Sue**, "Nanomaterials for Energy Sector Applications", Chung Shan Institute of Science and Technology, Long-Tan, Taiwan, October 13, 2012.
80. **H.-J. Sue**, "Tackling Engineering Application of Polymer Nanocomposites", Asian Workshop on Polymer Processing, Kyoto, Japan, August 28-31, 2012.
81. **H.-J. Sue**, "Fracture Behavior of Polymer Nanocomposites", Nakasaki University, Nakasaki, Japan, July 23, 2012.
82. **H.-J. Sue**, "Nanomaterials and Nanocomposites for Energy Sector Applications", International Institute for Carbon Neutral Research, Fukuoka, Japan, July 13, 2012.

83. **H.-J. Sue**, "Nanoscale Phenomena in Polymer Nanocomposites", Japanese Gordon Research Conference, WakuraOnsen, Japan, July 9, 2012.
84. **H.-J. Sue**, "Scratch Behavior of Polymer Coatings and Films", Japanese Scratch Consortium, Tokyo, Japan, June 28, 2012.
85. **H.-J. Sue**, "Toughening of Polymers by Nano-sized rubber particles", Arkema, Pau, France, May 11, 2012.
86. **H.-J. Sue**, "New Strengthening Concept for Polymers and Composites", BASF, Ludwigshafen, Germany, May 9, 2012.
87. **H.-J. Sue**, "Nanomaterials and Nanocomposites for Energy Sector Applications", ANTEC Technology Forum, Orlando, FL, April 2, 2012.
88. **H.-J. Sue**, "Fracture Mechanics and Scratch Behavior of Polymeric Thin Films", ANTEC Special Session in Honor of James Harrington, Orlando, FL, April 2, 2012.
89. **H.-J. Sue**, "Modeling Scratch Behavior of Polymers", Japan Polypropylene, Yokkaichi, Japan, December 15, 2011.
90. **H.-J. Sue**, "Quantitative Evaluation of Scratch Performance of Polymers", Japanese Polymer Scratch Behavior Consortium, Kyoto, Japan, December 14, 2011.
91. **H.-J. Sue**, "Purification and Dispersion of CNTs in Organic Media", Kaneka Corporation, Osaka, Japan, December 12, 2011.
92. **H.-J. Sue**, "Fracture Toughness and Scratch Behavior of Polymeric Thin Films", BASF, Ludwigshafen, Germany, Sept. 30, 2011.
93. **H.-J. Sue**, "Manipulation of Nanoparticle Dispersion and Assembly and Their Nanotechnology Applications", 3rd ASAM Conf., Kyushu Univ., Sept. 17-20, 2011.
94. **H.-J. Sue**, "Tackling Engineering Application of Polymer Nanocomposites", Arkema, Philadelphia, Sept. 7, 2011.
95. **H.-J. Sue**, "Tackling Engineering Application of Polymer Nanocomposites", Chung-Shan Sci. Tech. Res. Inst., Taoyuan, Taiwan, June 29, 2011.
96. **H.-J. Sue**, "Exfoliation and Dispersion of Nanoparticles in Organic Media", Danang Univ., Danang, Vietnam, June 23, 2011.
97. **H.-J. Sue**, "Engineering Application of Polymer Nanocomposites", Plastic and Rubber Technology Center, Hochiminh City, Vietnam, June 21, 2011.
98. **H.-J. Sue**, "Quantitative Evaluation of Scratch Performance of Polymers Containing Textured Surfaces", Japanese Polymer Scratch Behavior Consortium, Nagoya, Japan, June 17, 2011.

99. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers", Tsinghua Univ., Tsinchu, Taiwan, June 8, 2011.
100. **H.-J. Sue**, "Tackling Engineering Application of Polymer Nanocomposites", Sichuan Univ., Chengdu, China, June 1, 2011.
101. **H.-J. Sue**, "Manipulation of Dispersion and Assembly of Nanoparticles", International Symposium on Advanced Materials for Energy Sectors, Chengdu, China, May 31, 2011.
102. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers and Coatings", SW Jioutong Univ., Chengdu, China, May 30, 2011.
103. **H.-J. Sue**, " Fundamental Understanding of Scratch and Mar Behavior of Polymers and Coatings ", ANTEC, Boston, May 1-4, 2011.
104. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers and Coatings", European Science Foundation, Saarbrücken, Germany, October 25-27, 2010.
105. **H.-J. Sue**, "Scratch Visibility Assessment for Polymers", Kyoto Institute of Technology, Kyoto, Japan, December 3, 2010.
106. **H.-J. Sue**, "Epoxy/CNT Nanocomposites", KANEKA-Belguim, Brussels, Belgium, October 22, 2010.
107. **H.-J. Sue**, "Implication of Polymer Nanocomposites for Engineering Applications", BASF, Ludwigshafen, Germany, September 29-30, 2010.
108. **H.-J. Sue**, "Scratch Behavior of TPOs", LG, Daejeon, Korea, July 2, 2010.
109. **H.-J. Sue**, "Polymer Nanocomposites for Engineering Applications", KRICT, Daejeon, Korea, June 30, 2010.
110. **H.-J. Sue**, "Scratch Visibility Assessment of TPOs", Sumitomo Chemical, Tokyo, Japan, June 28, 2010.
111. **H.-J. Sue**, "PP Nanocomposites", Japan Polypropylene, Yokkaichi, Japan, June 25, 2010.
112. **H.-J. Sue**, "Controlled Dispersion of Nanoparticles", Toyo Ink, Tokyo, Japan, March 12, 2010.
113. **H.-J. Sue**, "ZnO QD Self-Assembly and Dispersion", Sumitomo-Bakelite, Osaka, Japan, March 9, 2010.
114. **H.-J. Sue**, "Epoxy Nanocomposites Based on CNT", Boeing, Huntington Beach, January 22, 2010.
115. **H.-J. Sue**, "Controlled Dispersion of Nanoparticles", UC-Irvine, CA, January 21, 2010.

116. **H.-J. Sue**, "Nanoscale Phenomena in Polymeric Systems", Gordon Research Conferences on Composites, Ventura, CA, January 17-22, 2010.
117. **H.-J. Sue**, "Scratch Visibility of Polymers", Kyoto Institute of Technology, Kyoto, Japan, December 17, 2009.
118. **H.-J. Sue**, "Exfoliation of Nanofillers in Polymer Matrices", Kyoto Institute of Technology, Kyoto, Japan, November 9, 2009.
119. **H.-J. Sue**, "Fundamental Scratch Behaviors of Polymers", Imperial College, London, July 13, 2009.
120. **H.-J. Sue**, "True Nanoscale Phenomena in Polymer Nanocomposites", BASF, Ludwigshafen, July 9, 2009.
121. **H.-J. Sue**, "Manipulation of Nanotube Dispersion and Orientation", International Symposium on Nanofibers, Tokyo, Japan, June 18-20, 2009.
122. **H.-J. Sue**, "Manipulation of Nanoparticle Dispersion and Assembly", Tokai Rubber, Nagoya, Japan, June 23, 2009.
123. **H.-J. Sue**, "Manipulation of Nanoparticle Dispersion and Assembly", Univ. of Tokyo, Tokyo, Japan, June 22, 2009.
124. **H.-J. Sue**, "Scratch Behavior of TPO Systems", Kyoto Institute of Tech., Kyoto, Japan, June 17, 2009.
125. **H.-J. Sue**, "Manipulation and Dispersion of Nanoparticles", UC-Irvine, Irvine, CA, February 2009.
126. **H.-J. Sue**, "Dispersion of CNT", Air Force Research Lab., Dayton, OH, January 2009.
127. **H.-J. Sue**, "Control of Dispersion of Nanoparticles", Federal University of Rio Grande do Sul, Porto Alegre, Brazil, January 2009.
128. **H.-J. Sue**, "Manipulation of Dispersion and Assembly of Nanoparticles", Kyushu Univ., Kyushu, Japan, November 2008.
129. **H.-J. Sue**, "Dispersion and Assembly of CNT", Toray Corporation, Matsuyama, Japan, November 2008.
130. **H.-J. Sue**, "Toughening of Epoxies Using Core-Shell Rubber and Block Copolymers", Kobe Univ., Kobe, Japan, November 2008.
131. **H.-J. Sue**, "Cytotoxicity of ZnO Nanoparticles", Kyoto Univ., Kyoto, Japan, October 2008.

132. **H.-J. Sue**, "Manipulation of Dispersion and Assembly of Nanoparticles in Liquids and Polymers", Society of Polymer Science-Japan, Osaka, Japan, September 2008.
133. **H.-J. Sue**, "Structure-Property Relationship in PE Blown Films", Japan Polyethylene, Nakasaki, Japan, September 2008.
134. **H.-J. Sue**, "Scratch Behavior of Polymers", Kyoto Inst. Tech., Kyoto, Japan, June 2008.
135. **H.-J. Sue**, "Exfoliation of Nanoparticles in Polymers", Industrial Technology and Research Institute, Taiwan, April 2008.
136. **H.-J. Sue**, "Abrasion Resistance of TPO Systems", International Polyolefins Conf., Houston, February 2008.
137. **H.-J. Sue**, "Manipulation of Dispersion of Nanostructures in Polymers", National Chung-Hsing University, Taiwan, November 2007.
138. **H.-J. Sue**, "Mar Behavior of TPO", Japan Polypropylene, Japan, November 2007.
139. **H.-J. Sue**, "Manipulation of Dispersion of Nanostructures in Polymers", Tokai Rubber, Japan, November 2007.
140. **H.-J. Sue**, "Scratch Behavior of TPOs", Sumitomo Chemical, Chiba, Japan, June 2007.
141. **H.-J. Sue**, "Fracture Behavior of Epoxy Nanocomposites", Himeji Institute of Technology, Himeji, Japan, June 2007.
142. **H.-J. Sue**, "Scratch Behavior of Polymers and Coatings", Japanese Society of Polymer Processing, Tokyo, June 2007.
143. **H.-J. Sue**, "Fundamental Structure-Property Relationship of Polymer Nanocomposites", ANTEC, Society of Plastics Engineers, Cincinnati, May 2007.
144. **H.-J. Sue**, "Key Fundamental Behavior of Polymer Nanocomposites", Mitsubishi Chemical, Yokkaichi, Japan, February 2007.
145. **H.-J. Sue**, "Mechanical Behavior of Polymer Nanocomposites", National Taiwan University, Taipei, December, 2006.
146. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers", ACCM-5, Hong Kong, November, 2006.
147. **H.-J. Sue**, "Evaluation of Scratch Resistance of Polymers", Hyundai Motors, November, 2006.
148. **H.-J. Sue**, "Fundamental Structure-Property Relationship in Polymer Nanocomposites", Univ. of Bayreuth, Germany, September, 2006.

149. H.-J. Sue, "Impact Fracture Behavior of Polymers", BASF, Germany, September, 2006.
150. H.-J. Sue, "Scratch Behavior of TPOs", Borealis, Austria, September, 2006.
151. H.-J. Sue, "Evaluation of Scratch Resistance of Polypropylene", Marysville, Honda Motor, Ohio, August, 2006.
152. H.-J. Sue, Workshop on Advanced Polymeric Materials, Tai-Chung, Taiwan, June 19-22, 2006.
153. H.-J. Sue, Symposium on Green Chemistry and Nanotechnology, Tai-Chung, Taiwan, June 23, 2006.
154. H.-J. Sue, "Scratch Behavior of Polymers and Coatings", Kyoto Institute of Technology, Kyoto, Japan, June 13, 2006.
155. H.-J. Sue, "Fundamental structure-Property Relationship in Polymer Nanocomposites", Mitsubishi Chemical, Yokkaichi, Japan, June 12, 2006.
156. H.-J. Sue, "A New ASTM Methodology for Quantitative Evaluation of Adhesion, Strength, and Scratch Resistance of Coatings", Symposium on Nanotechnology for Coatings, Philadelphia, May 24, 2006.
157. H.-J. Sue, Workshop on "Adhesion and Adhesives", Plastics in Motion International Conference, Lisbon, Portugal, May 2-4, 2006.
158. H.-J. Sue, "Mechanical Behavior of Polymer Nanocomposites", Penn State Univ., College Park, PA, April 2006.
159. H.-J. Sue, "Fundamental Fracture Behavior of Polymer Nanocomposites", American Physical Society, Baltimore, MD, March 2006.
160. H.-J. Sue, "Quantitative Evaluation of Polymer Scratch Damage", Toyota Motors, Japan, March 2006.
161. H.-J. Sue, "Modeling of Polymer Scratch Behavior", Nissan Motors, Japan, March 2006.
162. H.-J. Sue, "Test Methodologies for Evaluation of Scratch Behavior of Polymers", Ford Science Lab, Dearborn, MI, October 2005.
163. H.-J. Sue, "Preparation and Characterization of Ultraviolet Light Emitting ZnO Nanocrystals", International Symposium on Nanotechnology for Mechanical, Optoelectronic and Energetic Applications, Chung-Li, Taiwan, October 2005.
164. H.-J. Sue, "Scratch Behavior of TPOs", Dow Chemical USA, Freeport, TX, September 2005.

165. **H.-J. Sue**, "Fundamentals of Polymer Nanocomposites", Sumitomo Chemical, Chiba, Japan, August 2005.
166. **H.-J. Sue**, "Test Method Development for Polymer Scratch", Japan Polypropylene, Yokkaichi, Japan, August 2005.
167. **H.-J. Sue**, "Conductive Adhesives", Metal Institute of Research & Development Center, Kaoshiung, Taiwan, August 2005.
168. **H.-J. Sue**, "Mold Temperature Effect on Scratch Resistance of TPOs", TPOs in Automotive 2005 Conf., Geneva, Switzerland, June 2005.
169. **H.-J. Sue**, "Core-Shell Rubber Particles Technology", Henkel Corporation, Dusseldorf, Germany, June 2005.
170. **H.-J. Sue**, "Fundamental Issues of Polymer Nanocomposites", Aero & Astro Dept., MIT, Boston, May 2005.
171. **H.-J. Sue**, "Structure-Property Relationship in Polymer Nanocomposites", Keynote Speech (EPSDIV), ANTEC, Boston, May 2005.
172. **H.-J. Sue**, "Scratch Behavior of Polymers", Corporate Seminar, GE Plastics, Mt. Vernon, IN, April 2005.
173. **H.-J. Sue**, "Fundamental Issues of Polymer Nanocomposites", Chung-Hsing National Univ., Chemical Engineering Seminar, Taichung, Taiwan, March 2005.
174. **H.-J. Sue**, "Preparation and Characterization of Polymer Nanocomposites", Dow Chemical, Freeport, TX, March 2005.
175. **H.-J. Sue**, "Adhesives for High Metal Bonding", Workshop on Adhesives for Metal Bonding, Taipei, Taiwan, Nov. 2004.
176. **H.-J. Sue**, "Scratch Behavior of Polymers", Kraton, Houston, August 2004.
177. **G. Lim, H.-J. Sue**, etc., "Mechanical Modeling and Experimental Observations of Slip-Agent Containing TPOs", TPOs in Automotive - 2004, Barcelona, Spain, June 2004.
178. **H.-J. Sue**, "Test Method Development and Materials Science of Polymer Scratch", Univ. of Southern Mississippi, November 2003.
179. **H.-J. Sue**, "Design of Scratch Resistant Polymers", BP Chemical, Chicago, July 2003.
180. **H.-J. Sue**, "Surface Damage Phenomena of TPO Materials", TPOs in Automotive Conf., Maastricht, The Netherlands, June 2003.
181. **H.-J. Sue**, "Scratch Behavior in Polymers", Polyolefins Conf., Houston, Feb 2003.

182. H.-J. Sue, "Functional Nanoparticles", KANEKA-Japan, January 2003.
183. H.-J. Sue, "Clay-Based Polymer Nanocomposites", Specialty Minerals, PA, October 2002.
184. H.-J. Sue, "Polymer Nanocomposites", Wuhan University, China, June 2002.
185. H.-J. Sue, "ECAE Polymer Extrusion", Tokyo Institute of Technology, Japan, May 2002.
186. H.-J. Sue, "Modeling of Polymer Scratch", Toyota R&D Center, Japan, October 2001.
187. H.-J. Sue, "Scratch Behavior in Polymers", Yamagata University, Japan, October 2001.
188. H.-J. Sue, "Mechanical Properties of Molecularly Oriented Polymers", ICMAT-'01, Singapore, July 2001.
189. H.-J. Sue, "Polymer Nanocomposites", City Univ. Hong Kong, Hong Kong, June 2001.
190. H.-J. Sue, "Recent Progress in Toughening and Strengthening of PP", Union Carbide, Houston, March 2001.
191. H.-J. Sue, "Toughening of Epoxy Nanocomposites Using CSR", Institute of Materials Research and Engineering, January 2001.
192. H.-J. Sue, "Slow Crack Growth in Shear-Oriented PP", Nanyang Technology University, January 2001.
193. H.-J. Sue, "Processing-structure-Property Relationships in HDPE", Hong Kong University of Science and Technology, Hong Kong, January 2001.
194. H.-J. Sue, "Scratch Behavior and Material Property Relationship in Polymers", TPO-'00, Detroit, October 2000.
195. R.A. Pearson, H.-J. Sue (Co-Editor) and A.F. Yee, Toughening of Plastics, ACS Book Series, 759, 2000.
196. H.-J. Sue, "Fractography in Engineering Plastics", Japanese National Institute of Standard, Tokyo, June 2000.
197. H.-J. Sue, "Recent Advances in Polymer Toughening", Yamagata University, Yanezawa, Japan, June 2000.
198. H.-J. Sue, "Development of Microelectronic Packaging Materials", HKUST, Hong Kong, June 1999. (Conducted one month of research)
199. H.-J. Sue, "Toughening of TPOs Using the Rigid-Rigid Polymer Toughening Concept", 2nd Pacific Polymer Conference, HKUST, Hong Kong, January 12-16, 1999.

200. H.-J. Sue, "Development of Scratch/Mar and Impact Resistant TPOs for Automotive Applications", TPO-'98, Detroit, October 1998.
201. H.-J. Sue, "Morphology and Fracture Behavior in Liquid Crystalline Epoxy Composites", 8th US-JAPAN Conf. On Composite Materials, Baltimore, September 1998.
202. H.-J. Sue, "Core-Shell Particle Technologies for Engineering Thermosets", Additives-'98, Orlando, FL, February 1998.
203. H.-J. Sue, "Structure-Property-Process Relationship in Engineering Thermosets", INSA, Lyon, France, June 1997. (Conducted one month of research)
204. H.-J. Sue, "Fundamentals of Core-Shell Particle Technology for Thermoset Toughening", Rohm & Haas Corporation, Corporate Invited Speakers Series, Philadelphia, Dec. 1997.
205. H.-J. Sue, "Materials Science in Epoxy Resins", Symposium on Epoxy Resins for Coatings and Adhesives Applications, Organized by Yuan-Ze Univ., Taipei, Taiwan, January 1997.
206. R.A. Pearson and H.-J. Sue, Guest Editor of *Polymer Engineering & Science* on Fracture and Failure of Plastics, No. 18, 36, 1996.
207. H.-J. Sue, J.D. Earls, and R.E. Hefner, Jr., "Fracture Mechanisms in Liquid Crystalline Epoxies", Gordon Research Conference on High Performance Thermosetting Polymers, New Hampshire, July 1996.
208. H.-J. Sue and P.M. Puckett, "Molecular Toughening of Engineering Thermosets --- A Preliminary Finding", North American Symposium on Toughened Plastics, PMSE, ACS, Hilton Head, SC, February 1996.
209. H.-J. Sue and J.L. Bertram, "Recent Findings in Fracture and Toughening of Engineering Thermosets", Gordon Research Conference on Composites, Ventura, CA, January 1996.
210. H.-J. Sue, "Core-Shell Particle Technologies for Thermosets Toughening", International Symposium on Polymer Blends, Chiao-Tung Univ., Hsing-Chu, Taiwan, July 1995.
211. H.-J. Sue and J.L. Bertram, "Characterization and Promotion of Craze-Like Damage in Toughenable Thermosetting Resins", Materials Research Society Conf. on Polymer Matrix Composites, Boston, November 1994.
212. H.-J. Sue, "Recent Advances in Toughened Rigid-Rigid Polymer Alloys", 2nd North Amer. Res. Conf. on Blends and Alloys, PMSE, ACS, Hilton Head, South Carolina, Feb. 1994.
213. H.-J. Sue, "Studies of Fracture and Toughening of Interleaved Composites for Impact Damage Resistance", International Symposium on Polymer Alloys and Composites, Hong Kong Polytechnic Univ., Hong Kong, December 1992.

214. H.-J. Sue, "Micro-Fracture Mechanisms and the Related Micromechanics in Toughened High Performance Polymers and Composites", Gordon Research Conference on High Performance Thermosetting Polymers, New Hampshire, June 1992.

215. H.-J. Sue, "Design of Toughened High Performance Polymer Blends", International Symposium on Polymer Blends and Rubber-Toughened Thermoplastics, Chiao-Tung Univ., Taiwan, December 1992.

B. International Conferences and Organization

Symposium on Design and Characterization of Surface and Interface in Polymers, ACS, San Diego, CA, March 21-22, 2021 (Co-organizer).

Symposium C-3 on Nanomechanics, MRS, Yokohama, Japan, December 13-15, 2021 (Co-organizer).

Symposium on Tough and Self-healing Polymers, IUPAC, Hawaii, December 2021 (Co-organizer).

Symposium on Tough and Toughened Polymers, ACS, Boston, August 19-23, 2018 (Co-organizer).

Symposium on Polymeric Materials for Future Vehicles, Taipei, November 19-22, 2017 (Co-organizer).

MRS Symposium on Polymers in Confined States, Kyoto, August 27-31, 2017 (Co-organizer).

International Conference on Energy and Transportation Materials, Chengdu, China, October 16-17, 2014 (Organizer).

International Conference on Clay Minerals, College Station, TX, May 2014 (Session Chair).

American Chemical Society, Symposium on Polymers for Nanotechnology, March, 2011.

American Chemical Society, Symposium on Nanoscale Phenomena in Polymers, August, 2010.

Plastics in Motion International Conference, Lisbon, Portugal, May 2-4, 2006.

TPO in Automotive 2005 International Conference, Geneva, Switzerland, June 21-23, 2005.

Seventh International Conference on Materials for Safety and Health, Montreal, Canada, 2004-5.

International Conference on Advanced Polymers and Processing, Yamagata University, Japan, October 29-November 2, 2001.

International Workshop on Fracture Mechanics and Advanced Engineering Materials, Sydney University, Australia, December 8-10, 1999.

Chair Failure Analysis & Prevention, ANTEC, SPE, 1998-9.

Program Chair Failure Analysis & Prevention, ANTEC, SPE, 1997-8.

Co-Organizer Symposium on Toughened Plastics, ACS, Fall 1997-8.

Guest Editor Special Issue on Fracture and Failure of Plastics, *Polym. Eng. Sci.*, 1996.

Co-Organizer Symposium on Fracture Mechanics of Polymers, ANTEC, SPE, 1995.

D. Review of Journal Articles and Proposals

Regularly reviewing for Journal of Polymer Science - Physics Edition, Macromolecules, Composite Science and Technology, Polymer, Polymer Composites, Polymer Engineering and Science, Hong Kong Research Council proposals, U.S. Civilian Research & Development Foundation proposals, and Australian Research Council proposals.

E. Society of Plastic Engineers

Faculty Advisor of the local chapter of the Society of Plastics Engineers (SPE). Help organize monthly speakers for SPE; help arrange for plant tour for students; Help contact local industry for scholarship fund donation to local SPE.

F. External Short Courses and Workshop Taught

1. **H.-J. Sue**, Short Course on " Mechanical Properties of Polymers and Polymer Nanocomposites", National Taipei Univ. of Tech., Taiwan, May 22-24, 2019.
2. **H.-J. Sue**, Short Course on "Fundamentals of Polymeric Materials", GAF Corporation, Feb. 22, 2019.
3. **H.-J. Sue**, Short Course on "Deformation and Damage on Polymer Surfaces", National Taipei Univ. of Tech., Taiwan, Nov. 12, 2018.
4. **H.-J. Sue**, Short Course on "Polymer Nanocomposites", Formosa Plastics, Kaoshong, Taiwan, August 14-17, 2017.
5. **H.-J. Sue**, Short Course on "Polymer Toughening", Formosa Plastics, Kaoshong, Taiwan, Jan. 16-17, 2017.
6. **H.-J. Sue**, Short Course on "Fracture Behaviors of Polymers and Films", Kaneka Corporation, Osaka, Japan, Dec. 7, 2016.
7. **H.-J. Sue**, Short Course on "Polymer Materials Science", Formosa Plastics, Kaoshiung, Taiwan, January 7-8, 2016.
8. **H.-J. Sue**, Workshop on "Nanomaterials Processing", Kobe Univ., Kobe, Japan, June 18, 2015.
9. **H.-J. Sue** and Tim Bremner, Short Course on "High Performance Polymers", Eastman Chemical, Kingsville, TN, January 9-10, 2015.

10. **H.-J. Sue**, Short Course on "Mechanical Behavior of Polymers and Composites", Sichuan Univ., Chengdu, China, June 23 – 27, 2014.
11. **H.-J. Sue**, Workshop on "Fundamentals of Polymer Science and Engineering", State Key Lab of Polymer Materials Engineering, Sichuan Univ., Sichuan, China, June 14 – 18, 2013.
12. **H.-J. Sue**, "Fundamental Scratch Behavior of Polymers, Thin Films and Coatings", Polymer Scratch Workshop, ITRI, Hsinchu, Taiwan, October 16, 2012.
13. **H.-J. Sue**, Workshop on "Practices of Scratch Testing and Evaluation of Polymeric Materials", Asian Workshop on Polymer Processing, Kyoto, Japan, August 28-31, 2012.
14. **H.-J. Sue**, "Nanoscale Toughening and Strengthening of Polymers", Toughening Workshop, Univ. Minnesota, January 14, 2010.
15. **H.-J. Sue**, Workshop on Mechanical Properties and Scratch Behavior of TPOs, Braskem, Brazil, Jan. 2009.
16. **H.-J. Sue**, Workshop on Scratch Behavior of Polymers, Gifu, Japan, June 2008.
17. **H.-J. Sue**, 2nd International Workshop on Moisture Induced Damage of Asphalt Mixes, College Station, September 2007.
18. **H.-J. Sue**, Workshop on Fracture Mechanics of Polymers, Houston, March 2007.
19. **H.-J. Sue**, Workshop on Mechanical Properties of Polymers, Taichung, Taiwan, July 2006.
20. **H.-J. Sue** and Mike Chung, Workshop on Bonding of Plastics, Plastics in Motion Conferences, Lisbon, Portugal, May 2006.
21. **H.-J. Sue**, Workshop on Scratch Behavior of Polymers, TPO Conferences, Geneva, Switzerland, June 2005.
22. **H.-J. Sue**, Short Course on Impact Fracture Behavior of Polymers, BP Chemical, Oct. 2004.
23. **H.-J. Sue**, Short Course on Polymer Materials Science, SUNOCO, August 2004.
24. **H.-J. Sue**, Short Course on Mechanical Behavior of Polyolefins, Engelhard, July 2004.
25. **H.-J. Sue**, Short Course on Mechanical Properties of Polymers, BP Chemical, Aug. 2003.
26. **H.-J. Sue**, Workshop on Functional Adhesives, Taiwanese Economic Counsel, Oct. 2002.
27. **H.-J. Sue**, Workshop on Polymer Nanocomposites, City Univ. of Hong Kong, June 2001.
28. **H.-J. Sue**, Workshop on Toughening of Plastics, PMSE, ACS, Boston, August 1998.

29. H.-J. Sue, Short Course on Fracture and Toughening of Semi-Crystalline Polymers, EXXON Corporate R&D Center, Woodland, TX, March 1998.
30. H.-J. Sue, Short Course on Mechanical and Fracture Behavior of Polymers, Union Chemical Laboratories, HsinChu, Taiwan, November 1993.
31. H.-J. Sue, Short Course on Crosslinked Polymers — Chemistry, Properties and Applications, New Orleans, Louisiana, October 2-5, 1993.
32. H.-J. Sue, Short Course on Fundamentals of Adhesion, New Orleans, October 2-5, 1993.
33. H.-J. Sue, Short Course on Crosslinked Polymers — Chemistry, Properties and Applications, Tokyo, Japan, January 11-14, 1993.
34. H.-J. Sue, "Role of Rubber Particle Cavitation in Polymer Toughening", Workshop on Rubber Toughening of Polymers, Lehigh University, Bethlehem, PA, August 1992.

G. Professional Society

Member	International Microelectronics and Packaging Society
Member	Alpha Sigma Mu and Sigma Xi Society
Member	American Chemical Society (ACS)
Member	Materials Research Society (MRS)
Member	Society of Plastics Engineer (SPE)
Book Editor	<u>Toughening of Plastics</u> , American Chemical Society Book Series, 1999.
Guest Editor	Special Issue on <u>Fracture and Failure of Plastics</u> , <i>Polym. Eng. Sci.</i> , 1996.
Advisor	Local Chapter of Society of Plastics Engineers, 1995-.

H. Others

Helped Kaneka Corporation established a North American Advanced Materials R&D Center at TAMU in 2013.

V. UNIVERSITY SERVICES

1. Polymer Technology Center

Director; establish research consortia with industry; coordinate polymer courses offered for all undergraduate & graduate students; build networking with the polymer industry globally; assist faculty members to secure funding with industry; organize monthly seminar series; solicit donation and maintain numerous polymer research equipment; solicit new PTC members.

2. Consortium on Scratch Behavior in Polymers

Director; responsible for managing research projects with the sponsoring companies and to solicit funding from federal government agencies.

3. Consortium on Advancing Performance Polymers in Energy Section Applications

Co-Director; responsible for managing research projects with the sponsoring companies and to solicit funding from federal government agencies.

4. University and Departmental Committee Members

University Endowed Chair Approval Committee, Member, 3/14-present.

MSEN T&P Committee, Member, 12/13-present.

MSEN Admissions Committee, Member, 09/11-08/17.

MEEN T&P Committee, Member, 6/11-12/11.

MEEN T&P Committee, Member, 12/06-8/09.

MEEN Post Tenure Review Committee, Member, 9/06-8/09.

MEEN Faculty Award Committee, Member, 9/04-8/06.

MEEN Graduate Studies Committee, Member, 11/00-8/01.

MEEN Materials Faculty Search Committee, Member, 9/99-8/01.

MEEN Graduate Curriculum Committee, Member, 9/97-5/98.

MEEN Seminar/Speaker Committee, Member, 9/97-1/98.

MEEN Graduate Admission Committee, Member, 9/95-1/98.

VI. HONORS AND AWARD

Meinhard H. Kotzebu '14 Professorship, 2020-present.

Fellow, Society of Plastic Engineers, 2010-present.

TEES Professorship, 2014-2020.

Patent and Innovations of the Year Award, Office of Technology Commercialization, TAMU, 2019.

Visiting Chair Professor, National Taipei University of Technology, Taipei, Taiwan, 2015-2020.

Specially Dedicated ACS Symposium for my 60th Birthday, 256th ACS National Conferences, Boston, August 19-23, 2018.

Visiting Professor, Kobe University, Kobe, Japan, 2015-2018.

Visiting Professor, University of Rome, Tor Vergata, Italy, 2017.

Visiting Professor, Nanjing Technical University, Nanjing, China, 2014-2017.

Honorary Chair Professor, State Key Lab of Polymer Materials Engineering, Sichuan Univ., Sichuan, China, 2013-2016.

Distinguished Speaker Award, Chinese American Society of Plastics Engineers, 2014.

Linda & Ralph Schmidt Endowed Professor, 2010-2014.

Best Poster Awards (2nd Place), International Polyolefins Conf., Houston, February, 2013.

Outstanding Alumni Award, Chemical Engineering Department, Chung Yuan University, Chung-Li, Taiwan, October 2012.

ANTEC Poster Competition, 1st Place Award, Orlando, FL, April 1-5, 2012.

Best Poster Awards (2nd Place), International Polyolefins Conf., Houston, February, 2010.

Patent and Innovations Award, Office of Technology Commercialization, TAMU, 2010.

Best Poster Awards (Honorable Mention), International Polyolefins Conferences, Houston, February, 2010.

Best Paper Award, SPE-ACCE conference, Troy, MI, 2009.

Best Poster Awards (2nd place prize), International Polyolefins Conferences, Houston, February, 2008.

Best Poster Awards (1st place prize), International Polyolefins Conferences, Houston, February, 2007.

E.D. Brockett Professorship Award, 2006.

Best Poster Awards (2nd and 3rd prizes), International Polyolefins Conferences, Houston, February 26 - March 1, 2006.

Publication Chosen as Journal Cover: *Adv. Funct. Mat.*, Vol. 15, Issue 3, 2005.

Best Poster Awards (1st, 2nd, and 3rd prizes), International Polyolefins Conferences, Houston, February 28 - March 2, 2005.

Best Paper Award, Failure Analysis and Prevention Special Interest Group, ANTEC, Society of Plastics Engineers, 2004-2005.

Best Poster Awards (1st, 2nd, and 3rd prizes), International Polyolefins Conferences, Houston, Feb. 23-25, 2004.

Best Paper Award, Division of Engineering Properties and Structure, ANTEC, Society of Plastics Engineers, 2003-2004.

Faculty Fellow, Texas A&M University, 2002-2007. (\$100,000 Cash Award)

TEES Senior Fellow, Texas Engineering Experimental Station, State of Texas, 2002-2003. (\$5,000 Cash Award)

TEES Fellow, Texas Engineering Experimental Station, State of Texas, 2000-2002. (\$10,000 Cash Award)

Best Poster Award, (Polyolefins XIII – 2001), SPE. (\$1,000 Cash Award)

Tan Chin Tuan Faculty Fellowship, Nan-Yang Technological University, Singapore, 2000-2001. (\$4,000 Cash Award)

Best Poster Award, (Polyolefins XII – 2000), SPE. (\$1,000 Cash Award)

Faculty Advisor Award, Society of Plastics Engineers, 2000.

Faculty Fellow, College of Engineering, Texas A&M University, 1999-2000. (\$5,000 Cash Award)

Best Paper Award, Division of Engineering Properties and Structure, ANTEC, Society of Plastics Engineers, Society of Plastic Engineers, 1999-2000.

Guest Co-Editor for *Polym. Eng. Sci.*, Fracture and Failure of Plastics, September 1996.

Publications Chosen by *Journal of Materials Science* as Journal Covers, June 1992 & Dec. 1993.