

## 蘇莉芸 (Li-Yun Su)

Phone: 886-6-2533131 ext.3720

E-mail: [lysu@stust.edu.tw](mailto:lysu@stust.edu.tw)



### AWARDS AND HONORS

---

2020 Rewarded the Honorable Mention on MOST Postdoctoral Research Paper Award (Taiwan) (109 年度博士後研究人員學術論文獎)

<https://www.most.gov.tw/most/attachments/d2101ce6-c797-4e60-805a-89d92b422344>

2020 Rewarded the Honorable Mention on Center for Condensed Matter Sciences Symposium (Taiwan)

2015 MOST of Dragon Gate Project Visiting Researcher Fellowship (Taiwan) (科技部任務導向型計畫-龍門計畫)

2011 Rewarded the Honorable Mention on The 34<sup>th</sup> R.O.C. Polymer Symposium (Taiwan)

### EDUCATION

---

2008 ~ 2014 Ph. D., Institute of Polymer Science and Engineering, National Taiwan University (NTU), Taiwan.

2006 ~ 2008 M. S., Department of Chemistry, Chung Yuan Christian University, Taiwan.

2002 ~ 2006 B. S., Department of Chemistry, Chung Yuan Christian University, Taiwan.

### RESEARCH AND PROFESSIONAL EXPERIENCE

---

2022/08 ~ Associate Professor of Southern Taiwan University of Science and Technology, Taiwan

2021/08 ~ 2022/07 Department of Chemical Engineering, NTU, Supervisor: *Chu-Chen Chueh*

2021/02 ~ 2020/07 Center for Condensed Matter Sciences, NTU, Taiwan, Supervisor: *Leeyih Wang*

2020/08 ~ 2021/01 Department of Chemical Engineering, NTU, Supervisor: *Chu-Chen Chueh*

2019/08 ~ 2020/08 Center for Condensed Matter Sciences, NTU, Taiwan, Supervisor: *Leeyih Wang*

2020/01 ~ 2020/07 Center for Integrated Nanotechnologies (MPA-CINT)/Materials Synthesis and Integrated Devices (MPA-11), Los Alamos National Laboratory, Supervisor: *Wanyi Nie* (Visiting researcher)

2017/08 ~ 2019/08 Department of Chemical Engineering, NTU, Supervisor: *Chu-Chen Chueh*

2015/12 ~ 2016/12 Center for Condensed Matter Sciences, NTU, Taiwan, Supervisor: *Leeyih Wang*  
Material Science Division/Argonne National Laboratory, Supervisor: *Wei Chen* and *Matthew Tirrell*.  
(Visiting researcher)

2015/02 ~ 2015/12 Institute of Polymer Science and Engineering, NTU, Taiwan, Supervisor: *R. J. Jeng*

### PERT

---

Synthesis of the precise polymer with **thermo-responsive property** by **atomic transfer radical polymerization (ATRP)**.

Synthesis of **honeycomb-like polymeric films** from dendritic polymers and application for **surface-enhanced Raman scattering (SERS) detection**.

Fabrication and characteristics of optoelectronic device, and morphology of thin film analysis by synchrotron radiation (**grazing incidence small/wide angle X-ray, GISAXS/GIWAXS**).

Novel self-assembling interlayers design and synthesized for improving device thermal stability (**the lifetime of the novel device is 4 times that of the control device**).

Development on a large area (**5x5 cm**) semiconductor device.

## BLICAITON LISTS

---

**L. Y. Su\***, H. H. Huang, C. E. Tsai, C. H. Hou, J. J. Shyue, C. H. Lu, C. W. Pao, M. H. Yu, L. Wang\*, C. C. Chueh\*, “Improving Thermal and Photostability of Polymer Solar Cells by Robust Interface Engineering”, *Small*, **2022**, 18, 210783. (SCI, IF=15.153; Cite Score Rank: 25/345=7.25%, Material Science, Multidisciplinary)

J. F. Chang, C. T. Hsieh, **L. Y. Su**, C. C. Chueh\*, “Reducing the side-chain influences of isoindigo-based polymer donors by backbone fluorination in photovoltaic application”, *Dyes and Pigments*, **2022**, 199, 110338. (SCI, IF=4.889; Cite Score Rank: 16/74=21.6%, Chemistry, Applied)

A. Kato, **L. Y. Su\***, Y. C. Lin, L. Wang, W. C. Chen, C. C. Chueh\*, T. Higashihara\*, “Naphthalene-diimide-based all-conjugated block copolymer as an effective compatibilizer to improve the performance and thermal stability of all-polymer solar cells”, *Mater. Chem. Front.* **2021**, 5, 7216-7227. (SCI, IF=6.482; Cite Score Rank: 78/333=23%, Material Science, Multidisciplinary)

H. H. Huang, Q. H. Liu, H. Tsai, S. Shrestha, **L. Y. Su**, P. T. Chen, Y. T. Chen, T. A. Yang, H. Lu, C. H. Chuang, K. F. Lin, S. P. Rwei, W. Nie\*, L. Wang\*, “A simple one-step method with wide processing window for high quality perovskite mini-module fabrication”, *Joule* **2021**, 5, 958-974. (SCI, IF=41.248; Cite Score Rank: 4/333=1.2%, Material Science, Multidisciplinary)

**L. Y. Su**, H. H. Huang, Y. C. Lin, G. L. Chen, W. C. Chen, W. Chen, L. Wang\*, C. C. Chueh\*, “Enhancing Long-Term Thermal Stability of Non-Fullerene Organic Solar Cells Using Self-Assembly Amphiphilic Dendritic Block Copolymer Interlayers”, *Adv. Funct. Mater.* **2021**, 31 2005753. (SCI, IF=18.808; Cite Score Rank: 13/314=4.14%, Material Science, Multidisciplinary)

**Y. A. Su**, N. Maebayashi, H. Fujita, Y. C. Lin, C. I. Chen, W. C. Chen, T. Michinobu, C. C. Chueh\*, T. Higashihara\* “Development of block copolymers with poly(3-hexylthiophene) segments as compatibilizers in non-fullerene organic solar cells”, *ACS Appl. Mater. Interfaces* **2020**, 12, 12083-12092. (SCI, IF=9.229; Cite Score Rank: 33/314=10.5%, Material Science, Multidisciplinary)

Y. T. Wong, P. C. Lin, C. W. Tseng, Y. W. Huang, **Y. A. Su**, W. C. Chen, C. C. Chueh\* “Biaxially-extended side-chain engineering of benzodithiophene-based conjugated polymers and their applications in polymer solar cells”, *Org. Electronics.* **2020**, 79, 105630. (SCI, IF=3.721; Cite Score Rank: 43/171=25.1%, Physics, applied)

C. H. Chen, Z. Li, Q. Xue\*, **Y. A. Su**, C. C. Lee, H. L. Yip\*, W. C. Chen, C. C. Chueh\*, “Engineering of Perovskite Light-Emitting Diodes Based on Quasi-2D Perovskites Formed by Diamine Cations”, *Org. Electronics*, **2019**, 75, 105400. (SCI, IF=3.31; Cite Score Rank: 41/155=26.5%, Physics, applied)

H. C. Hsieh, C. Y. Hsiow, **Y. A. Su**, Y. C. Liu, W. Chen, W. Y. Chiu, Y. C. Shih, K. F. Lin, L. Wang, “Two-dimensional polythiophene homopolymer as promising hole transport material for high-performance perovskite solar cells” *Journal of Power Source*, **2019**, 426, 55–60. (SCI, IF=8.247; Cite Score Rank: 3/27=11.1%, Electrochemistry)

C. C. Chueh, C. I. Chen, **Y. A. Su**, H. Konnerth, Y. J. Gu, C. W. Kung, K. C. W. Wu, “Harnessing MOF materials in photovoltaic devices: recent advances, challenges, and perspectives” *J. Mater. Chem. A*, **2019**, 7, 17079-17095. (review) (SCI, IF=11.301; Cite Score Rank: 7/314=7.64%, Material Science, Multidisciplinary)

C. C. Lin, C. C. Tsai, M. Y. Liao, **Y. A. Su**, S. T. Lin, and C. C. Chueh, “Stable, color-tunable 2D SCN-based perovskites: revealing the critical influence of an asymmetric pseudo-halide on constituent ions” *Nanoscale*, **2019**, 11, 2608–2616. (SCI, IF=6.895; Cite Score Rank: 28/177=15.8%, Chemistry Multidisciplinary)

P. C. Lin, Y. T. Wong, **Y. A. Su\***, W. C. Chen, and C. C. Chueh, “Interlayer Modification Using Eco-Friendly Glucose-Based Natural Polymers in Polymer Solar Cells” *ACS Sustainable Chem. Eng.* **2018**, 6, 14621-14630. (SCI, IF=6.970; Cite Score Rank: 9/138=6.52%, Engineering, Chemical)

C. H. Tsai<sup>+</sup>, **Y. A. Su**<sup>+</sup>, P. C. Lin, C. C. Shih, H. C. Wu, W. C. Chen and C. C. Chueh, “High-performance ternary polymer solar cells using wide-bandgap biaxially extended octithiophene-based conjugated polymers” *J. Mater. Chem. C* **2018**, 6, 6920-6928. (cover) (co-first author) (SCI, IF=6.641; Cite Score Rank: 20/148=13.5%, Physics, Applied)

Y. J. Hsieh, Y. C. Huang, W. S. Lin, **Y. A. Su**, C. S. Tsao, S. P. Rwei and L. Wang, “Insights into the Morphological Instability of Bulk Heterojunction PTB7-Th/PCBM Solar Cells upon High-Temperature Aging” *ACS Appl. Mater. Interfaces* **2017**, 9, 14808–14816. (SCI, IF=8.097; Cite Score Rank: 32/280=11.4%, Material Science, Multidisciplinary)

Z. Hu, H. Chen, J. Qu, X. Zhong, P. Chao, A. Liu, L. Tian, **Y. A. Su**, W. Chen, F. He “Design and Synthesis of Chlorinated Benzothiadiazide-based Polymers for Efficient Solar Energy Conversion” *ACS Energy Lett.*, **2017**, 2, 753–758. (SCI, IF=12.277; Cite Score Rank: 1/28=3.57%, Electrochemistry)

D. Mo, H. Wang, H. Chen, S. Qui, P. Chao, Z. Yang, L. Tian, **Y. A. Su**, W. Chen, F. He “Chlorination of Low Band-gap Polymers: Towards High Performance Polymer Solar Cells” *Chem. Mater.*, **2017**, 29, 2819-2830. (SCI, IF=9.89; Cite Score Rank: 21/285=7.37%, Material Science, Multidisciplinary)

C. Y. Chiang, T. Y. Liu, **Y. A. Su**, C. H. Wu, Y. W. Cheng, H. W. Cheng, R. J. Jeng “Au nanoparticles immobilized on honeycomb-like polymeric films for surface-enhanced Raman scattering (SERS) detection” *Polymers* **2017**, 9, 93 (17 pages) (SCI, IF=2.935; Cite Score Rank: 19/87=21.8%, Polymer Science)

H. C. Lin, **Y. A. Su**, T. Y. Liu, Y. J. Sheng, J. J. Lin, “Thermo-Responsive Nanoarrays of Silver Nanoparticle, Silicate Nanoplatelet and PNiPAAm for the Antimicrobial Applications” *Colloids and*

Surfaces B: Biointerfaces **2017**, 152, 459-466. (**cover**) (SCI, IF=3.997; Cite Score Rank: 44/147=29.9%, Chemistry, Physical)

Z. Cai, L. Li, W. Y. Lo, D. Zhao, Q. Wu, N. Zhang, **Y. A. Su**, W. Chen, L. Yu “Controlled Self-Assembly of Cyclophane Amphiphiles: From 1D Nanofibers to Ultrathin 2D Topological Structures” *Macromolecules* **2016**, 49, 5172–5178. (SCI, IF=5.835; Cite Score Rank: 5/86=5.81%, Polymer Science)

R. Anbazhagan, **Y. A. Su**, H. C. Tsai, R. J. Jeng, “MoS<sub>2</sub>-Gd Chelate Magnetic Nanomaterials with Core Shell structure Used as Contrast Agents in in vivo Magnetic Resonance Imaging” *ACS appl. Mater. Interfaces* **2016**, 8, 1827–1835. (SCI, IF=7.504; Cite Score Rank: 22/275=8%, Material Science, Multidisciplinary)

A. H. H. Mevold, W. W. Hsu, A. Hardiansyah, L. Y. Huang, M. C. Yang, T. Y. Liu, T. Y. Chan, K. S. Wang, **Y. A. Su**, R. J. Jeng, J. K. Wang, Y. L. Wang “Fabrication of Gold Nanoparticles/Graphene-PDDA Nanohybrids for Biodetection by SERS Nanotechnology” *Nanoscale Research Letters* **2015**, 10, 1–7. (SCI, IF=2.584; Cite Score Rank: 69/271=25.5%, Material Science, Multidisciplinary)

**Y. A. Su**, W. C. Lin, H. J. Wang, W. H. Lee, R. H. Lee, S. A. Dai, C. F. Hsieh and R. J. Jeng, “Enhanced photovoltaic performance of inverted polymer solar cells by incorporating graphene nanosheet/AgNPs nanohybrids” *RSC Adv.* **2015**, 5, 25192–25203. (SCI, IF=3.289; Cite Score Rank: 49/163=30.1%, Chemistry, Multidisciplinary)

**Y. A. Su**, W. F. Chen, T. Y. Juang, W. H. Ting, T. Y. Liu, C. F. Hsieh, S. A. Dai and R. J. Jeng, “Honeycomb-like Polymeric Films from Dendritic Polymers Presenting Reactive Pendent Moieties” *Polymer* **2014**, 55, 1481–1490. (SCI, IF=3.562; Cite Score Rank: 16/82=19.5%, Polymer Science)

T. C. Huang, **Y. A. Su**, T. C. Yeh, H. Y. Huang, C. P. Wu, K. Y. Huang, Y. C. Chou, J. M. Yeh and Y. Wei, “Advanced Anticorrosive Coatings Prepared from Electroactive Epoxy–SiO<sub>2</sub> Hybrid Nanocomposite Materials” *Electrochim. Acta* **2011**, 56, 6142–6149. (SCI, IF=3.832; Cite Score Rank: 7/27=25.9%, Electrochemistry)

Y. F. Lan, B. Z. Hsieh, H. C. Lin, **Y. A. Su**, Y. N. Chan and J. J. Lin, “Poly(N-isopropylacrylamide)-Tethered Silicate Platelets for Colloidal Dispersion of Conjugated Polymers with Thermoresponsive and Photoluminescence Properties” *Langmuir* **2010**, 26, 10572–10577. (SCI, IF=4.269; Cite Score Rank: 26/225=11.6%, Material Science, Multidisciplinary)

Y. M. Chen, H. C. Lin, R. S. Hsu, B. Z. Hsieh, **Y. A. Su**, Y. J. Sheng and J. J. Lin, “Thermoresponsive Dual-Phase Transition and 3D Self-Assembly of Poly(N-Isopropylacrylamide) Tethered to Silicate Platelets” *Chem. Mater.* **2009**, 21, 4071–4079. (SCI, IF=5.368; Cite Score Rank: 14/214=6.54%, Material Science, Multidisciplinary)

K. Y. Huang, C. L. Shiu, **Y. A. Su**, C. C. Yang, J. M. Yeh, Y. Wei and K. R. Lee, “Preparation and Gas Transport Properties of Dense Fluoroaniline Copolymer Membranes” *J. Membr. Sci.* **2009**, 339, 171–176. (SCI, IF=3.203; Cite Score Rank: 8/128=6.25%, Engineering, Chemical)

K. Y. Huang, **Y. A. Su**, P. S. Wu and J. M. Yeh, “Studies of the Pumping Effect on the Nanoporous Microstructure of Disordered Mesoporous Silica Materials Prepared by Calcinations of PMMA-silica Hybrids” *J. Non-Cryst. Solids* **2009**, 355, 938–942. (SCI, IF=1.252; Cite Score Rank: 6/25=24%, Material Science, Ceramics)

## CONFERENCE PRESENTATIONS

---

The Center for Condensed Matter Sciences Symposium, Taipei, Taiwan, December 2020

Poster: Enhancing Long-Term Thermal Stability of Non-Fullerene Organic Solar Cells Using Self-Assembly Amphiphilic Dendritic Block Copolymer Interlayers

The Federation of Asian Polymer Societies Polymer Congress (FAPS 2019), Taipei, Taiwan, October 2019

Oral: Interlayer Modification Using Conjugated, Amphiphilic and Eco-Friendly Polymers in Polymer Solar Cells

2019 European Materials Research Society, Nice, France, May 2019.

Poster: Interlayer Modification Using Conjugated, Amphiphilic and Eco-Friendly Polymers in Polymer Solar Cells

2016 Material Research Society Fall Meeting, Boston, MA, USA, November 2016.

Poster: Photocatalytic CO<sub>2</sub> Reduction Sensitized by Organic Dyes.

The 39<sup>th</sup> ROC Polymer Symposium, Tainan, Taiwan, January 2016.

Poster: Self-assembled structures in dendritic block copolymers with various branching generations and chain lengths.

The 13<sup>th</sup> Pacific Polymer Conference, Kaohsiung, Taiwan, November 2013.

Poster: Self-assembly of Amphiphilic Dendritic Diblock Copolymers.

2011 European Materials Research Society, Nice, France, May 2011.

Poster: Synthesis of AgNPs Embedded on Clay-PNiPAAm Exhibiting Thermo-Responsive Antimicrobial Property.

13<sup>th</sup> Asia Pacific Confederation of Chemical Engineering Congress, Taipei, Taiwan, October 2010.

Poster: Nanoscale Interaction of Ionic Silicate Plates with Surfactants and Biomaterials.

American Chemical Society 240<sup>th</sup> National Meeting, Boston, MA, USA, August 2010.

Poster: Phase Transformation of Double-Headed Initiators for ATRP Grafting of Poly(N-Isopropylacrylamide) from Silicate Platelets.

American Chemical Society 239<sup>th</sup> National Meeting, San Francisco, CA, USA, March 2010.

Poster: Synthesis of Immobilized Silver Nanoparticles on Poly(N-Isopropylacrylamide) Tethered to Silicate Platelets for Antibacterial Test.

American Chemical Society 239<sup>th</sup> National Meeting, San Francisco, CA, USA, March 2010.

Poster: Water Surface Tension of Poly(N-isopropylacrylamide) Tethered Silicate Plates.

The 4<sup>th</sup> Conference of Aseanian Membrane Society, Taipei, Taiwan, August 2007.

Poster: Effect of Feed Composition on Gas separation property of Poly (aniline-co-ortho-alkoxyaniline) Membranes.

Edit 08/2022