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| **Drinking Water Safety and Air Pollution Control** | |
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| **Research background:**  Water pollution and air pollution are the major environmental issues in our country. Therefore, the State Council has issuedthe Action Plan for Prevention and Control of Water Pollution and Air Pollution. To serve the national needs, the research alliance of Drinking Water Safety and Air Pollution Control was established through the integration of multiple disciplinesto constructan integrated system of pollution control and security technology for drinking water from source to tap, as well as the key technology system for high-efficiency control of air pollution sources, indoor air purification, and health risk assessmentof pollution. The alliance aims to undertake national major scientific research tasks, make prominent scientific research achievements, cultivate leading talents and academic backbone, and build a high-level scientific research team so as to build itself into a research alliance with significant international influence. | |
| **Main research topics and progress:**   1. Accurate analysis of organic pollutant structures in water and air; development of onsite online technology and equipment for monitoring aquatic and air organic pollutants. 2. Technology research and project demonstration including wastewater advanced treatment and resource utilization in key industries, efficient removal of nitrogen and phosphorus from urban sewage with low consumption and ecological risk control, agricultural non-point source pollution control and reduction, biological-ecological recovery in river network and lake and reservoir water source, and emerging contaminant treatment and risk control in raw water, etc.; complete technical system of water quality security assurance for drinking water sources. 3. Safe and efficient drinking water treatment technology combination of source water with different pollution, detection and control technology of drinking water taste and odor compounds, removal and control technology of trace refractory organics, polymer composite separation membrane materials for water treatment and its multilevel surface and interface engineering, membrane filtration technology of drinking water advanced treatment. 4. Water quality control, leakage control, pipe burst prevention, pipe health diagnosis and repair, and drinking water security technology within water distribution system. 5. Smart water environment perception and risk control system technologies based on information physical fusion system, sensor equipment research, and integrated system development as well as application promotion. 6. Advanced treatment and monitoring technology of atmospheric pollutants including sulfur dioxide, nitrogen oxides, PM2.5, volatile organic compounds and dioxin, etc., discharged by power and industrial department. 7. Efficient treatment technology of atmospheric pollutants including sulfur dioxide, nitrogen oxides, PM, etc discharged by vehicles, ships and other moving sources. 8. Emerging efficient adsorption/catalyze purification materials, multi-functional purification components, indoor air purifier and air purification unit of central air conditioning with synergy/coupling new purification technology, and indoor air sampling and detection system. 9. Assessment methods and numerical simulation technology of the impact of air contaminant on human health. | |
| **Member and College:**  ZHANG Tuqiao, Qiushi Professor, College of Civil Engineering and Architecture  GAO Xiang, Cheung Kong Scholar, College of Energy Engineering  ZHU Lizhong, Member of Chinese Academy of Engineering, College of Environmental & Resource Sciences  WANG Hao, Member of Chinese Academy of Engineering, College of Civil Engineering and Architecture  David Z. ZHU, Fellow of the Canadian Academy of Engineering, College of Civil Engineering and Architecture  XU Zhikang, Professor, Distinguished Young Scholars, Department of Polymer Science and Engineering  XU Xiangyang, Professor, College of Environmental & Resource Sciences  ZHANG Guangxin, Professor, College of Control Science and Engineering.  SHEN Huahao, Professor, School of Medicine  YU Xiaoli, Professor, College of Energy Engineering, Zhejiang University.  PAN Yuanjiang, Professor, Distinguished Young Scholars, Department of Chemistry  CHEN Baoliang, Cheung Kong Scholar, College of Environmental & Resource Sciences, | |

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| **Representative achievements:**   1. Dozens of subjects funded, including 8 ten-millionlevel projects, with the contract funds more than 200 million RMB. 2. 1 first prize of National Technological Invention, 1 second prize of the State Science and Technology Advancement Award, 2 first prizes of Science and Technology Award of Zhejiang Province and 1 third prize. 3. 1Member of Chinese Academy of Engineering, 1 Fellow of the Canadian Academy of Engineering, 1 Cheung Kong Scholar, 2 Experts of “Thousand Talents Plan”, 1 Ten-Thousand plan (National high level talents special support plan), 1 Zhejiang University Hundred Talents Program. 4. 2 Innovative Research Groups of the National Natural Science foundation |