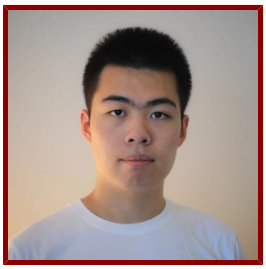
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Publications

PUBLICATIONS

- **Mitigating tin ion migration and reinforcing buried interface via synergistic polymer-modified tin oxide.** *Nature communications*
  Yang, W., Zhao, Y., Suo, Z. Y., Lin, Y. C., Wang, M., Huang, W., Zheng, J. G., Lee, J. H., Xu, M., Tong, Y., Shen, Z., Meng, D., Zheng, et al
  2026; 17 (1)
- **A monolithic fabrication platform for intrinsically stretchable polymer transistors and complementary circuits** *DEVICE*
  Yuan, Y., Zhao, C., Ronchini, M., Nishio, Y., Zhong, D., Wu, C., Kweon, H., Sun, Z., Mow, R. K., Shi, Y., Michalek, L., Wu, H., Liu, et al
  2026; 4 (8)
- **A monolithic fabrication platform for intrinsically stretchable polymer transistors and complementary circuits.** *Device*
  Yuan, Y., Zhao, C., Ronchini, M., Nishio, Y., Zhong, D., Wu, C., Kweon, H., Sun, Z., Mow, R. K., Shi, Y., Michalek, L., Wu, H., Liu, et al
  2026; 4 (8)
- **Solvent-Mediated Diffusion Enables Directed Functionalization of Polymer Semiconductor Interfaces.** *ACS applied materials & interfaces*
  Schrock, M., Michalek, L., Chen, Q. G., Liu, Q., Mow, R. K., Shi, Y., Bao, Z.
  2026
- **Effects of a Small Fraction of Norbornene Comonomers on the Frontal Ring Opening Metathesis Polymerization of Dicyclopentadiene and Dihydrofuran** *MACROMOLECULES*
  Luo, X., Kim, Y., Jiang, N., Shi, Y., Ko, K., Guo, K., Johnson, J. A., Xia, Y.
  2026
- **Enamine-one vitrimer organogel stretchable electrolytes for sodium-ion transport** *JOURNAL OF MATERIALS CHEMISTRY A*
  Lim, C., Guo, X., Lin, Y., Shi, Y., Wu, R., Bao, Z.
  2026
- **Biofunctionalized polymer semiconductors toward soft and stretchable transistor-based biosensors.** *Science advances*
  Zhao, C., Liu, Q., Chang, J. Y., Patil, A., Michalek, L., Wu, Y., Yuan, Y., Mow, R. K., Shi, Y., Yao, Y., Hsu, K. J., Zheng, Y., Bao, et al
  2026; 12 (23): eaec2641
- **Long-term stability of moisture-capturing hydrogels by preventing metal-mediated degradation.** *Nature communications*
  Díaz-Marín, C. D., Wilson, C. T., Song, W. J., Yan, X. Y., Shi, Y., Li, S., Liu, C., Lin, E., Zhong, Y., Masetti, L., Zhao, X.
  2026; 17 (1)
- **Stabilizing All-Solid-State Li-S Batteries by a Polysulfide-Repelling and Anode-Protecting Self-Segregated Trilayer Polymer Electrolyte.** *Journal of the American Chemical Society*
  Lyu, H., Gao, X., Michalek, L., Chen, T., Yu, W., Lim, C. Y., Florian, J., Mondonico, L., Zhang, W., Sarkar, S., Zhang, P., Shi, Y., Lin, et al
  2026
- **Polyacrylonitrile Flower-Like Particles with Tunable Size and Morphology via Scalable Oxygen-Tolerant Polymerization.** *ACS nano*
  Parkatzidis, K., Patino, D. U., Shi, Y., Hsu, K. J., Weber, I., Wang, H. S., Bao, Z.
  2026

- **A damage-perceptive, self-healing electronic skin with millimeter resolution** *DEVICE*
  Root, S. E., Wu, C., Choi, H., Sun, E., Ngaruka, G., Park, H., Figueroa, A., Berman, A., Patino, D., Shi, Y., Pugh, C., Bao, Z.
  2025; 3 (8)
- **Multi-Generational Frontal Curing and Chemical Recycling of Polydicyclopentadiene Thermosets.** *Advanced materials (Deerfield Beach, Fla.)*
  Luo, X., Kim, Y. M., Lee, M. J., Mejia, E. B., Shi, Y., Sottos, N. R., Baur, J. W., Xia, Y.
  2025: e2505141
- **Shape-memory-assisted self-healing of macroscopic punctures via high-energy-density periodic dynamic polymers with tunable actuation temperature** *MATTER*
  Shi, Y., Cooper, C. B., Nogusa, T., Lai, J., Lyu, H., Khatib, M., Xu, C., Michalek, L., Bao, Z.
  2024; 7 (6)
- **Sequence-dependent self-assembly of supramolecular nanofibers in periodic dynamic block copolymers** *JOURNAL OF MATERIALS CHEMISTRY A*
  Phong, J. K., Cooper, C. B., Michalek, L., Lin, Y., Nishio, Y., Shi, Y., Gong, H., Vigil, J. A., Ilavsky, J., Kuzmenko, I., Bao, Z.
  2023
- **Stretchable, recyclable thermosets via photopolymerization and 3D printing of hemiacetal ester-based resins.** *Chemical science*
  Wu, Y. M., Chyr, G., Park, H., Makar-Limanov, A., Shi, Y., DeSimone, J. M., Bao, Z.
  2023; 14 (44): 12535-12540
- **Stretchable, recyclable thermosets via photopolymerization and 3D printing of hemiacetal ester-based resins** *CHEMICAL SCIENCE*
  Wu, Y., Chyr, G., Park, H., Makar-Limanov, A., Shi, Y., Desimone, J. M., Bao, Z.
  2023
- **Tunable, reusable, and recyclable perfluoropolyether periodic dynamic polymers with high underwater adhesion strength** *MATTER*
  Nogusa, T., Cooper, C. B., Yu, Z., Zheng, Y., Shi, Y., Bao, Z.
  2023; 6 (7): 2439-2453
- **Photoswitchable Binary Nanopore Conductance and Selective Electronic Detection of Single Biomolecules under Wavelength and Voltage Polarity Control** *ACS NANO*
  Hagan, J. T., Gonzalez, A., Shi, Y., Han, G. G. D., Dwyer, J. R.
  2022; 16 (4): 5537-5544
- **Design of phase-transition molecular solar thermal energy storage compounds: compact molecules with high energy densities** *CHEMICAL COMMUNICATIONS*
  Qiu, Q., Gerkman, M. A., Shi, Y., Han, G. G. D.
  2021; 57 (74): 9458-9461
- **Solar energy conversion and storage by photoswitchable organic materials in solution, liquid, solid, and changing phases** *JOURNAL OF MATERIALS CHEMISTRY C*
  Qiu, Q., Shi, Y., Han, G. G. D.
  2021; 9 (35): 11444-11463
- **Sunlight-activated phase change materials for controlled heat storage and triggered release** *JOURNAL OF MATERIALS CHEMISTRY A*
  Shi, Y., Gerkman, M. A., Qiu, Q., Zhang, S., Han, G. G. D.
  2021; 9 (15): 9798-9808
- **Arylazopyrazoles for Long-Term Thermal Energy Storage and Optically Triggered Heat Release below 0 degrees C** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Gerkman, M. A., Gibson, R. S. L., Calbo, J., Shi, Y., Fuchter, M. J., Han, G. G. D.
  2020; 142 (19): 8688-8695