

**Appendix A-22Main situation of students in this major
participating in innovative practice activities in the past 3 years
and a brief description of the activities participated in**

**Near 3 Year Undergraduate Student Practical Innovation Training
Program Project Overview**

Serial number	Project Name	Supervisor's name	Time	Level
1	Study on the mechanism of humic substance-enhanced microbial reduction and remediation of hexavalent chromium pollution in water	Li Yuanping	2023-2025	National level
2	Experimental study on the preparation of Fe-Ca-Al composite oxide particles using biological template method for treating sulfate wastewater	Li Hao Wang Aihe	2021-2023	National level
3	Research on the degradation of persistent organic pollutants using carbon nanofiber catalysts regulated by built-in and polarized electric fields	Wang Caiwen	2023-2025	provincial level
4	Diatomaceous earth/NdTiO ₂ Optimization of preparation and performance study of photocatalytic degradation of tetracycline	Shu Jinkai	2022-2024	provincial level
5	Magnetic biochar activated persulfate degradation of diclofenac in water	Wang Yang	2022-2024	provincial level
6	Preparation of composite photocatalyst BiOI/rGO and its performance in photocatalytic degradation of Rhodamine B wastewater	Shu Jinkai	2021-2023	provincial level
7	Study on the degradation of tetrabromobisphenol ether by sludge-based biochar combined with microorganisms	Li Yuanping	2021-2023	provincial level
8	Energy recovery device for wastewater treatment plants based on carbon peak and carbon neutrality	Chi Nianping	2021-2023	provincial level
9	Study on the effectiveness of three-dimensional electrolytic fixed bed with composite modified fillers for treating catering wastewater	Zhou Jun Li Hao	2020-2022	provincial level
10	Experimental study on chitosan-Fe ₃ O ₄ @Ca-Fe-La composite adsorbent for treating fluoride-containing wastewater	Wang Aihe Shu Jinkai	2020-2022	provincial level
11	Photocatalytic powder - ceramic membrane coupled degradation of sulfamethoxazole in surface water experimental study	Chi Nianping	2023-2025	provincial level
12	Activation of kaolin with persulfate for the degradation of PPCPs	Jiang Haiyan	2020-2022	School level
13	Research and Application of Integrated Composite Three-Dimensional Electrolytic Bed Device	Zhou Jun	2023-2024	School level

List of student participation in various competition projects

Serial number	Student Name (First)	Award-winning project	Organizer	year	level	Guidance teacher
1	Hu Huixiang Li Lili Wang Mingwei	The third "Beijing Enterprises Water Group Cup" team second prize for national university students' municipal environmental innovation practice ability	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
2	Hu Huixiang	Third Prize in the Third "Beijing Enterprises Water Group Cup" Competition for Innovation and Practice Ability in Municipal Environmental Science for College Students	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
3	Li Lili	Third Prize in the Third "Beijing Enterprises Water Group Cup" Competition for Innovation and Practice Ability in Municipal Environmental Science for College Students	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
4	Wang Mingwei	Third Prize in the Third "Beijing Enterprises Water Group Cup" Competition for Innovation and Practice Ability in Municipal Environmental Science for College Students	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
5	Hu Huixiang	First Prize in the Third "Beijing Enterprises Water Group Cup" Virtual Competition for National College Students' Municipal Environmental Innovation Practice Ability	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
6	Li Lili	First Prize in the Third "Beijing Enterprises Water Group Cup" Virtual Competition for National College Students' Municipal Environmental Innovation Practice Ability	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
7	Wang Mingwei	First Prize in the Third "Beijing Enterprises Water Group Cup" Virtual Competition for National College Students' Municipal Environmental Innovation Practice Ability	Harbin Institute of Technology	2021	National level	Li Hao Jiang Haiyan
8	Chen Pengyu	Second Prize in the Third National College Student Municipal Environmental Innovation Practice Ability "Beikong Water Cup" Virtual Competition	Harbin Institute of Technology	2021	National level	Li Yuanping Zhang Chun
9	Zou Bin	First Prize in the Third "Beijing Enterprises Water Group Cup" Virtual Competition for National College Students' Municipal Environmental Innovation Practice Ability	Harbin Institute of Technology	2021	National level	Li Yuanping Zhang Chun
10	Zhu Chenyang	First Prize in the Third "Beijing Enterprises Water Group Cup" Virtual Competition for National College Students' Municipal Environmental Innovation Practice Ability	Harbin Institute of Technology	2021	National level	Li Yuanping Zhang Chun

11	Zhu Chenyang	Third Prize in the Third "Beijing Enterprises Water Group Cup" Competition for Innovation and Practice Ability in Municipal Environmental Science for College Students	Harbin Institute of Technology	2021	National level	Li Yuanping Zhang Chun
12	Zou Bin	Third Prize in the Third "Beijing Enterprises Water Group Cup" Competition for Innovation and Practice Ability in Municipal Environmental Science for College Students	Harbin Institute of Technology	2021	National level	Li Yuanping Zhang Chun
13	Jia Shunyang	First Prize in the National College Student English Vocabulary Challenge	English Weekly Newspaper Agency	2022	National level	
14	Wang Qian	Third Prize in the Hunan Province College Students' Energy Conservation and Emission Reduction Social Practice and Technology Competition: An Efficient Electro-Promoted Advanced Oxidation Process for Purifying Dye Wastewater	Hunan Provincial Department of Education	2023	provincial	Chi Nianping
15	Yang Zhenwen	Third Prize of the 2nd College Electrical and Electronic Engineering Innovation Competition	China Electrotechnical Society	2023	National level	Huang Zhiliang
16	Jia Shunyang	Third Prize in the National College Student English Competition	Higher Education Foreign Language Teaching Research Association	2023	National level	

In the last 3 years, undergraduate students have published papers

Serial number	Title	journal	student	Publication time	Guidance Teacher
1	Adsorption mechanism of sodium alginate composite membrane for removing Cu(II) from water	Guangdong Chemical	Liu Yuqi Duan Yixin Zhou Letao	2021.06	Jiang Haiyan
2	Research Review on Dyeing and Printing Wastewater Treatment Technology	Papermaking equipment and materials	Yang Yuewu Huang Yuqin Xun Wenzhen Liu Shuyu	2022.08	Shu Jinkai
3	Overview of Research on New Fluoride Removal Materials at Home and Abroad	Journal of Hunan City University (Natural Science Edition)	Liao Ziyuan, Yang Peixuan, Wen Tianlang	2022.09	Wang Aihe Shu Jinkai
4	ZnO/g-C ₃ N ₄ Nanostructured Photocatalyst for Enhancement of Photodegradation of	Int. J. Electrochem. Sci	Yuan Xinyi	2022.09	Chi Nianping

	Antibiotic Pollutant in Wastewater under Simulated solar Light Illumination				
5	Efficient removal of RR2 dye by electro-Ce(III) process with its elegant arts and attractive charm in performance, energy consumption and mechanism	Environmental Research	Yang Zhenwen	2022.10	Chi Nianping
6	Influencing Factors and Kinetics of Modified Shell Powder/La-Fe-TiO ₂ Photocatalytic Degradation of Pyridine Wastewater	International journal of environmental research and public health	Liu Shuyu	2022.11	Shu Jinkai
7	Improving the humification by additives during composting: A review	Waste Management	Zou Bin	2023.01	Li Yuanping
8	Research on the Governance Strategies for Heavy Metal Pollution in Dongting Lake under the "Dual Carbon" Goals	Papermaking equipment and materials	Liu ShuyuTang JiaheZhang Zhiyou Luo Rixin	2023.07	Shu Jinkai