

## 导师简介

姓名：刘帮军

职称：教授/博士

招生专业：地质资源与地质工程、地质工程

研究方向：“深时”古气候与古环境；煤系矿产资源及其环境效应

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### 一、个人简介

刘帮军，男，四川绵阳人，博士，教授（校聘），硕士生导师，德国法兰克福大学自然科学（地球科学方向）博士（Dr. rer. nat im Fach Geowissenschaften），德国图宾根大学访问学者（2024.12-2025.11）。河北省燕赵英才（A类），河北省“巨人计划”创新团队成员，河北省高等学校青年拔尖人才，河北工程大学“青蓝学者”和优秀青年教师。

**学术兼职：**International Journal of Coal Science & Technology、China Geology、Geosciences 和《煤炭科学技术》青年编委；国际有机岩石学会（TSOP）联络委员会委员；欧洲有机地球化学家协会、欧美同学会、中国地质学会和中国煤炭学会会员。Global and Planetary Change、Chemical Geology、Marine and Petroleum Geology 和 Fuel 等国际著名期刊审稿人。

### 二、主要研究领域和方向

研究领域为有机地球化学和同位素地球化学，研究方向如下：

- 1、含煤盆地古环境和古气候变化与碳循环；
- 2、前第四纪古野火生态系统与生物多样性、古环境和古气候协同演化；
- 3、含煤岩系生物标志化合物形成和演化规律及稳定同位素的地质意义；
- 4、煤系战略性关键金属元素有机-无机富集机理；
- 5、水-土系统污染物多界面迁移转化与行为机理及其生态修复与治理（生态环境部华南环境科学研究所联合培养）。

### 三、主要科研项目

- 1、国家自然科学基金：云南中新世-上新世浅色褐煤的形成机制及其古环境意义，主持，2022-2024；
- 2、科技部政府间双边交流项目，中国和塞尔维亚中新世褐煤形成条件及应用潜力—综合地质与地球化学研究，主持，2023-2025；
- 3、河北省引进留学人员资助项目：能源石化行业 PAHs 排放的单体同位素源解析，主持，2022-2024；

4、河北省高等学校科学研究项目-青年拔尖人才项目：煤中生物标志化合物的地质与环境意义，主持，2023-2025；

5、河北省自然科学基金：岩浆接触变质带不同煤级煤中碳同位素组成及其分馏机理，主持，2021-2023；

#### 四、代表性论文：

1. Yun Xu, Yan Meng, Achim Bechtel, Qiaojing Zhao, Dieter Uhl, Cunliang Zhao, Yuzhuang Sun, Dawei Lv, **Bangjun Liu\***. Palaeoenvironmental and palaeoclimatic changes during the Cretaceous (early Albian) Oceanic Anoxic Event 1b: A record from coal from northeast China. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 2025, 676, 113181.
2. Cunliang Zhao, Xu Guo, Achim Bechtel, Lin Xiao, Jianguo Yao, Qiaojing Zhao, Wenmu Guo, Balaji Panchal, Shiming Liu, **Bangjun Liu\***. Tectonic-driven thermal alteration of organic matter in the Permian high-rank coals in the southern North China Basin, *Fuel*, 2025, 290, 134715.
3. Balaji Panchal, Yuzhuang Sun, Chia Huang Su, **Bangjun Liu\***, Qiaojing Zhao, Cunliang Zhao\*, Kai Bian, Jinxi Wang\*. Reusable CFA<sub>250</sub>-PA-SO<sub>3</sub>H Catalyst Derived from Coal ash a Potential Method for Fuel Synthesis, *Surfaces and Interfaces*, 2025, 58, 105717. 三区
4. **Bangjun Liu\***, Achim Bechtel, Ksenija Stojanović, James C. Hower, Cunliang Zhao, Xu Guo. Organic petrography, biomarkers, and stable isotope ( $\delta^{13}\text{C}$ ,  $\delta\text{D}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{18}\text{O}$ ) compositions of liptinite-rich coals. *International Journal of Coal Geology*, 2024, **290**, 104561.
5. Jingzhi Li, Xu Guo, Balaji Panchal, Jinxi Wang, Wenmu Guo, **Bangjun Liu\***, Yue Yuan, Shiming Liu\*. Quantitative analysis of molecular structure characterization of different liptinite-rich coals using FTIR spectroscopy. *Infrared Physics and Technology*, 2024, **141**, 105458.
6. Balaji Panchal, Yuzhuang Sun, Cunliang Zhao\*, Jinxi Wang, Kai Bian, Qiaojing Zhao, **Bangjun Liu\***. Waste to value addition: Utilization of waste corn cob from corn plant derived novel green acidic catalyst for effective synthesis of esters. *Energy Reports*, 2024, **11**, 4277-4289. 三区
7. Cunliang Zhao, Ke Zhang, Lin Xiao, Dieter Uhl, Zhixiang Shi, Wenwu Zhao, Qiaojing Zhao, Yuzhuang Sun, **Bangjun Liu\***. Paleoclimate-induced wildfires in a paleomire in the Ordos Basin, Northern China during the Middle Jurassic greenhouse period. *Chemical Geology*, 2023, **637**, 121677.
8. Zewei Wang, Yun Xu\*, Qiaojing Zhao, Minmin Zhang, Weixu Li, Balaji Panchal, **Bangjun Liu\***. Peatland wildfires in the Lower Cretaceous Damoguaihe Formation, Hailar Basin, Northeast China. *Cretaceous Research*, 2023, **150**, 105578.
9. Balaji Panchal, Jinxi Wang, Yuzhuang Sun, Kai Bian, Cunliang Zhao\*, Qiaojing Zhao\*, **Bangjun Liu\***. Production of ethyl esters using municipal sewage sludge and porous ionic liquid coordinated with Burkholderia lipase. *Biochemical Engineering Journal*, 2023, **198**, 109019. 三区
10. **Bangjun Liu\***, Rafael Spiekermann, Cunliang Zhao, Wilhelm Püttmann, Yuzhuang Sun, André Jasper, Dieter Uhl. Evidence for the repeated occurrence of wildfires in an upper Pliocene lignite deposit from Yunnan, SW China. *International Journal of Coal Geology*, 2022, **250**, 103924.

11. **Bangjun Liu\***, Achim Bechtel, Dietmar Gross, Qiaojing Zhao, Wenmu Guo, Samuel Ajuaba, Yuzhuang Sun, Cunliang Zhao\*. Molecular and carbon isotope composition of hydrocarbons from ambers of the Eocene Shenbei coalfield (Liaoning Province, NE China). *Organic Geochemistry*, 2022, **104436**.
12. Shiming Liu, Lian Jiang, **Bangjun Liu\***, Cunliang Zhao, Shuheng Tang, Furong Tan. Investigation of organic matter sources and depositional environment changes for terrestrial shale succession from the Yuka Depression (the 7th Member of the Dameigou Formation): Implications from organic geochemistry and petrological analyses. *Journal of Earth Science*, 2023, **34**, 1577-1595.
13. **Bangjun Liu**, Guangchen Chu, Cunliang Zhao\*, Yuzhuang Sun. Leaching behavior of Li and Ga from granitic rocks and sorption on kaolinite: Implications for their enrichment in the Jungar Coalfield, North China. *China Geology*, 2022, **5**, 34-45.
14. **Bangjun Liu**, Cunliang Zhao, Jens Fiebig, Achim Bechtel, Yuzhuang Sun, Wilhelm Püttmann\*. Stable isotopic and elemental characteristics of pale and dark layers in an upper Pliocene lignite deposit basin in Yunnan Province, southwestern China: Implications for paleoenvironmental changes. *International Journal of Coal Geology*, 2020, **226**, 103498.
15. **Bangjun Liu**, Junyan Wang, Hongtao He, Vivek Mishra, Yanheng Li, Jinxi Wang\*, Cunliang Zhao\*. Geochemistry of Carboniferous coals from Laoyaogou Mine, Ningwu Coalfield, Shanxi Province, northern China: emphasis on the enrichment of valuable elements. *Fuel*, 2020, **279**, 118414.
16. **Bangjun Liu**, Mirijam Vrabc, Miloš Markič, Wilhelm Püttmann\*. Reconstruction of paleobotanical and paleoenvironmental changes in the Pliocene Velenje Basin, Slovenia, by molecular and stable isotope analysis of lignites. *International Journal of Coal Geology*, 2019, **206**, 31–45.
17. **Bangjun Liu**, Cunliang Zhao, Jialiang Ma, Yuzhuang Sun, Wilhelm Püttmann\*. The origin of pale and dark layers in Pliocene lignite deposits from Yunnan Province, Southwest China, based on coal petrological and organic geochemical analyses. *International Journal of Coal Geology*, 2018, **195**, 172–188.
18. 刘帮军, 李敬智, Stojanović Ksenija, 黄佳众, 刘悦婷, 孙雨萌, Životić Dragana, 王金喜, 孙玉壮, 赵存良. 中国-塞尔维亚中新世浅色褐煤生物标志化合物组成及其成因. *煤炭学报*, 2025, 50(6): 2973–2987.
19. 田泽奇, 王志勇, 姚建国, 郭旭, 李鸿豆, 郭文牧, 石志祥, 赵存良, 刘帮军\*. 岩浆接触带高变质煤化学结构 FTIR 定量表征. *光谱学与光谱分析*, 2023, 43(10): 2747-2754.
20. 刘帮军, 田泽奇, 李鸿豆, 郭旭, 赵巧静, 石志祥, 郭文牧, 张宁, Achim Bechtel, Maksim G. Blokhin, 孙玉壮, 赵存良\*. 沈北煤田煤中琥珀的植物来源和稳定同位素的古环境意义. *地质学报*, 2023, 97(08): 2445-2458.
21. 郭旭, 姚建国, 李鸿豆, 田泽奇, 王志勇, 石志祥, 赵存良, 刘帮军\*, 孙玉壮. 不同燃烧程度木炭的 FTIR 特征对煤中丝质体成因的指示意义. *煤炭科学技术*, 2023, 51 (09): 292-301.

热忱欢迎地质、化学、环境等相关专业和励志前往国内外高水平大学继续深造的同学联系报考和调剂。