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研究团队：合肥大学先进电池关键材料与技术重点实验室

主要研究方向：

（1） 废旧锂离子电池回收与利用

（2） 锂离子电池正极材料

个人简介：

2024 年 6 月毕业于中国科学技术大学材料物理与化学专业，2024 年 8 月入职合肥大学能源材料与化工学院，博士，讲师。目前在 Advanced Materials、Advanced Energy Materials、Energy Storage Materials 等知名学术期刊发表 SCI 收录论文 20 余篇。

代表科研成果：

1. **Zhenzhen Liu**, Miaomiao Han*, Shengbo Zhang, Huaimeng Li, Xi Wu, Zhen Fu, Haimin Zhang, Guozhong Wang, Yunxia Zhang*. Hybrid Surface Modification and Bulk Doping enable Spent $LiCoO_2$ Cathodes for High-voltage Operation, ***Advanced Materials***, 2024, *36*, 2404188.

2. **Zhenzhen Liu**, Huaimeng Li, Miaomiao Han*, Liang Fang, Zhen Fu, Haimin Zhang, Guozhong Wang, Yunxia Zhang*. Upcycling of degraded $LiCoO_2$ cathodes into high-performance lithium-ion batteries via a three-in-one strategy, ***Advanced Energy Materials***, 2023, *13*, 2302058.

3. **Zhenzhen Liu**, Zongkun Bian, Heng Zhang, Xi Wu, Zhen Fu, Haimin Zhang, Guozhong Wang , Yunxia Zhang*, Huijun Zhao*. Direct regeneration of highly degraded $LiNi_{0.6}Co_{0.2}Mn_{0.2}O_2$ to high-performance single-crystalline cathodes, ***Energy Storage Materials***, 2025, *78*, 104240.

4. **Zhenzhen Liu**, Haibo Li*. Exploration of the exceptional capacitive deionization performance of $CoMn_2O_4$ microspheres electrode, ***Energy & Environmental Materials***, 2023, *6*, e12255.

5. **Zhenzhen Liu,** Zhishuai Yue, Haibo Li*. $Na_{0.71}CoO_2$ promoted sodium uptake via faradaic reaction for highly efficient capacitive deionization, ***Separation and Purification Technology***, 2020, *234*, 116090.

6. **Zhenzhen Liu**, Wei. Ma, Haibo Li*. Elucidating the capacitive desalination behavior of Na_xCoO_2: the significance of electrochemical pre-activation, ***Nanoscale***, 2020, *12*, 7586-7894 (Back Cover Paper).

7. **Zhenzhen Liu,** Chao Zhang, Mengxiang Ye, Huaimeng Li, Zhen Fu, Haimin Zhang, Guozhong Wang, Yunxia Zhang***,** Closed-loop regeneration of a spent $LiFePO_4$ cathode by integrating oxidative leaching and electrochemical relithiation, ***ACS Applied Energy Materials***, 2022, *5*, 14323-14334.

8. **Zhenzhen Liu**, Wen Xi, Haibo Li*. The feasibility of hollow echinus-like $NiCo_2O_4$ nanocrystals for hybrid capacitive deionization, ***Environmental Science: Water Research & Technology***, 2020, *6*, 283-289.

9. **Zhenzhen Liu**, Xu Shang, Yong Liu, Haibo Li*. A Brief Review on High-Performance Capacitive Deionization Enabled by Intercalation Electrodes, ***Global Challenges***, 2021, *5*, 2000054.

科研项目：

[1] 2024 年合肥大学人才科研基金项目：退役钴酸锂电池的短程回收利用研究，主持，2024.12-2027.12。