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# EDITORIAL

## 1149

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Hemi Luan\* and Zongwei Cai

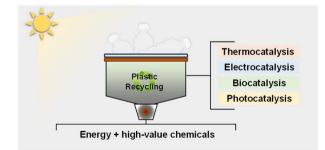


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## 1167

Integrated 3D pore architecture design of bio-based engineered catalysts and adsorbents: preparation, chemical doping, and environmental applications

Dinh Viet Cuong, Jhen-Cih Wu, Eakalak Khan, Gijs Du Laing, Yong Sik Ok\* and Chia-Hung Hou\* Bio-based engineered catalyst and adsorbent

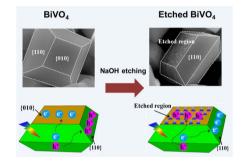


# PAPERS

## 1189

Surface etching to tune the behaviours of photogenerated charges on a decahedron BiVO<sub>4</sub> crystal for efficient photocatalysis

Yue Zhao, Shunning Li, Hui Li, Bin Zeng, Haibo Chi, Yihuan Wang, Huangzhao Wei, Feng Pan\* and Rengui Li\*



# 1196

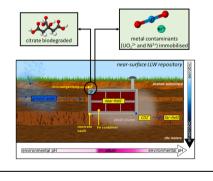
# Anaerobic biodegradation of citric acid in the presence of Ni and U at alkaline pH; impact on metal fate and speciation

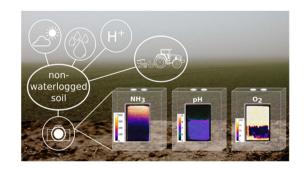
Natalie Byrd,\* Jonathan R. Lloyd, Luke T. Townsend, Joe S. Small, Frank Taylor, Heath Bagshaw, Christopher Boothman, Ilya Strashnov and Katherine Morris\*

## 1210

# Optical chemical sensors for soil analysis: possibilities and challenges of visualising $NH_3$ concentrations as well as pH and $O_2$ microscale heterogeneity

Theresa Merl, Yihuai Hu, Johanna Pedersen, Silvia E. Zieger, Marie Louise Bornø, Azeem Tariq, Sven Gjedde Sommer and Klaus Koren\*



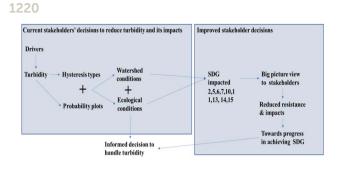




1235

Survey of upstream

industrial chemicals



High-end spill +

risk calculations

Sewage Treatment Plant

00

9

Chemical =

prioritization

RAVEN STREAM

**Online Tool** 

Input

Survey

Software

generated prioritization list

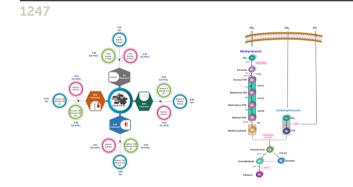
Spill mitigation strategies

# Conceptualizing turbidity for aquatic ecosystems in the context of sustainable development goals

D. Sahoo\* and A. Anandhi

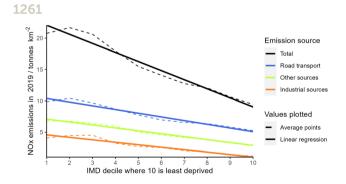
### Prioritizing toxic shock threats to sewage treatment plants from down-the-drain industrial chemical spills: the RAVEN STREAM online tool

John D. Hader,\* Marcus Frenzel, Jerome Scullin, Elzbieta Plaza and Matthew MacLeod\*



# Syngas fermentation to ethanol: CODH/AdhE1 gene expression and microbial community dynamics

Athmakuri Tharak, Ranaprathap Katakojwala and S. Venkata Mohan\*



# Deprivation based inequality in $NO_x$ emissions in England

Nathan R. Gray, Alastair C. Lewis and Sarah J. Moller\*