

## 中国分析测试协会分析测试科学奖公示

项目名称：高精度生物传感和低背景生物成像新方法构建及应用研究

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### 代表性论文专著目录（限 10 篇）

1. Jinlian Hu, Qin Xiang, Xiaoqi Tian, Lei Ye, Yanpei Wang, Yong Ni, Xing Chen, Yuxia Liu, Guang Chen, and Zhe Sun, S-Shaped Helical Singlet Diradicaloid and Its Transformation to Circumchrysene via a Two-Stage Cyclization, *J. Am. Chem. Soc.* 2024, 146, 10321–10330.
2. Yuanchao Zhang, Xinrui Ji, Ping Han, Yuxia Liu, Pu Chen, and Guang Chen, Microenvironment-differential Imaging of Demethylated Metabolites of Methionine for Identifying Ferroptosis Regional Preferences with Path-independent Equifinal Fluorescence Probes, *Angew. Chem. Int. Ed.* 2024, 63: e202400459.
3. Ao Jiang, Yuxia Liu, Guang Chen, Yong Li and Bo Tang, The cross-talk modulation of excited state electron transfer to reduce the false negative background for high fidelity imaging in vivo, *Chem. Sci.* 2020, 11: 1964.
4. Jie Liang, Jun Li, Hongliang Dong, Zixiaozi Li, Xun He, Yan Wang, Yongchao Yao, Yuchun Ren, Shengjun Sun, Yongsong Luo, Dongdong Zheng, Jiong Li, Qian Liu, Fengming Luo, Tongwei Wu, Guang Chen, Xuping Sun, Bo Tang, Aqueous alternating electrolysis prolongs electrode lifespans under harsh operation conditions, *Nat. Commun.* 2024, 15: 6208.
5. Yuanyuan Cheng, Rong-Mei Kong, Wenao Hu, Xiaoxia Tian, Lingdong Zhang, Lian Xia, Fengli Qu, Colorimetric-assisted photoelectrochemical sensing for dual-model detection of sialic acid via oxidation-power mediator integration, *Chin. Chem. Lett.* 2023, 34: 107502.
6. Mengyu Sun, Maosheng Liang, Rongmei Kong, Lan Guo, Lian Xia, and Fengli Qu, FRET-Based Dual-Color Carbon Dot Ratiometric

Fluorescent Sensor Enables the Smartphone-Integrated Device for Noninvasive and Portable Diagnosis of Chronic Kidney Disease, *Anal. Chem.*, 2024, 96: 17907–17913.

7. Lan Guo, Ya-Jie Zhang, Yong-Liang Yu, and Jian-Hua Wang, In Situ Generation of Prussian Blue by MIL-53 (Fe) for Point-of-Care Testing of Butyrylcholinesterase Activity Using a Portable HighThroughput Photothermal Device, *Anal. Chem.* 2020, 92, 14806–14813.

8. Maosheng Liang, Yifan Gao, Xiaoling Sun, Rong-Mei Kong, Lian Xia, Fengli Qu, Metal-organic framework-based ratiometric point-of-care testing for quantitative visual detection of nitrite, *J. Hazard. Mater.* 2024, 469: 134021.

9. Lan Guo, Dong-Mei Zhao, Shuai Chen, Yong-Liang Yu, and Jian-Hua Wang, Smartphone-Integrated Photoacoustic Analytical Device for Pointof-Care Testing of Food Contaminant Azodicarbonamide, *Anal. Chem.*, 2022, 94: 14004–14011.

10. Lan Guo, Xiao Zhang, Dong-Mei Zhao, Shuai Chen, Wen-Xin Zhang, Yong-Liang Yu, and Jian-Hua Wang, Portable Photoacoustic Analytical System Combined with Wearable Hydrogel Patch for pH Monitoring in Chronic Wounds, *Anal. Chem.* 2024, 96, 11595–11602.

### 代表性专利

1. MPBA@Au-MOF 复合材料光电化学传感器的制备方法及应用, ZL 2021 1 1209002.8, 国家发明专利, 2023-07-28, (夏莲, 程圆圆、田晓霞 张玲东)

2. 采用 RhB@MOF-5 复合材料测定小鼠脑脊液中 AA 含量的方法, ZL 2018 1 1088821. X, 国家发明专利, 2021-05-04, (夏莲, 郭兰、窦娅楠)

3. 采用 N-P-4-HN@UiO-66-NH<sub>2</sub> 复合材料测定 HCHO 含量的方法, ZL 2019 1 1153318.2, 国家发明专利, 2022-05-10, (夏莲、王秀丽、王昊、田晓霞、程圆圆 )