Jingjing Liu

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PERSONAL INFORMATION

- Birthdate: 1991.10 Birthplace: China
- Research area: Organocatalysis. Ring-opening Polymerization. Block Copolymer. Thermoplastic Elastomer.

EDUCATION AND RESEARCH EXPERIENCE

- 2008.09-2012.06 Nanjing Tech University Bachelor Biological Engineering
- 2012.09-2015.06 Nanjing Tech University Master Biological Engineering
- 2016.09-2019.06 Nanjing Tech University Ph.D. Chemical Engineering and Pharmaceutical Engineering
- 2019.10-now King Abdullah University of Science and Technology (KAUST) Postdoctoral fellow

RESEARCH AREA

- Organocatalysis in controlled/living ring-opening polymerizations of cyclic esters
- Lewis acids in promoting/catalysis of organic reactions and ring-opening polymerizations
- Mechanical property, biodegradability, and biocompatibility of block copolymers

PUBLICATIONS (Articles and Patents)

Papers (Partial)

[1] **Jingjing Liu**, Mingchen Jia, Yves Gnanou*, and Xiaoshuang Feng*. Heat-Resistant CO2-Based Polycarbonate Thermoplastics. **Macromolecules,** 2024, 57(11), 5380-5388. (DOI:10.1021/acs.macromol.4c00885)

[2] **Jingjing Liu**, Mingchen Jia, Yves Gnanou*, and Xiaoshuang Feng*. One-Pot Synthesis of CO_2-Based Polylactide-*b*-Poly(ether carbonate)-*b*-Polylactide Triblock Copolymers and Their Mechanical Properties. **Macromolecules**, 2023, 56(4), 1615–1624. (DOI: 10.1021/acs.macromol.2c02522)

[3] Mingchen Jia, **Jingjing Liu**, Yves Gnanou*, and Xiaoshuang Feng*. Triblock Copolymers from CO2, Propylene Oxide, and p-Tosyl Isocyanate of Higher Toughness than Polyethylenes. **Macromolecules**, 2023, 56(10), 3631–3640. (DOI: 10.1021/acs.macromol.3c00190)

[4] **Jingjing Liu**, Yves Gnanou*, and Xiaoshuang Feng*. Expanding the Scope of Boron-Based Ate Complexes by Manipulating Their Reactivity: The Case of Cyclic Esters and Their (Co)Polymers. **Macromolecules**, 2022, 55(5), pp.1800-1810. (DOI: 10.1021/acs.macromol.1c02195)

[5] Jiaxi Xu, Xin Wang, **Jingjing Liu**, Xiaoshuang Feng, Yves Gnanou, and Nikos Hadjichristidis. Ionic H-bonding organocatalysts for the ring-opening polymerization of cyclic esters and cyclic carbonates. **Progress in Polymer Science**, 2022 (125): 101484. (DOI: 10.1016/j.progpolymsci.2021.101484)

[6] Jiaxi Xu, Anmei Xian, Zhenjiang Li, **Jingjing Liu**, Zhihao Zhang, Rui Yan, Luoyu Gao, Bo Liu, Lili Zhao, and Kai Guo*. A Strained Ion Pair Permits Carbon Dioxide Fixation at Atmospheric Pressure by C–H H-Bonding Organocatalysis. **The Journal of Organic Chemistry**, 2021, 86(4), 3422-3432. (DOI: 10.1021/acs.joc.0c02790)

[7] Xin Wang, Jiaxi Xu, Zhenjiang Li, **Jingjing Liu**, Jie Sun, Nikos Hadjichristidis* and Kai Guo*. Non-Metal with Metal Behavior: Metal-Free Coordination -Insertion Ring-Opening Polymerization. **Chemical Science**, 2021, 12, 10732-10741. (DOI: 10.1039/d1sc02551a)

[8] **Jingjing Liu**, Chan Zhang, Zhenjiang Li,* Lei Zhang, Jiaxi Xu, Haixin Wang, Songquan Xu, Tianfo Guo, Kun Yang and Kai Guo*. Dibutyl phosphate catalyzed commercial relevant ring-opening polymerizations to bio-based polyesters[J]. **European Polymer Journal**, 2019, 113: 197-207. (DOI:

10.1016/j.eurpolymj.2019.01.057)

[9] Yu Gao, **Jingjing Liu**, Zhenjiang Li, Tianfo Guo, Songquan Xu, Hui Zhu, Fulan Wei, Siming Chen, Hailemariam Gebru, and Kai Guo*. Dichloroimidazolidinedione-activated beckmann rearrangement of ketoximes for accessing amides and lactams[J]. **The Journal of Organic Chemistry**, 2018, 83(4): 2040-2049. (DOI: 10.1021/acs.joc.7b02983)

[10] Jiaxi Xu, **Jingjing Liu**, Zhenjiang Li,* Songquan Xu, Haixin Wang, Tianfo Guo, Yu Gao, Lei Zhang, Chan Zhang and Kai Guo*. Opposite-charge repulsive cation and anion pair cooperative organocatalysis in ring-opening polymerization[J]. **Polymer Chemistry**, 2018, 9(16): 2183-2192. (DOI: 10.1039/c8py00338f)

[11] Jiaxi Xu, **Jingjing Liu**, Zhenjiang Li, Haixin Wang, Songquan Xu, Tianfo Guo, Hui Zhu, Fulan Wei, Yuejia Zhu, and Kai Guo*. Guanidinium as bifunctional organocatalyst for ring-opening polymerizations[J]. **Polymer**, 2018, 154: 17-26. (DOI: 10.1016/j.polymer.2018.08.074)

[12] Jiaxi Xu, Kun Yang, Zhenjiang Li,* **Jingjing Liu**, Herui Sun, Songquan Xu, Haixin Wang, Tianfo Guo, He Dong and Kai Guo*. Tunable intramolecular h-bonding promotes benzoic acid activity in polymerization: Inspiration from nature[J]. **Polymer Chemistry**, 2017, 8(41): 6398-6406. (DOI: 10.1039/c7py01451a)

[13] **Jingjing Liu**, Jiaxi Xu, Zhenjiang Li,* Songquan Xu, Xin Wang, Haixin Wang, Tianfo Guo, Yu Gao, Lei Zhang and Kai Guo*. Squaramide and amine binary H-bond organocatalysis in polymerizations of cyclic carbonates, lactones, and lactides[J]. **Polymer Chemistry**, 2017, 8(45): 7054-7068. (DOI: 10.1039/c7py01671a)

[14] **Jingjing Liu**, Jiaxi Xu, Zhenjiang Li, * Yu Huang, Haixin Wang, Yu Gao, Tianfo Guo, Pingkai Ouyang, and Kai Guo*. Carbocation organocatalysis in interrupted povarov reactions to cis-fused pyrano- and furanobenzodihydropyrans[J]. **European Journal of Organic Chemistry**, 2017, (27): 3996-4003. (DOI: 10.1002/ejoc.201700634)

[15] **Jingjing Liu**, Cheng Chen, Zhenjiang Li, Wenzhuo Wu, Xu Zhi, Qiguo Zhang, Hao Wu, Xin Wang, Saide Cui and Kai Guo. A squaramide and tertiary amine: An excellent hydrogen-bonding pair organocatalyst for living polymerization[J]. **Polymer Chemistry**, 2015, 6(20): 3754-3757. (DOI: 10.1039/c5py00508f)

Patents (Partial)

[1] Xiaoshuang Feng; **Jingjing Liu**; Yves Gnanou. Amine-borane adducts in the synthesis of polyester and its copolymers using cyclic esters and compositions thereof. (WO2023152730A1)

[2] Xiaoshuang Feng; **Jingjing Liu**; Yves Gnanou. Improve properties of CO2-based polycarbonates through sequential copolymerization of epoxides with CO2 and anhydrides to form poly(ester-*b*-carbonate-*b*-ester) ABA triblock copolymers. (Application Number: United States 63/525,025)

[3] Kai Guo, **Jingjing Liu**, Zhenjiang Li, Jiaxi Xu, Tianfo Guo, Yu Gao, Lei Zhang, Zhiwei Yao, Chan Zhang. A method for preparing polyesters. China Patent (Authorized patent No. ZL201910091257.5).

[4] Kai Guo, **Jingjing Liu**, Zhenjiang Li, Jiaxi Xu, Tianfo Guo, Pingkai Ouyang. A method for preparing amides. China Patent (Authorized patent No. ZL201610942029.0).

[5] Kai Guo, **Jingjing Liu**, Zhenjiang Li, Jiaxi Xu, Tianfo Guo, Kai Zhang, Pingkai Ouyang. A method for preparing caprolactam. China Patent (Authorized patent No. ZL201610941829.0).

[6] Zhenjiang Li, **Jingjing Liu**, Wenzhuo Wu, Saide Cui, Jiaxi Xu, Cheng Chen, Xu Zhi. A method for preparing polyesters. China Patent (Authorized patent No. ZL201510015207.0)