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简介：曹新华，男，1980年4月生，博士，教授，硕士生导师，河南省教育厅学术技术带头人，河南省高校科技创新人才，河南省高等学校优秀共产党员，河南省高等学校青年骨干教师，河南省优秀硕士学位论文指导教师，信阳市优秀青年科技专家，入选南湖学者奖励计划A类人才。

个人经历

教育经历：

1999.9-2003.6 学士 河南师范大学 化学与环境科学学院 化学
2003.9-2006.6 硕士 福建师范大学 化学与材料科学学院 物理化学 导师：郑瑛教授
2008.9-2011.6 博士 复旦大学 化学系 无机化学 导师：易涛教授

工作简历：

2006.6-2008.3 上海睿智化学研究有限公司 职员
2012.4-2014.10 信阳师范学院化学化工学院 讲师
2014.11-2020.12 信阳师范学院化学化工学院 副教授
2020.12-至今 信阳师范学院化学化工学院 教授

研究领域与兴趣

1. 功能超分子自组装材料研究
2. 多金属氧酸盐的合成及生物领域应用研究

主讲课程

本科生：《有机合成化学》、《天然产物化学》、《有机化学实验》

研究生：《有机结构分析》、《化学前沿》等

主持科研项目

1. 高等学校重点科研项目基础研究计划，金属配位诱导的超分子手性自组装体系可控构筑及其手性分子检测研究（22ZX002）30万，2022.01-2024.12，在研；
2. 国家自然科学基金-联合基金 新型光控智能超分子自组装材料构建及表面润湿性能的调控研究（U1704164）50万，2018.01-2020.12，已结项；

3. 国家自然科学基金青年基金新型功能铈配合物凝胶体系的构建及其对重金属离子的高灵敏检测和富集 (21401159) 25 万, 2015.01-2017.12, 已结项;
4. 河南省高校科技创新人才支持计划 (17HASTIT005) 30 万, 2017.01-2019.12 结项;
5. 河南省教育厅青年骨干教师资助项目 (2015GGJS-141), 基于超分子自组装体系准固态太阳能电池光电性能研究 2.0 万, 2016.01-2017.12, 已结项.

代表性研究成果

期刊论文:

1. Lulu Liu, Jun Jiang, Limin Cui, Junwei Zhao,* **Xinhua Cao**,* and Lijuan Chen,* Double Trigonal Pyramidal {SeO₃} Groups Bridged 2 - Picolinic Acid Modified Cerium-Inlaid Polyoxometalate Including Mixed Selenotungstate Subunits for Electrochemically Sensing Ochratoxin A, *Inorg. Chem.*, 2022, 61, 1949-1960.
2. **Xinhua Cao**, Aiping Gao, Ji-ting Hou, Tao Yi*, Fluorescent supramolecular self-assembly gels and their application as sensors: A review, *Coord. Chem. Rev.*, 2021, 434, 213792. Jiangbo Guo, Yajuan Li,* Yajun Zhang, Jujie Ren, Xudong Yu,* and **Xinhua Cao***, Switchable Supramolecular Configurations of Al³⁺/LysTPY Coordination Polymers in a Hydrogel Network Controlled by Ultrasound and Heat, *ACS Appl. Mater. Interfaces*, 2021, 13, 40079-40087.
3. **Xinhua Cao***, Yiran Li, Qingqing Han, Aiping Gao, Bingya Wang, Xueping Chang and Ji-ting Hou*, Design of large pi-conjugated a-cyanostilbene derivatives as colorimetric sensors for volatile acids and organic amine gases, *J. Mater. Chem. C*, **2020**, 8, 4058-4064.
4. Ji-Ting Hou, Bingya Wang, Yuxia Zou, Peiwen Fan, Xueping Chang, **Xinhua Cao***, Shan Wang*, and Fabiao Yu*, Molecular fluorescent probes for imaging and evaluation of hypochlorite fluctuations during diagnosis and therapy of osteoarthritis in cells and in a mouse model, *ACS Sens.*, 2020, 5, 1949-1958.
5. **Xinhua Cao***, Yiran Li, Xiaoyuan Zhang, Aiping Gao, Ruixiang Xu, Yongsheng Yu, Xiaohan Hei, Surface wettability and emission behavior tuned via solvent in a supramolecular self-assembly system based on a naphthalene diimides derivative, *Appl. Surf. Sci.*, **2020**, 501 144256.
6. **Xinhua Cao***, Yiran Li, Yicheng Yu, Shiyong Fu, Aiping Gao and Xueping Chang*, Multifunctional supramolecular self-assembly system for colorimetric detection of Hg²⁺, Fe³⁺, Cu²⁺ and continuous sensing of volatile acids and organic amine gases, *Nanoscale*, **2019**, 11, 10911-10920.
7. **Xinhua Cao***, Yiran Li, Aiping Gao, Yongsheng Yu, Qiuju Zhou, Xueping Chang*, Xiaohan Hei, Multifunctional fluorescent naphthalimide self-assembly system for detection Cu²⁺, K⁺ and continuously sensing organic amines and gaseous acids. *J. Mater. Chem. C*, **2019**, 7, 10589-10597.
8. **Xinhua Cao***, Qianqian Ding, Yiran Li, Aiping Gao and Xueping Chang , Continuous multi-channel sensing of volatile acid and organic amine gases using a fluorescent self-assembly system. *J. Mater. Chem. C*, **2019**, 7, 133-142.
9. **Xinhua Cao***, Yiran Li, Aiping Gao, Yongsheng Yu, Xueping Chang, and Xiaohan Hei,

- Sensing organic amines and quantitative monitoring of intracellular pH change using a fluorescent self-assembly system, *ACS Appl. Polym. Mater.*, 2019, 1, 1485-1495.
10. **Xinhua Cao***, Na Zhao, Aiping Gao, qianqian Ding, Yiran Li, and Xueping Chang*. Terminal molecular isomer-effect on supramolecular self-assembly system based on naphthalimide derivative and its sensing application for mercury(II) and iron (III) ions. *Langmuir*, **2018**, 34, 7404-7415.
 11. **Xinhua Cao***, Na Zhao, Haiting Lv, Aiping Gao, Aiping Shi, Yongquan Wu*, 4-Nitrobenzene thiourea self-assembly system and its transformation upon addition of Hg²⁺ ion: applications as sensor to fluoride ion. *Sensors and Actuators B*, **2018**, 266, 637-644.
 12. **Xinhua Cao***, Qianqian Ding, Na Zhao, Aiping Gao, Qiangshang Jing*, Supramolecular self-assembly system based on naphthalimide boric acid ester derivative for detection, *Sensors Actuat. B-Chem.*, **2017**, 256, 711-720.
 13. **Xinhua Cao***, Na Zhao, Haiting Lv, Qianqian Ding, Aiping Gao, Qiangshan Jing, and Tao Yi*, Strong blue emissive supramolecular self-assembly system based on naphthalimide derivatives and its ability of detection and removal of 2,4,6-trinitrophenol. *Langmuir*, **2017**, 33, 7788-7798.
 14. **Xinhua Cao***, Na Zhao, Guodong Zou, Aiping Gao, Qianqian Ding, Guanjie Zeng and Yongquan Wu*, A dual response organogel system based on an iridium complex and a Eu(III) hybrid for volatile acid and organic amine vapors. *Soft Matter*, **2017**, 13, 3802-3811.
 15. **Xinhua Cao***, Qianqian Ding, Aiping Gao, Haiting Lv, Aiping Gao, Dan Liu, Regulation gel formation, hierarchical structures and surface wettability via isomeride effect in supramolecular organogel system, *J Colloid Interf. Sci.*, **2017**, 494, 170-177.
 16. **Xinhua Cao***, Na Zhao, Aiping Gao, Haiting Lv, Yuling Jia, Renmiao Wu, Yongquan Wu*, Bis-naphthalimides self-assembly organogel formation and application in detection of p-phenylenediamine, *Materials Science and Engineering C*, **2017**, 70, 216-222.
 17. **Xinhua Cao***, Na Zhao, RuoHan Li, HaiTing Lv, Zongwen Zhang, Aiping Gao, Tao Yi*. Steric-structure-dependent gel formation, hierarchical structures, rheological behavior, and surface wettability. *Chem. Asian J.* **2016**, 11, 3196-3204.
 18. **Xinhua Cao***, Aiping Gao, Na Zhao, Fangyuan Yuan, Chenxi Liu, Ruru Li, Surfaces wettability and morphology modulation in a fluorene-derivative self-assembly system, *Appl. Surf. Sci.*, 2016, 368, 97-103.
 19. **X.H. Cao**, Haichuang Lan, Zhenhua Li, Yueyuan Mao, Liming Chen, Yongquan Wu, Tao Yi*. White light emission from a two-component hybrid gel via an energy transfer process. *Phys. Chem. Chem. Phys.*, **2015**, 17, 32297- 32303.
 20. **Xinhua Cao**, Xue Liu, Liming Chen, Yueyuan Mao, Haichuang Lan, Tao Yi*. Photoisomerization-induced morphology and transparency transition in an azobenzene based two-component organogel system. *J Colloid Interf. Sci.*, **2015**, 458, 187-193.
 21. **Xinhua Cao**, Luyan Meng, Zhenhua Li, Yueyuan Mao, Haichuang Lan, Liming Chen, Yang Fan, and Tao Yi*. Large red-shifted fluorescent emission via intermolecular π - π stacking in 4-ethynyl-1,8-naphthalimide-based supramolecular assemblies. *Langmuir* **2014**, 30,

11753-11760.

22. **Xinhua Cao**, Yongquan Wu, keyin Liu, Xudong Yu, Bo Wu, Huazhou Wu, Zhuguang Gong, Tao Yi*. Iridium complex triggered white-light-emitting gel and its response to cysteine. *J. Mater. Chem.*, **2012**, 22, 2650-2657.
23. **Xinhua Cao**, Jing Zhou, Ying Zou, Mingming Zhang, Xudong Yu, Song Zhang, Tao Yi*. Huang Chunhui, Fluorescence and morphology modulation in a photochromic diarylethene self-assembly system. *Langmuir*, 2011, 27, 5090-5097.

专利著作:

1. **曹新华**, 黑笑涵, 高爱萍, 邹国栋, 于永生, 一种偶氮苯基硫脲衍生物的有机凝胶化合物及制备方法、有机凝胶及应用(专利号: ZL201811640806.1)。
2. **曹新华**, 高爱萍, 樊阳, 高彦伟, 黑笑涵, 一种萘酰亚胺的有机凝胶化合物及其制备方法、凝胶及应用(专利号: ZL201610716172.8)。
3. **曹新华**, 高爱萍, 黑笑涵, 高彦伟, 赵娜, 一种4-硝基苯硫脲的有机凝胶化合物及其制备方法、凝胶及应用(专利号: ZL201710109689.5)。
4. **曹新华**, 宋力, 归凤铁, 高爱萍, 陈超, 一种基于萘酰亚胺的有机荧光凝胶化合物及其制备方法与应用(专利号: ZL201410095004.2)。
5. **曹新华**, 高爱萍, 黑笑涵, 邹国栋, 丁倩倩, 一种对二甲氨基肉桂酸衍生物的有机凝胶化合物及制备方法、有机凝胶及应用(专利号: ZL201811107186.5)

奖励及荣誉

河南省教育厅学术技术带头人、河南省高等学校优秀共产党员、河南省优秀硕士学位论文指导教师、河南省高等学校青年骨干教师、信阳市优秀青年科技专家、信阳师范学院十佳优秀研究生导师、入选南湖学者奖励计划A类人才。近年来已在 *Journal of Chemistry Materials C*、*ACS Appl. Mater. Interfaces*、*Nanoscale* 等国际知名分析化学期刊杂志上发表学术论文 40 余篇。任期刊 *Chineses Chemical letters* 青年编委。

个人主页