



# Hailei Zhang

Ph.D

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## WORK

|  |                       |
|--|-----------------------|
| <b>Visiting Scientist</b> _____                                      | <b>2021 – present</b> |
| Department of Organic and Macromolecular Chemistry, Ghent University | New Brunswick, U.S.   |
| <b>Associated professor (permanent position)</b> _____               | <b>2020 – present</b> |
| College of Chemistry and Environmental Science, Hebei University     | Baoding, P.R. China   |
| <b>Lecturer</b> _____  | <b>2017 – 2020</b>    |
| College of Chemistry and Environmental Science, Hebei University     | Baoding, P.R. China   |

## EDUCATION

|   |                     |
|---|---------------------|
| <b>Ph.D</b> ___ <b>Macromolecular Chemistry and Physics</b> _____ | <b>2013 – 2017</b>  |
| Hebei University  | Baoding, P.R. China |
| <b>Master</b> ___ <b>Pharmaceutical Analysis</b> _____            | <b>2010 – 2013</b>  |
| Hebei University  | Baoding, P.R. China |
| <b>Bachelor</b> ___ <b>Pharmacy</b> _____                         | <b>2006 – 2010</b>  |
| Hebei University  | Baoding, P.R. China |

## FUNDING

- Development of afterglow-induced hydrogel based on X-ray-activated long persistent phosphor materials (No. 22102045), National Natural Science Foundation of China, 2022-2024.
- Development of H<sub>2</sub>O<sub>2</sub>-responsive halloysite-based nanocapsules (No. B2019201138), Natural Science Foundation of Hebei Province, 2019-2021.
- H<sub>2</sub>O<sub>2</sub>-responsive halloysite-based hydrogels (No. QN2018052), Foundation of Hebei Education Department, 2018-2020.

## RESEARCH DIRECTION

- Stimuli-responsive materials
- Surface modification of nanoclays

## PUBLICATIONS

- [1] Bo Zhang, Shanshan Li, Yuan Wang, Yonggang Wu, **Hailei Zhang\***. Halloysite nanotube-based self-healing fluorescence hydrogels in fabricating 3D cube containing UV-sensitive QR code information. *Journal of Colloid and Interface Science*, 2022, 617, 353-362.
- [2] Yelong Lu, Hongchi Zhao\*, Xinrong Huang, Di Hu, Yonggang Wu, Xinwu Ba, **Hailei Zhang\***. Exploring maleimide-anchored halloysites as nanophotoinitiators for surface-initiated photografting strategies. *Chemical Communications*, 2022, 58: 13636–13639.
- [3] Jianceng Shi, **Hailei Zhang\***, Bo Zhang, Yu Wang, Libin Bai, Yonggang Wu, Xinwu Ba\*.

- Halloysite nanotube-based nest-like composite microspheres with enhanced microwave absorption ability. *Composites Science and Technology*, 2022, 230: 109760.
- [4] Xumin Ren, **Hailei Zhang\***, Bo Zhang, Hongchi Zhao, Yonggang Wu, Xinwu Ba\*. Halloysite/phenol-formaldehyde nanocomposites with enhanced mechanical properties and lowered fire hazard. *Applied Clay Science* 2023, 231: 106743.
- [5] Haiyun Fan, Pengying Jia, **Hailei Zhang\***, Zhiyi Su, Xinwu Ba, Yonggang Wu\*. Pyrene-functionalized halloysite nanotubes for simultaneously detecting and separating Hg(II) in aqueous media: A comprehensive comparison on interparticle and intraparticle excimers. *Nanotechnology Reviews*, 2022, 11(1): 2038-2049.
- [6] Weihua Song, Jipeng You, Yuangong Zhang, Qi Yang, Jin Jiao, **Hailei Zhang\***. Recent Studies on Hydrogels Based on H<sub>2</sub>O<sub>2</sub>-Responsive Moieties: Mechanism, Preparation and Application. *Gels*, 2022, 8(6): 361.
- [7] Qiang Zhao, Hanxi Jiang, Boyan Tang, Yonggang Wu, Xinwu Ba, **Hailei Zhang\***. Chemosensor-Anchored Halloysite Nanotubes for Detection and Removal of Hypochlorite in Water. *ACS Applied Nano Materials* 2021, 4, 7, 7435–7442.
- [8] Boyan Tang, **Hailei Zhang\***, Cong Cheng, Hanxi Jiang, Libin Bai, Xinwu Ba, Yonggang Wu\*. Development of halloysite nanotube-based hydrogel with colorimetric H<sub>2</sub>O<sub>2</sub>-responsive character. *Applied Clay Science* 2021, 212: 106230.
- [9] Yan Gao, Haisong Zhang\*, Yanbo Zuo, Weihua Song, Libin Bai, **Hailei Zhang\***, Hongjie Wang, Yonggang Wu, Xinwu Ba\*. Preparation of allylamine-grafted cellulose by Ce(IV): a desirable candidate of oral phosphate binders. *Polymer Bulletin*, 2021, 78: 2537-2552.
- [10] Zhiyi Su, **Hailei Zhang\***, Yan Gao, Li Huo, Yonggang Wu, Xinwu Ba\*. Coumarin-anchored halloysite nanotubes for highly selective detection and removal of Zn(II). *Chemical Engineering Journal*, 2020, 393: 124695.
- [11] Cong Cheng, Yan Gao\*, Weihua Song, Qiang Zhao, Haisong Zhang, **Hailei Zhang\***. Halloysite Nanotube-Based H<sub>2</sub>O<sub>2</sub>-Responsive Drug Delivery System with a Turn on Effect on Fluorescence for Real-Time Monitoring. *Chemical Engineering Journal*, 2020, 380: 122474.
- [12] Cong Cheng, Weihua Song\*, Qiang Zhao, **Hailei Zhang\***. Halloysite Nanotubes in Polymer Science: Purification, Characterization, Modification and Applications. *Nanotechnology Reviews*, 2020, 9: 323–344.
- [13] Yanfang Ma, Zhihang Zhao, Boyan Tang, Yonggang Wu, **Hailei Zhang\***. Facile preparation of polymer-grafted halloysite nanotubes via a redox system: a novel approach to construct antibacterial hydrogel. *Macromolecular Research*, 2020, 28(10): 948-952.
- [14] Feng Liu, Yuangong Zhang\*, Xiaohui Hao, Qian Zhou, Ying Zheng, Libin Bai, **Hailei Zhang\***. Facile One-Pot Synthesis of Hyperbranched Glycopolymers in Aqueous Solution via a Hydroxy/Cu(III) Redox Process. *Polymers*, 2020, 12(9): 2065.
- [15] Yuangong Zhang; Libin Bai\*, Cong Cheng; Qian Zhou; Zhou Zhang; Yonggang Wu, **Hailei Zhang\***. A Novel Surface Modification Method upon Halloysite Nanotubes: A Desirable Cross-Linking Agent to Construct Hydrogels. *Applied Clay Science*, 2019, 182(1): 105259.
- [16] **Hailei Zhang**, Cong Cheng, Hongzan Song, Libin Bai, Yongqiang Cheng\*, Xinwu Ba\*, Yonggang Wu\*. A Facile One-Step Grafting of Polyphosphonium onto Halloysite Nanotubes Initiated by Ce(IV). *Chemical Communications*, 2019, 55: 1040-1043.
- [17] Xiaojie Ren, **Hailei Zhang\***, Meining Song, Cong Cheng, Hongchi Zhao\*, Yonggang Wu\*. One-Step Route to Ladder-Type C-N Linked Conjugated Polymers. *Macromolecular Chemistry and Physics*, 2019, 9: 1900044.

- [18] Feng Liu, Yonggang Wu,\* Libin Bai, Xixi Peng, **Hailei Zhang**,\* Yuangong Zhang, Puying An, Sujuan Wang, Gang Ma, Xinwu Ba\*. Facile Preparation of Hyperbranched Glycopolymer via AB<sub>3</sub>\* Inimer Promoted by a Hydroxy/Cerium (IV) Redox Process. *Polymer Chemistry*, 2018, 9: 5024-5031.
- [19] Chaoying Hu, Weiping Chen, Haicui Yao, Xiaojie Ren, **Hailei Zhang**\*, Hongchi Zhao\*, Yonggang Wu\*, Xinwu Ba. Facile Synthesis of Ladder-Type Polyacenes with Perylene-Fused-Pyrene Structures. *Macromolecular Chemistry and Physics*, 2018, 219: 1800201.
- [20] Xuejing Liu, Yuangong Zhang, Haijing Hao, Wanju Zhang, Libin Bai,\* Yonggang Wu, Hongchi Zhao, **Hailei Zhang**,\* Xinwu Ba. Facile Construction of a Hyperbranched Poly(acrylamide) Bearing Tetraphenylethene Units: A Novel Fluorescence Probe with a Highly Selective and Sensitive Response to Zn<sup>2+</sup>, *RSC Advances*, 2018, 8: 5776-5783.
- [21] Feng Liu, **Hailei Zhang**,\* Jingwei Dong, Yonggang Wu,\* Weiwei Li.\* Highly Efficient Synthesis of Ladder-Type Small Molecular and Polymer based on BN-Heteroacene. *Asian Journal of Organic Chemistry*, 2018, 7: 465-470;
- [22] Xinying Qin, Chao Wang, Meining Song, **Hailei Zhang**\*, Yonggang Wu\*. Facile Grafting of Ionic Liquids onto Halloysite Nanotubes via An Atom Transfer Radical Polymerization Method. *Journal of Polymer Materials*, 2018, 35: 159-169.
- [23] Feng Liu, Libin Bai, **Hailei Zhang**,\* Hongzan Song, Liandong Hu, Yonggang Wu,\* Xinwu Ba. Smart H<sub>2</sub>O<sub>2</sub>-Responsive Drug Delivery System Made by Halloysite Nanotubes and Carbohydrate Polymers. *ACS Applied Materials & Interfaces*, 2017, 9: 31626-31633.
- [24] Jingwei Dong, Zhihang Zhao, Rui Liu, **Hailei Zhang**,\* Yonggang Wu, Xinwu Ba\*. Investigation of a Halloysite-Based Fluorescence Probe with a Highly Selective and Sensitive “Turn-On” Response upon Hydrogen Peroxide. *RSC Advances*, 2017, 7: 55034-55043.
- [25] **Hailei Zhang**\*. Selective Modification of Inner Surface of Halloysite Nanotubes: A Review. *Nanotechnology Reviews*, 2017, 6: 573-581.
- [26] **Hailei Zhang**, Tianfei Ren, Yunjing Ji, Lingui Han, Yonggang Wu\*, Hongzan Song\*, Libin Bai, Xinwu Ba. Selective Modification of Halloysite Nanotubes with 1-Pyrenylboronic Acid: A Novel Fluorescence Probe with Highly Selective and Sensitive Response to Hyperoxide. *ACS Applied Materials & Interfaces*, 2015, 7: 23805–23811.
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- [29] **Hailei Zhang**, Xiaozhong Hong, Xinwu Ba\*, Bei Yu, Xin Wen, Sujuan Wang, Xuefei Wang, Lei Liu, Jinchong Xiao\*. Synthesis, Physical Properties, and Photocurrent Behavior of Strongly Emissive Boron-Chelate Heterochrysene Derivatives, *Asian Journal of Organic Chemistry*, 2014, 3: 1121–1216.