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Aquatic environment**Modeling assessment for ammonium nitrogen recovery from wastewater by chemical precipitation**

Tao Zhang, Qiucheng Li, Lili Ding, Hongqiang Ren, Ke Xu, Yonggang Wu, Dong Sheng 881

Thermodynamic modeling of PHREEQC program evaluates the effect of reaction factors on MAP precipitation for NH_4^+ -N recovery. Response surface methodology assist in understanding the relative significance of reaction factors.

Using fluorescence-based microplate assay to assess DOM-metal binding in reactive materials for treatment of acid mine drainage

Carmen Mihaela Neculita, Yves Dudal, Gerald J Zagury 891

Fluorescence quenching provides useful quantitative data on dissolved organic material reactivity, towards metals, in wastes used in passive bioreactors for acid mine drainage treatment, and helps selecting potential substrates.

Formation of disinfection byproducts in typical Chinese drinking water

Wenbo Liu, Yanmei Zhao, Christopher WK Chow, Dongsheng Wang 897

The surveys of drinking water from eight water plants in China showed that the amounts of THMs and HAAs were under the limit of standards for drinking water quality.

Distribution and origin of polycyclic aromatic hydrocarbons in surface sediments from an urban river basin at the Metropolitan Region of Curitiba, Brazil

Natalicio Ferreira Leite, Patricio Peralta-Zamora, Marco Tadeu Grassi 904

The concentrations of 16 PAHs were determined in surface sediment samples from nine sites located at the Iguaçú River Basin in the Metropolitan Region of Curitiba, Brazil.

Effect of dissolved organic matter on mercury release from water body

Yutao Zhang, Xi Chen, Yongkui Yang, Dingyong Wang, Xiao Liu 912

The influence of DOM on mercury reduction varies with the molecular weight distribution and elemental composition, and different mechanisms dominate the interaction between DOM and mercury under different TOC concentrations.

***Kappaphycus alvarezii* waste biomass: A potential biosorbent for chromium ions removal**

Oon Lee Kang, Nazaruddin Ramli, Mamot Said, Musa Ahmad, Suhaimi Md Yasir, Arbakariya Ariff 918

Biosorption using *Kappaphycus alvarezii* waste biomass represents a biotechnological innovative as well as cost effective method to remove chromium ion from aqueous solution.

Stepwise superposition approximation approach for analytical solutions with non-zero initial concentration using existing solutions of zero initial concentration in contaminate transport

Hongtao Wang, Rong Han, Yan Zhao, Wenjing Lu, Yaxin Zhang 923

A stepwise superposition approach is presented to obtain analytical solutions of contaminant transport subject to the non-zero initial concentration by using the existing zero initial concentration solutions.

Atmospheric environment**Application of the AERMOD modeling system for environmental impact assessment of NO_2 emissions from a cement complex**

Kanyanee Seangkiatiyuth, Vanisa Surapipith, Kraichat Tantrakarnapa, Anchaleeporn W. Lothongkum 931

AERMOD, US regulatory air dispersion model, was used to evaluate impact of NO_2 from a cement complex in Thailand; model-predicted concentrations were found agreeing with those obtained through measurement.

Emissions of C_2 - C_{12} hydrocarbons in the Hsuehshan tunnel, Taiwan

Chia-Hsiang Lai, Yen-Ping Peng 941

The measurement of 56 hydrocarbons from C_2 to C_{12} provides important information to support the present road transportation system and to find space for a rapidly growing fleet of vehicles leading to extensive plans for new road tunnels throughout the world.

Terrestrial environment**Forest soil CO_2 fluxes as a function of understory removal and N-fixing species addition**

Haifang Li, Shenglei Fu, Hongting Zhao, Hanping Xia 949

Of all the environmental factors, soil temperature, soil moisture, NO₃-N and litterfall might be the most important controlling variables for soil CO₂ fluxes.

Nitrogen cycle of a typical *Suaeda salsa* marsh ecosystem in the Yellow River estuary

Xiaojie Mou, Zhigao Sun, Lingling Wang, Chuanyuan Wang 958

Suaeda salsa is seemingly well adapted to the low-nutrient status, and the nutrient enrichment due to nitrogen import from the Yellow River estuary will potentially threaten *S. salsa* marsh.

Environmental biology

Arbuscular mycorrhizal fungi alter the response of growth and nutrient uptake of snap bean (*Phaseolus vulgaris* L.) to O₃

Shuguang Wang, Zhaozhong Feng, Xiaoke Wang, Wenliang Gong 968

Elevated O₃ significantly affects mycorrhizal structure, plant growth and nutrition status, but the effects on plants are altered by the presence of *Arbuscular mycorrhiza*.

Desulfurization of dibenzothiophene (DBT) by a novel strain *Lysinibacillus sphaericus* DMT-7 isolated from diesel contaminated soil

Ashutosh Bahuguna, Madhuri K. Lily, Ashok Munjal, Ravindra N. Singh, Koushalya Dangwal 975

A novel strain *Lysinibacillus sphaericus* DMT-7 was isolated and characterized, which was capable of desulfurizing DBT into 2HBP, as well as a wide range of organosulfur compounds.

Environmental health and toxicology

Levels of synthetic musk fragrances in human milk from three cities in the Yangtze River Delta in Eastern China

Xiaolan Zhang, Gaofeng Liang, Xiangying Zeng, Jing Zhou, Guoying Sheng, Jiamo Fu 983

Musk was detected in most human milk from Eastern China, with HHCb being the dominant compound followed by MX. The exposure level of infants via milk was low.

Comparative study of heavy metal and pathogenic bacterial contamination in sludge and manure in biogas and non-biogas swine farms

Phitsanu Tulayakul, Alongkot Boonsoongnern, Suwicha Kasemsuwan, Srisamai Wiriyarampa, Juree Pankumnoed,

Suwanna Tippayaluck, Hathairad Hananantachai, Ratchaneekorn Mingkhwan, Ramnaree Netvichian, Sutha Khaodhiar 991

The comparative study results indicated that there is a high probability of environmental contamination by a disposal of excess animal manure.

Environmental catalysis and materials

Photoelectrochemical degradation of Methylene Blue with β -PbO₂ electrodes driven by visible light irradiation

Guoting Li, HoYin Yip, Kin Hang Wong, Chun Hu, Jiu-hui Qu, Po Keung Wong 998

The β -PbO₂ electrode was superior to the commercial DSA electrode in photocatalytic degradation of Methylene Blue as well as in the PEC process under visible light irradiation.

Combining material characterization with single and multi-oxyanion adsorption for mechanistic study of chromate removal by cationic hydrogel

Irene M. C. Lo, Ke Yin, Samuel C. N. Tang 1004

The sorption mechanism of the magnetic hydrogel was determined to be ion exchange by examining different oxyanions adsorption onto the hydrogel under various conditions, with material characteristics.

Municipal solid waste and green chemistry

N₂O and NH₃ emissions from a bioreactor landfill operated under limited aerobic degradation conditions

Pinjing He, Na Yang, Huili Gu, Hua Zhang, Liming Shao 1011

N₂O emission was positively correlated with the prolonged aerobic time and negatively related with the C/N ratio in recycled leachate, while NH₃ volatilization depended on the gas flow.

Special section: The 4th International Symposium on Environmental Economy and Technology

Application of waste frying oils in the biosynthesis of biodemulsifier by a demulsifying strain *Alcaligenes* sp. S-XJ-1

Jia Liu, Kaiming Peng, Xiangfeng Huang, Lijun Lu, Hang Cheng, Dianhai Yang, Qi Zhou, Huiping Deng 1020

Biosynthesis of biodemulsifiers by a demulsifying strain of *Alcaligenes* sp. S-XJ-1 was enhanced through fed-batch fermentation using waste frying oils as supplementary carbon source.

Voltammetric response of ferroceneboronic acid to diol and phenolic compounds as possible pollutants

Shigehiro Takahashi, Naoyuki Abiko, Nobuhiro Haraguchi, Hiroyuki Fujita, Eriko Seki, Tetsuya Ono, Kentaro Yoshida Jun-ichi Anzai 1027

Possible pollutants such as diols and phenolic compounds can be electrochemically detected through a voltammetric response of ferroceneboronic acid in aqueous media.

Effect of manufacturing methods of AgCl/Al₂O₃ catalyst on selective catalytic reduction of NO_x

Satoshi Kishida, Dong-Ying Ju, Hirofumi Aritani 1033

The optimum conditions for preparing catalyst AgCl/Al₂O₃ to remove NO_x were proposed, which appear to be ideal for manufacturing this catalyst.

Tyrosinase-modified carbon felt-based flow-biosensors: The role of ultra-sonication in shortening the enzyme immobilization time and improving the sensitivity for *p*-chlorophenol

Yue Wang, Yasushi Hasebe 1038

Tyrosinase (TYR) was chemically modified onto the amino-functionalized carbon felt using glutaraldehyde under ultrasonic-treatment, and succeeded in improving the performance (sensitivity and stability) of TYR-based flow biosensor for *p*-chlorophenol.

Mineralization of aqueous pentachlorophenolate by anodic contact glow discharge electrolysis

Haiming Yang, Meguru Tezuka 1044

The mechanistic and kinetic aspects of the exhaustive mineralization of pentachlorophenolate in aqueous solution by contact glow discharge electrolysis were investigated.

Electropolymerized poly(Toluidine Blue)-modified carbon felt for highly sensitive amperometric determination of NADH in flow injection analysis

Yasushi Hasebe, Yue Wang, Kazuya Fukuoka 1050

Electropolymerized film of the Toluidine Blue (TB) was coated on the carbon felt surface, and the resulting poly(TB) films-modified carbon felt was successfully used as an electrochemical flow-detector for NADH.

Serial parameter: CN 11-2629/X*1989*m*176*en*P*24*2011-6