

# Environmental Science Processes & Impacts

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## IN THIS ISSUE

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### Cover

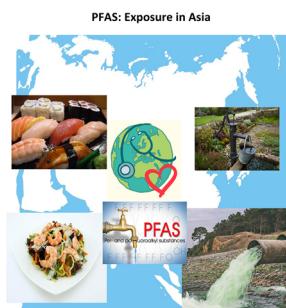
See Anna Sundar Sarmila and Natarajan Chandrasekaran, pp. 2655–2672. Image reproduced by permission of Natarajan Chandrasekaran from *Environ. Sci.: Processes Impacts*, 2025, 27, 2655. Image created with Biorender.com.

## CRITICAL REVIEWS

2614

### Human exposure to per- and poly-fluoroalkyl substances (PFAS) in Asia and contributing factors, with a focus on East Asia

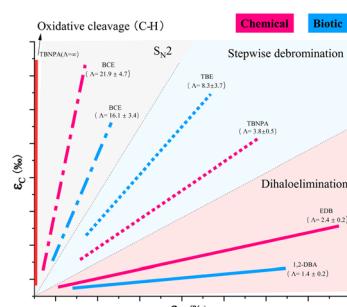
Rai S. Kookana,\* Bo Sha, Jobriell C. Baluyot, Karl C. Bowles, Melanie Kah, Lokesh P. Padhye, Guang G. Ying, Divina Navarro, Michael C. Velarde, Christopher P. Higgins and Ian T. Cousins\*



2636

### Compound-specific stable carbon and bromine isotope analysis tracking transformation mechanisms of organobrominated contaminants: a review of principles, methodologies and applications

Haoyu Zeng, Songsong Chen,\* Xiao Liu, Weiwei Zhang, Ying Liu, Yongzhi Wang and Limin Ma\*



# Environmental Science: Atmospheres



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## Connecting communities and inspiring new ideas

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Fundamental questions  
Elemental answers

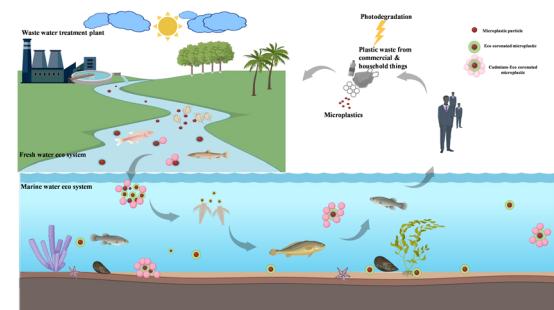


## PAPERS

2655

**Prepared polypropylene microplastics: formation of eco-corona in aquatic systems and their combined toxicity with cadmium in *Artemia franciscana***

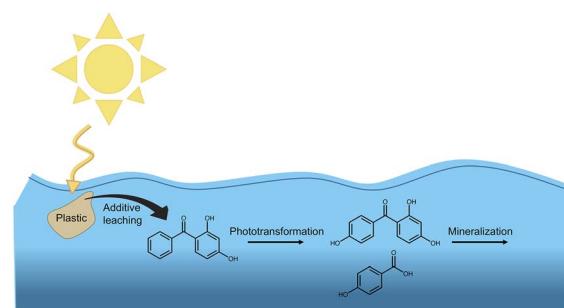
Anna Sundar Sarmila and Natarajan Chandrasekaran\*



2673

**Emerging investigator series: release and phototransformation of benzophenone additives from polystyrene plastics exposed to sunlight**

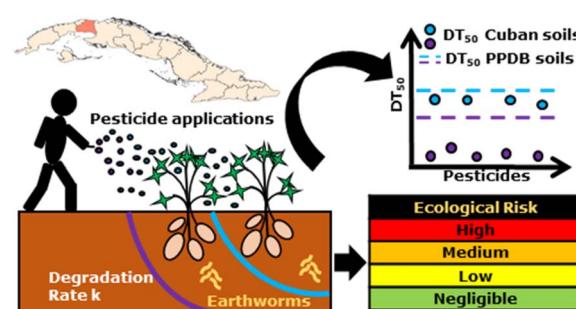
Casey Smith, D. Howard Fairbrother and Carsten Prasse\*



2685

**Extended pesticide soil monitoring in Cuban potato (*Solanum tuberosum* L.) production: residue co-occurrence, dissipation rates, ecological risks, and implications**

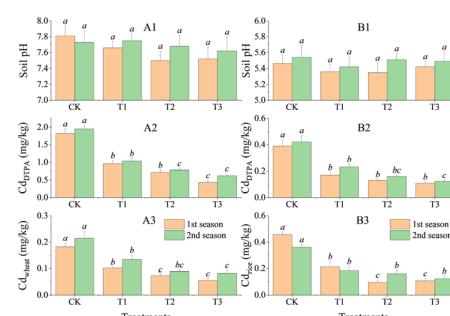
Brizeidi Peña, Isabel Hilber, Dayana Sosa,\* Arturo C. Escobar and Thomas D. Bucheli\*



2698

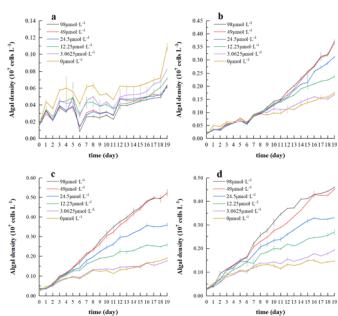
**Environmental stability characteristics of the immobilization effect of sulphydryl grafted palygorskite on soil-available cadmium**

Miao Wang, Xusheng Gao, Xilin Chen, Yifei Shu, Qingqing Huang, Lin Wang, Xu Qin, Yuebing Sun, Yujie Zhao and Xuefeng Liang\*



## PAPERS

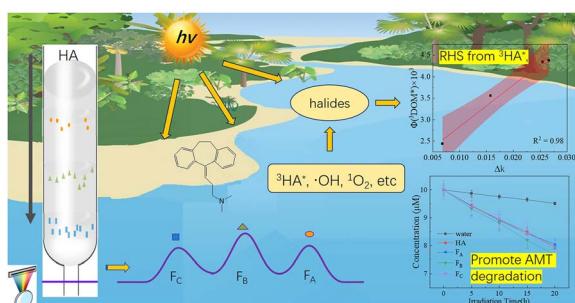
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### Explosive mechanism of red jets *Heterosigma akashiwo* and *Chaetoceros mulleri* under different culture conditions

Weijie Pan, Meilin Wu\* and Hui Zhao\*

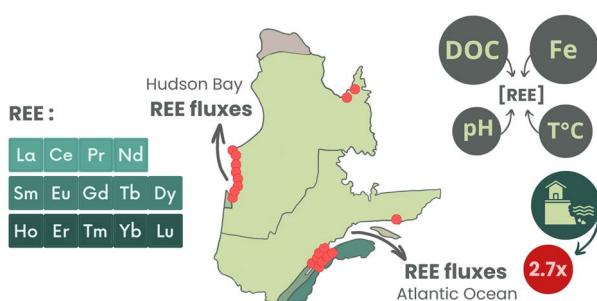
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### Fractionation of humic acid and its effects on the photodegradation of amitriptyline in water

Li Zhiwen, Liu Hui,\* Li Tie, Ou Xiaoxia, Wang Kaixuan and Sun Bing

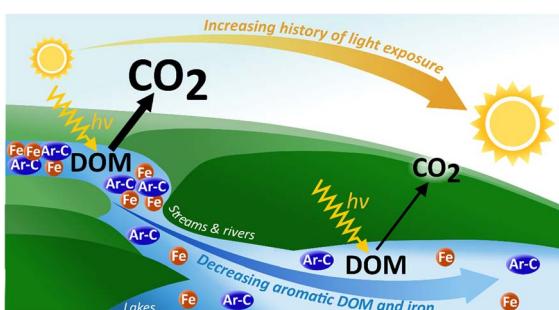
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### Drivers and riverine fluxes of rare earth elements to coastal ecosystems across temperate, boreal, and subarctic ecoregions in Eastern Canada

Marie-Christine Lafrenière, Md Samrat Alam, Jean-François Lapierre, Dominic E. Ponton, Maxime Wauthy, Caroline Fink-Mercier, Holly Marginson, Paul del Giorgio and Marc Amyot\*

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### Controls on the apparent quantum yield for photomineralization of dissolved organic matter in arctic freshwaters

Emma C. Rieb, Catherine A. Polik, George W. Kling and Rose M. Cory\*



## PAPERS

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**Dichloroethene reduction by Fe(II): role of transient Fe(II) phases**

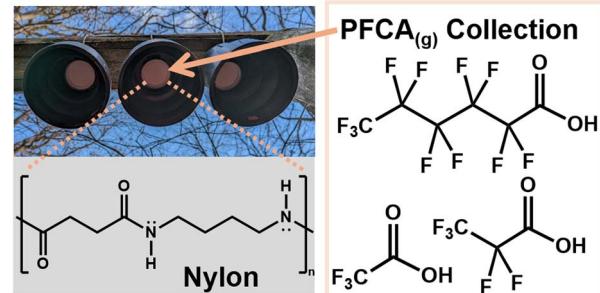
Caroline E. Chelsvig, Malvika Patial, Drew E. Latta, Paul G. Tratnyek, Anke Neumann and Michelle M. Scherer\*



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**Selective ultra-trace atmospheric passive sampling of gaseous perfluoroalkyl carboxylic acids**

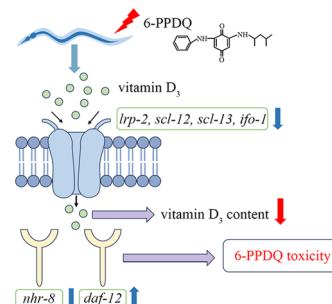
Eric Vanhauwaert, Lindy Carmichael, Irina Nistorescu, Leigh R. Crilley, Chubashini Shunthirasingham, Hayley Hung, Cora J. Young\* and Trevor C. VandenBoer\*



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**Environmentally relevant concentrations of 6-PPDQ disrupt vitamin D<sub>3</sub> adsorption and receptor function in *Caenorhabditis elegans***

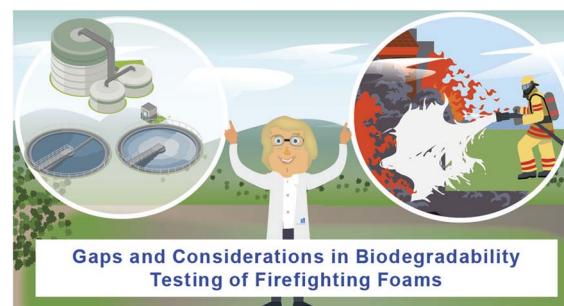
Jingwei Wu, Liane Li, Dayu Hu, Ran Liu, Qian Bian and Dayong Wang\*



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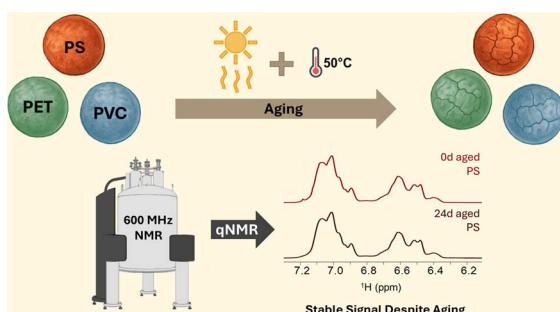
**Fluorine-free foams exhibit incomplete aerobic and anaerobic biodegradation, create redox-specific byproducts and shift microbial communities**

Michael Penrose, Mahsa Modiri, Vicente Gomez-Alvarez, Hodon Ryu, Mallikarjuna N. Nadagouda and Mohamed Ateia\*



## PAPERS

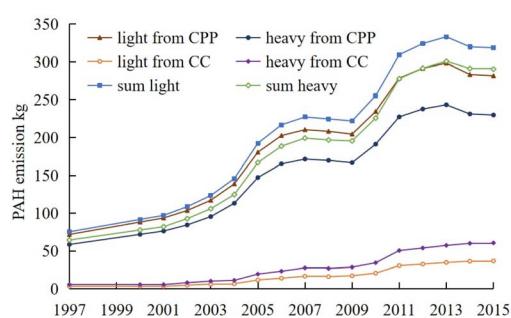
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## Overcoming the challenge of quantifying aged microplastic by qNMR spectroscopy

Julia Schmidt,\* Marte Haave and Wei Wang

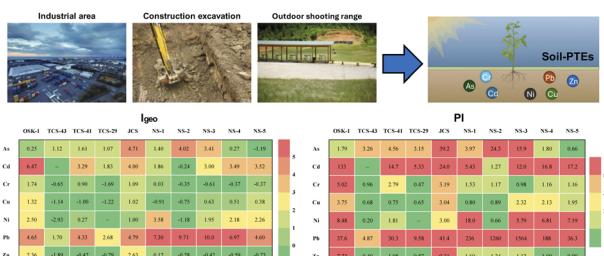
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## Historical input and sources of polycyclic aromatic hydrocarbons in aquatic sediments

Aili Li,\* Bingni Zhang, Jin Zhang and Christoph Schüth

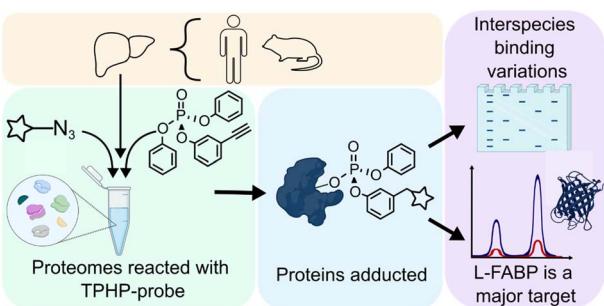
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## Integrating pollution indices and Monte Carlo simulation for a comprehensive risk assessment of potentially toxic elements in soils

Shafiqur Rahman,\* Shengbin Ni, Suman Barua, Shoji Yoshioka, Minami Imaizumi, Kuo H. Wong, Asami S. Mashio, Ismail M. M. Rahman\* and Hiroshi Hasegawa\*

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## Chemical proteomics reveals human liver fatty acid binding protein as a predominant and selective target of triphenyl phosphate

Jolie Miller, Jiajun Han, Diwen Yang, Miriam L. Diamond, Runzeng Liu\* and Hui Peng\*

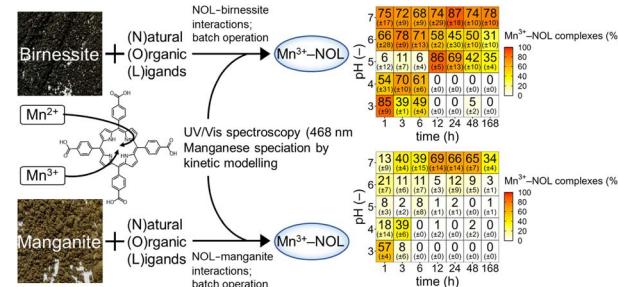


## PAPERS

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## Dissolved trivalent manganese in forest soils – interactions of natural organic ligands with manganese oxides

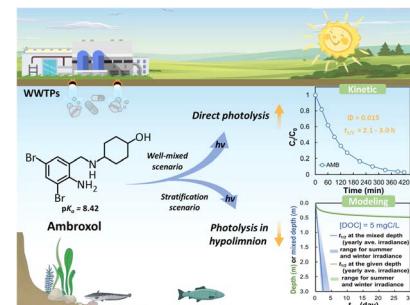
Constantin Lux,\* Kristian Ufer and Tim Mansfeldt



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## Natural sunlight-driven phototransformation of the expectorant drug ambroxol in freshwaters

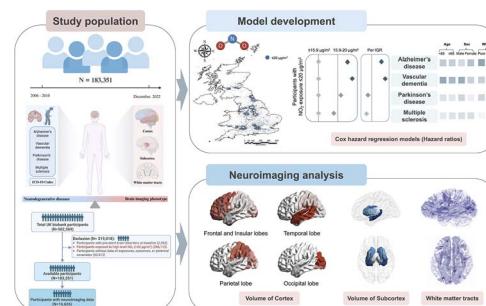
Ying Zhang, Xiaoci Li, Jing Chen, Lei Zhou, Mingbao Feng, Jean-Marc Chovelon and Yuefei Ji\*



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## Long-term exposure to low-level nitrogen dioxide and risks of neurodegenerative diseases among middle-aged and older adults in the UK

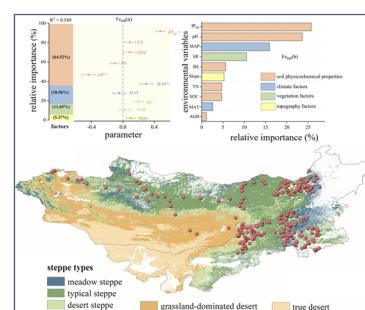
Yujia Bao, Yongxuan Li, Ne Qiang, Yanqiu Zhou, Mike Z. He, Chen Shen, Xiaobei Deng, Jie Yin, Lefei Han\* and Jinjun Ran\*



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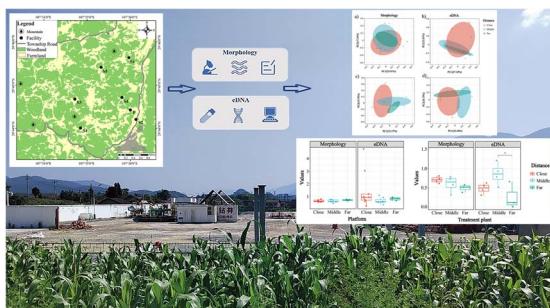
## Fractionation and mechanism of Fe in the mineral-associated soil fraction from the Mongolian Plateau grasslands

Zhihao Wang, Jin-E Wei, Yuanqing Tang,\* Yangzheng Liu, Rong Wei and Changwei Lü\*



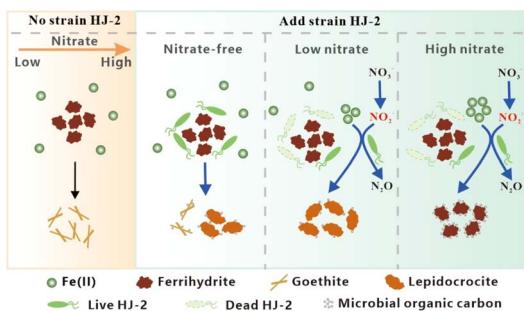
## PAPERS

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**Limited but localized: geochemical and biodiversity impacts of shale gas extraction on soil ecosystems**

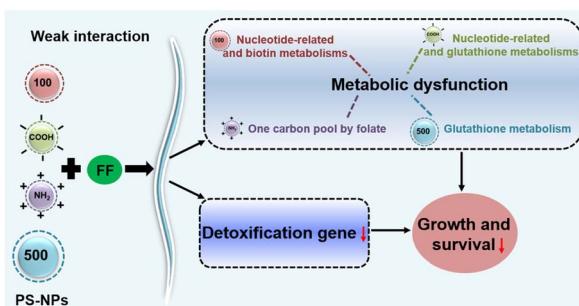
Shangbo Zhou, Yiyao Li, Xicheng Jin, Shuchan Peng, Changqian Miu, Daijun Zhang and Peili Lu\*

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**Nitrate concentration mediates iron transformation by an iron-oxidizing-reducing bacterium in the Fe(II)-Fe(III) co-existing system**

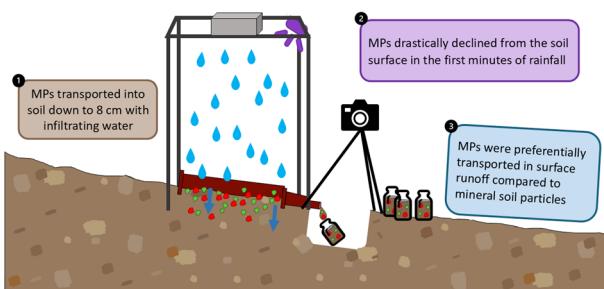
Rong Peng, Qi Zhu, Shuang Li and Hui Liu\*

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**Nanoplastics enhance florfenicol toxicity by disturbing detoxification and metabolic processes in nematodes**

Caijiao He, Shuang Zhang, Jie Hou, Yi Chi, Jing Wang, Jiang Xu and Daohui Lin\*

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**Rainfall-induced lateral and vertical microplastic transport of varying sizes in agricultural fields**

Emilee Severe\*, Saunak Sinha Ray, Wang Li, David Zumr, Tomáš Dostál, Ben W. J. Surridge, Josef Krasa, Florian Wilken, Peter Fiener, Christine Stumpf, Ahsan Maqbool, José Alfonso Gómez, Christian Zafiu and John Quinton

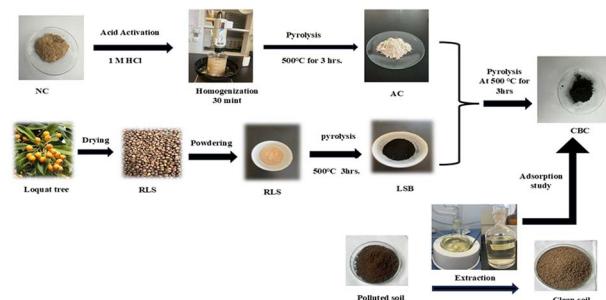


## PAPERS

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**An eco-friendly approach to soil remediation: evaluating clay–biochar composite for used motor oil removal through kinetic, isotherm, and thermodynamic models**

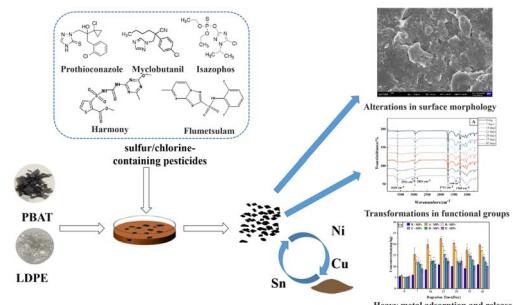
Bzhwen Khalid Majeed,\* Khasraw Abdullah Rashid and Dler M. S. Shwan



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**Influence of sulfur/chlorine-containing pesticides on the aging and heavy metal dynamics of PBAT and LDPE microplastics in soil**

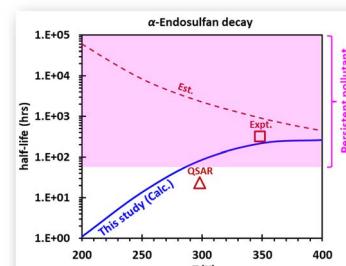
Yi Liu,\* Jiafei Xie, Yimiao Lin, Ruojia Li, Liang Zhu and Ying Zhou



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**Insights into the atmospheric persistence of  $\alpha$ -endosulfan**

Loc T. Nguyen, Tam V.-T. Mai\* and Lam K. Huynh\*



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**The effect of portable air purifiers and cabin air filters on particulate matter and nitrogen oxides concentrations in vehicle cabins**

Evan Renck and Heejung Jung\*

