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ESE acknowledges the interdisciplinary nature of scientific research in environmental science and ecological technology. The journal is specifically interested in frontier researches and transdisciplinary topics including, but not limited to the following areas.

Global Change Ecology	Environmental Technology	Environmental Science	Ecological Technology
<ul style="list-style-type: none"> <li>New concept and theory of ecology</li> <li>Ecological challenges of climate change</li> <li>Assessment and management of natural resources and land use</li> <li>Conservation of biodiversity</li> <li>Sustainable economy, practice, and technology</li> <li>Policy, governance, and standard for sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Environmentally-friendly technologies for resource/energy recovery in the processes of pollution control, such as urban mining and solid-waste management technologies, clean conversion solutions for biofuels and bioproducts</li> <li>Water, air and soil pollution control</li> <li>Environmentally functional materials, devices, and systems</li> <li>Green and sustainable technologies</li> <li>Big data and AI-driven technologies</li> </ul>	<ul style="list-style-type: none"> <li>Atmospheric science and air pollution management</li> <li>Persistent organic pollutants (POPs) and their inhibition mechanisms</li> <li>Environmental biochemistry and biogeochemistry</li> <li>Environmental health</li> <li>Environmental omics approaches</li> <li>Green catalysis and green processing</li> <li>Risk assessment and LCA evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Restoration ecology and ecosystem remediation</li> <li>Ecological processes of pollutant degradation and transformation</li> <li>Reduction and mitigation of the effects of greenhouse gas emissions</li> <li>Rural and urban environmental management theories and practices</li> <li>System modelling for an ecosystem and pollution management</li> <li>Integrated and complex ecosystem management</li> </ul>

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### Editorial

Preface to the inaugural issue of Environmental Science & Ecotechnology.  
doi: <https://doi.org/10.1016/j.ese.2019.100003>



Predicting the future is hard, but doable: Editorial introduction to Young Lion(esse)s.  
doi: <https://doi.org/10.1016/j.ese.2020.100033>



Opportunities and challenges after biosecurity legislation — What we can and should do in environmental science and ecotechnology?  
doi: <https://doi.org/10.1016/j.ese.2021.100095>



By the power of young researchers.  
doi: <https://doi.org/10.1016/j.ese.2021.100120>



### Featured articles

Towards carbon neutrality: A study on China's long-term low-carbon transition pathways and strategies.  
doi: <https://doi.org/10.1016/j.ese.2021.100134>



Carbon neutrality of wastewater treatment - A systematic concept beyond the plant boundary.  
doi: <https://doi.org/10.1016/j.ese.2022.100180>



Multi-stage Ensemble-learning-based Model Fusion for Surface Ozone Simulations: A Focus on CMI6P Models.  
doi: <https://doi.org/10.1016/j.ese.2021.100124>



Standardized high-throughput biomonitoring using DNA metabarcoding: Strategies for the adoption of automated liquid handlers.  
doi: <https://doi.org/10.1016/j.ese.2021.100122>



Microbial electrochemistry for bioremediation.  
doi: <https://doi.org/10.1016/j.ese.2020.100013>



Making wastewater obsolete: Selective separations to enable circular water treatment.  
doi: <https://doi.org/10.1016/j.ese.2021.100078>



Biological remediation of acid mine drainage: Review of past trends and current outlook.  
doi: <https://doi.org/10.1016/j.ese.2020.100024>



Nature's fight against plastic pollution: Algae for plastic biodegradation and bioplastics production.  
doi: <https://doi.org/10.1016/j.ese.2020.100065>



### VSI: Carbon neutrality

Towards carbon neutrality and China's 14th Five-Year Plan: clean energy transition, sustainable urban development, and investment priorities.  
doi: <https://doi.org/10.1016/j.ese.2021.100130>



Sustainable treatment of nitrate-containing wastewater by an autotrophic hydrogen-oxidizing bacterium.  
doi: <https://doi.org/10.1016/j.ese.2022.100146>



Global patterns and changes of carbon emissions from land use during 1992–2015.  
doi: <https://doi.org/10.1016/j.ese.2021.100108>



Ready-to-implement low-carbon retrofit of coal-fired power plants in China: Optimal scenarios selection based on sludge and photovoltaic utilization.  
doi: <https://doi.org/10.1016/j.ese.2022.100147>



Green Finance, Fintech and environmental protection: Evidence from China.  
doi: <https://doi.org/10.1016/j.ese.2021.100107>



Impacts of reducing air pollutants and CO<sub>2</sub> emissions in urban road transport through 2035 in Chongqing, China.  
doi: <https://doi.org/10.1016/j.ese.2021.100125>



### Atmospheric sciences

VOCs evaporative emissions from vehicles in China: Species characteristics of different emission processes.  
doi: <https://doi.org/10.1016/j.ese.2019.100002>



Air pollutant emissions induced by rural-to-urban migration during China's urbanization (2005–2015).  
doi: <https://doi.org/10.1016/j.ese.2022.100166>



Analysis on the impact of two winter precipitation episodes on PM<sub>2.5</sub> in Beijing.  
doi: <https://doi.org/10.1016/j.ese.2021.100080>



Spatiotemporal variation and source analysis of air pollutants in the Harbin–Changchun (HC) region of China during 2014–2020.  
doi: <https://doi.org/10.1016/j.ese.2021.100126>



### AI for environmental science and ecotechnology

Data augmentation and machine learning techniques for control strategy development in bio-polymerization process.  
doi: <https://doi.org/10.1016/j.ese.2022.100172>



### Biodiversity and biosecurity

Zooplankton biodiversity monitoring in polluted freshwater ecosystems: A technical review.  
doi: <https://doi.org/10.1016/j.ese.2019.100008>



Biodiversity conservation in China: A review of recent studies and practices.  
doi: <https://doi.org/10.1016/j.ese.2020.100025>



### (Bio-) Electrochemical technology

Modeling multicomponent ion transport to investigate selective ion removal in electrodialysis.  
doi: <https://doi.org/10.1016/j.ese.2019.100007>



Electrochemistry-stimulated environmental bioremediation: Development of applicable modular electrode and system scale-up.  
doi: <https://doi.org/10.1016/j.ese.2020.100050>



Immobilisation of electrochemically active bacteria on screen-printed electrodes for rapid in situ toxicity biosensing.  
doi: <https://doi.org/10.1016/j.ese.2020.100053>



Microbial reduction of organosulfur compounds at cathodes in bioelectrochemical systems.  
doi: <https://doi.org/10.1016/j.ese.2020.100009>



Coupling of bioelectrochemical toluene oxidation and trichloroethene reductive dechlorination for single-stage treatment of groundwater containing multiple contaminants.  
doi: <https://doi.org/10.1016/j.ese.2022.100171>



### Environmental health

Transcriptomic analysis of bisphenol AF on early growth and development of zebrafish (*Danio rerio*) larvae.  
doi: <https://doi.org/10.1016/j.ese.2020.100054>



Gut microbiota dysbiosis involves in host non-alcoholic fatty liver disease upon pyrethroid pesticide exposure  
doi: <https://doi.org/10.1016/j.ese.2022.100185>



### Environmental management

China's historical evolution of environmental protection along with the forty years' reform and opening-up.  
doi: <https://doi.org/10.1016/j.ese.2019.100001>



In silico assessment of household level closed water cycles: Towards extreme decentralization.  
doi: <https://doi.org/10.1016/j.ese.2022.100148>



### Environmental materials

Efficient adsorption of europium (III) and uranium (VI) by titanate nanorings: Insights into radioactive metal species.  
doi: <https://doi.org/10.1016/j.ese.2020.100031>



Nickel-metal-organic framework nanobelt based composite membranes for efficient Sr<sup>2+</sup> removal from aqueous solution.  
doi: <https://doi.org/10.1016/j.ese.2020.100035>



Photocatalytic reduction of Cr(VI) by WO<sub>3</sub>@PVP with elevated conduction band level and improved charge carrier separation property.  
doi: <https://doi.org/10.1016/j.ese.2020.100034>



CoSe<sub>2</sub> nanobelt coupled with CoMoO<sub>4</sub> nanosheet as efficient electrocatalysts for hydrogen and oxygen evolution reaction.  
doi: <https://doi.org/10.1016/j.ese.2019.100004>



Bioelectrochemistry for flexible control of biological processes.  
doi: <https://doi.org/10.1016/j.ese.2020.100011>



Monitoring stratification of anode biofilms in bioelectrochemical laminar flow reactors using flow cytometry.  
doi: <https://doi.org/10.1016/j.ese.2020.100062>



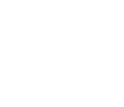
Development of a whole-cell biosensor based on an ArsR-P<sub>ars</sub> regulatory circuit from *Geobacter sulfurreducens*.  
doi: <https://doi.org/10.1016/j.ese.2021.100092>



Electrosynthesis of H<sub>2</sub>O<sub>2</sub> through a two-electron oxygen reduction reaction by carbon based catalysts: From mechanism, catalysis design to electrode fabrication.  
doi: <https://doi.org/10.1016/j.ese.2022.100170>



Ecological and toxicological assessments of anthropogenic contaminants based on environmental metabolomics.  
doi: <https://doi.org/10.1016/j.ese.2021.100081>



### (continued from previous page)

Magnetic poly (acrylic acid)-based hydrogels for rapid ammonium sorption and efficient sorbent separation from sewage.  
doi: <https://doi.org/10.1016/j.ese.2021.100097>



Reduction, mineralization, and magnetic removal of chromium from soil by using a natural mineral composite.  
doi: <https://doi.org/10.1016/j.ese.2022.100181>



### Environmental microbiology

Quorum sensing systems regulate heterotrophic nitrification-aerobic denitrification by changing the activity of nitrogen-cycling enzymes.  
doi: <https://doi.org/10.1016/j.ese.2020.100026>



The next frontier of the anaerobic digestion microbiome: From ecology to process control.  
doi: <https://doi.org/10.1016/j.ese.2020.100032>



The “neighbor avoidance effect” of microplastics on bacterial and fungal diversity and communities in different soil horizons.  
doi: <https://doi.org/10.1016/j.ese.2021.100121>



### (Micro-) Pollutants

Mineralization of phenol by ozone combined with activated carbon: Performance and mechanism under different pH levels.  
doi: <https://doi.org/10.1016/j.ese.2019.100005>



Systematic degradation mechanism and pathways analysis of the immobilized bacteria: Permeability and biodegradation, kinetic and molecular simulation.  
doi: <https://doi.org/10.1016/j.ese.2020.100028>



Nature's fight against plastic pollution: Algae for plastic biodegradation and bioplastics production.  
doi: <https://doi.org/10.1016/j.ese.2020.100065>



Consequential fate of bisphenol-attached PVC microplastics in water and simulated intestinal fluids.  
doi: <https://doi.org/10.1016/j.ese.2020.100027>



Tailoring a novel hierarchical cheese-like porous biochar from algae residue to boost sulfathiazole removal.  
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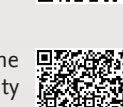
Occurrence, variations, and risk assessment of neonicotinoid insecticides in Harbin section of the Songhua River, northeast China.  
doi: <https://doi.org/10.1016/j.ese.2021.100128>



Exposure to trace levels of metals and fluoroquinolones increases inflammation and tumorigenesis risk of zebrafish embryos.  
doi: <https://doi.org/10.1016/j.ese.2022.100162>



Insight into the role of binding interaction in the transformation of tetracycline and toxicity distribution.  
doi: <https://doi.org/10.1016/j.ese.2021.100127>



CaF<sub>2</sub>: A novel electrolyte for all solid-state electrochromic devices.  
doi: <https://doi.org/10.1016/j.ese.2022.100164>



Metagenomic and viromic data mining reveals viral threats in biologically treated domestic wastewater.  
doi: <https://doi.org/10.1016/j.ese.2021.100105>



Overhauling the assessment of agrochemical-driven interferences with microbial communities for improved global ecosystem integrity.  
doi: <https://doi.org/10.1016/j.ese.2020.100061>



Soil microbiomes divergently respond to heavy metals and polycyclic aromatic hydrocarbons in contaminated industrial sites.  
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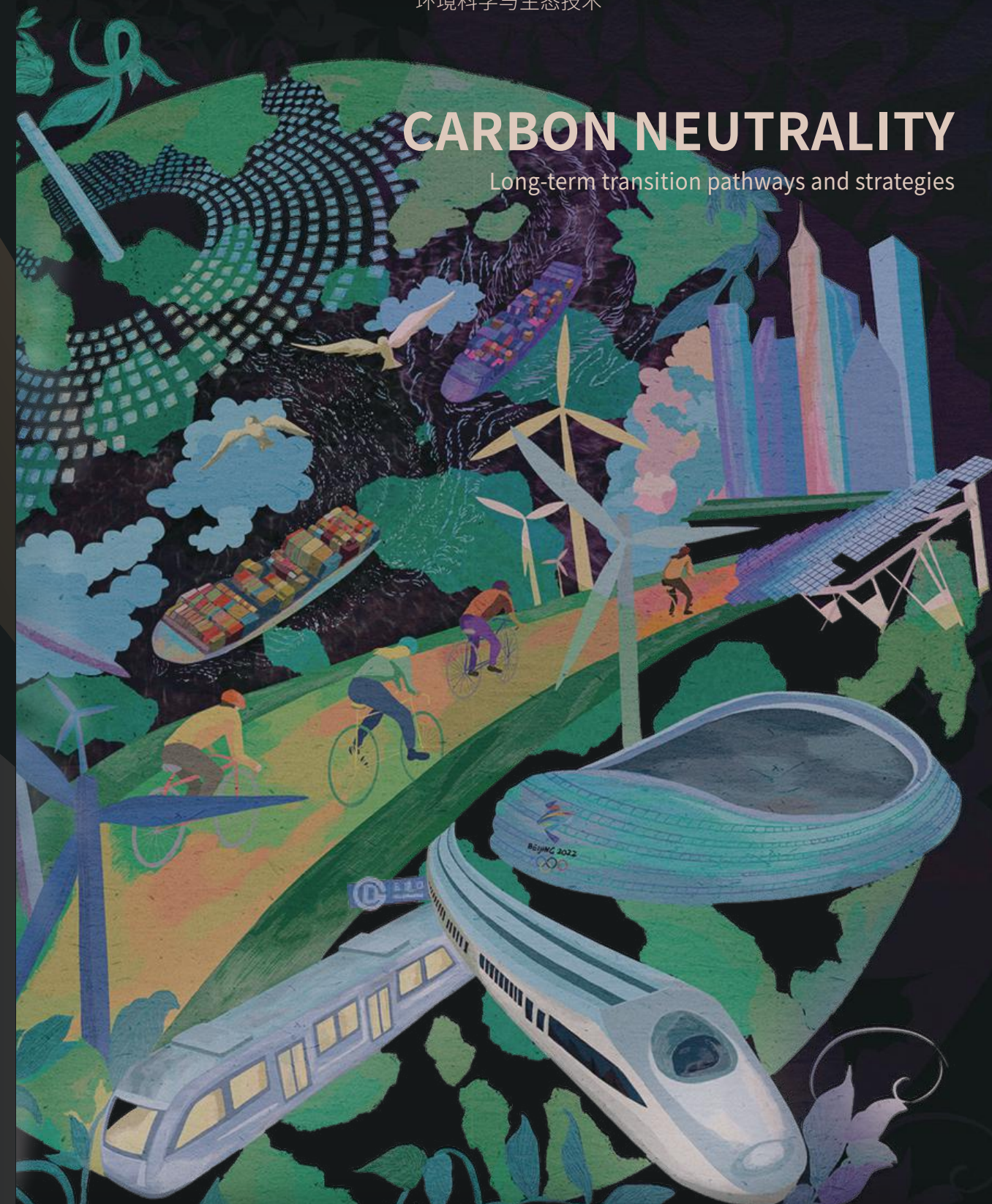
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Carbon  
Neutrality

## CARBON NEUTRALITY

Long-term transition pathways and strategies



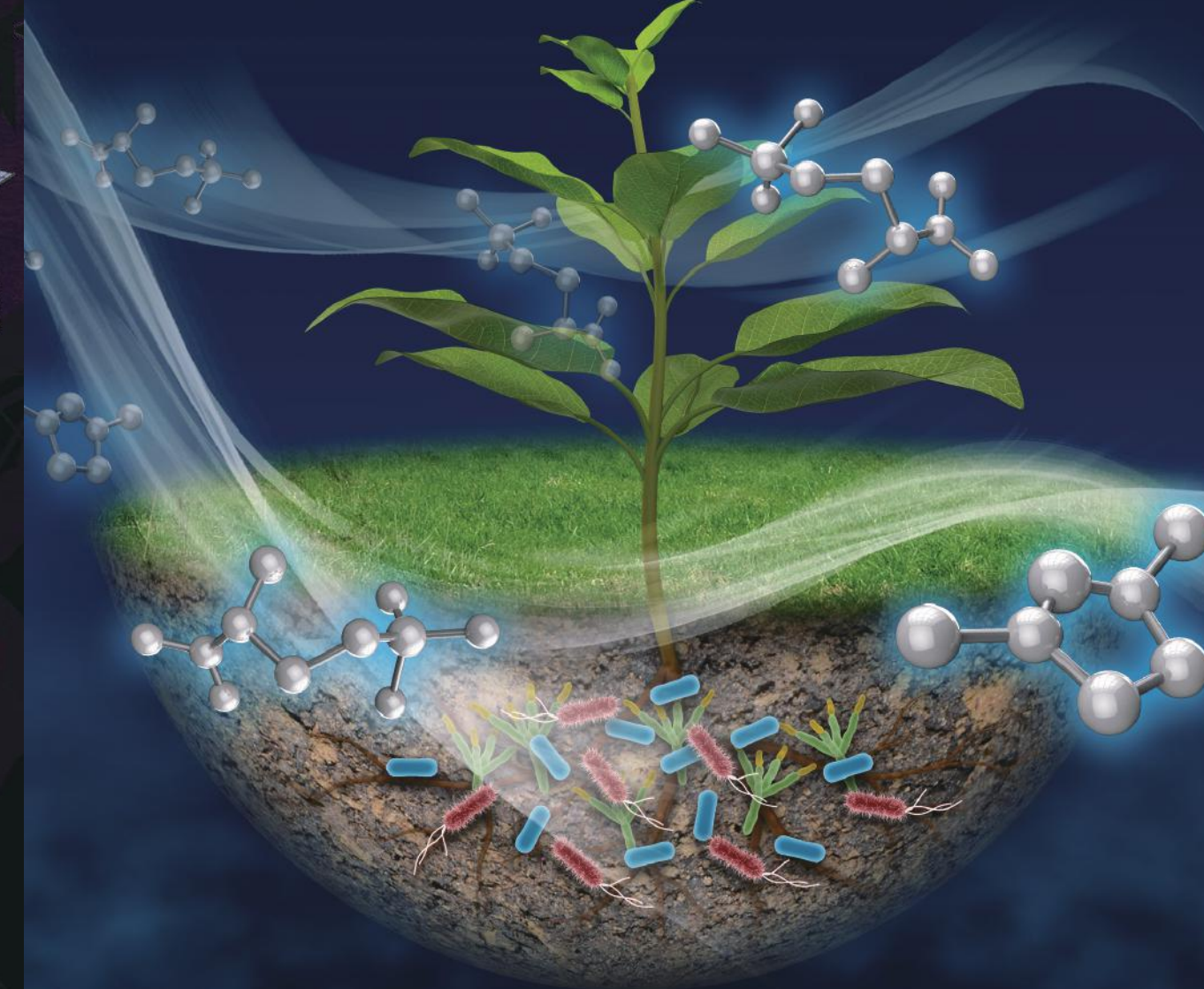
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## AGROCHEMICALS

interfere with plant microbiota globally



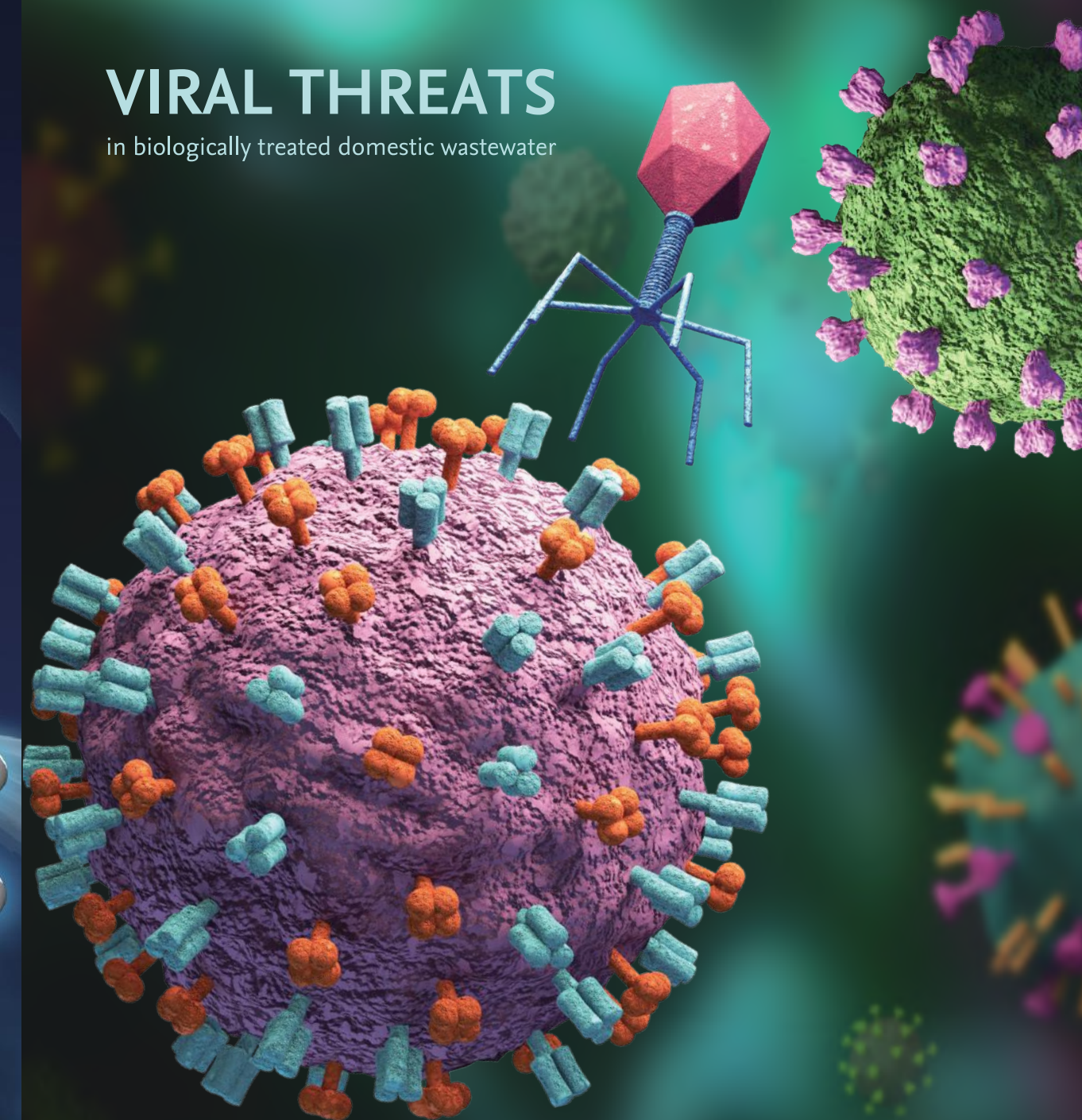
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## VIRAL THREATS

in biologically treated domestic wastewater



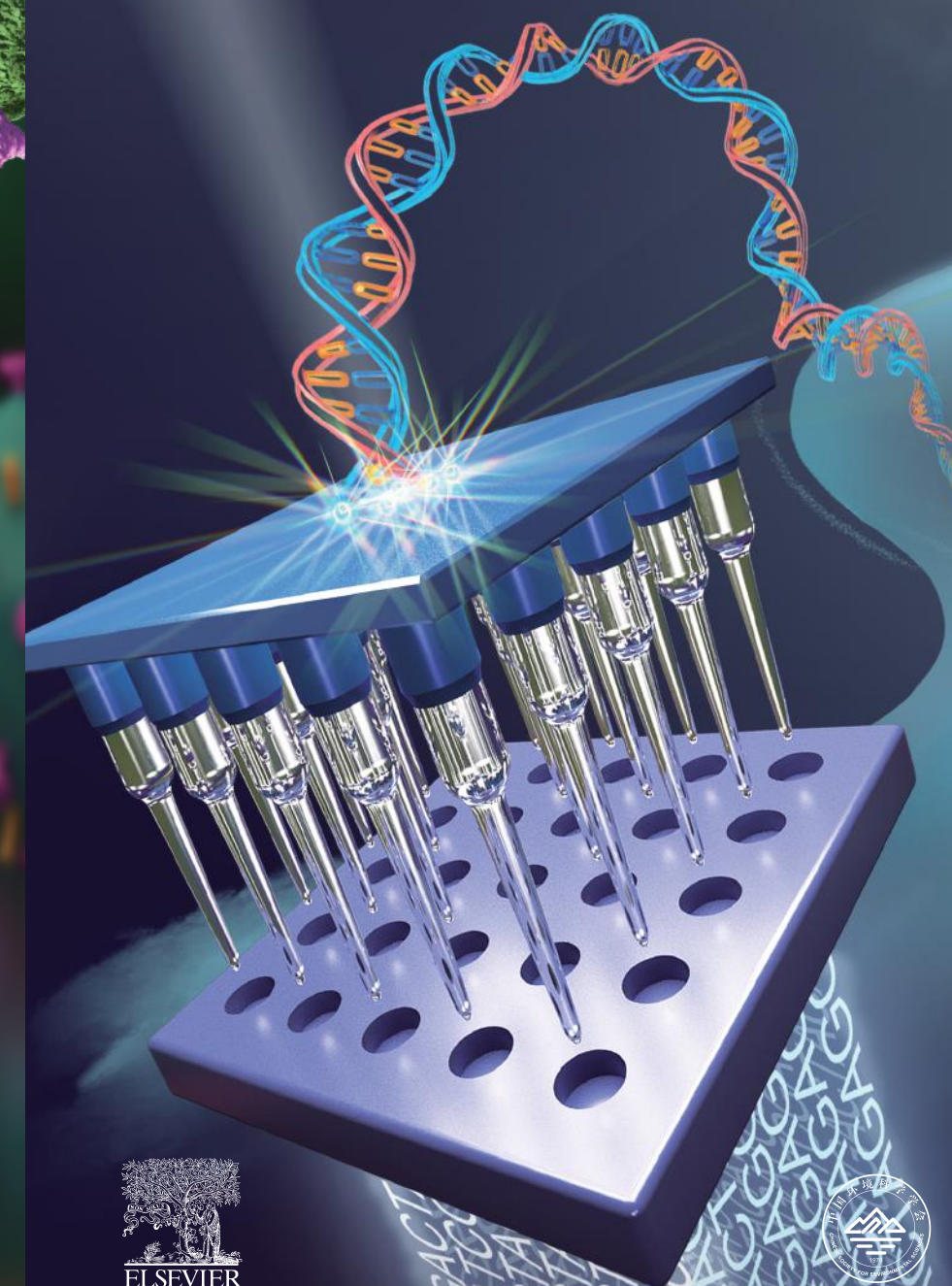
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## BIOMONITORING

using automated DNA-based workflows



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