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Special section: The 6th International Conference on Interfaces Against Pollution**Hydrolyzed Al(III) clusters: Speciation stability of nano- Al_{13}**

Dongsheng Wang, Shuifeng Wang, Chihpin Huang, Christopher W K. Chow 705

The author found out that the concentrate and temperature were exhibited different roles on the stability of Al_{13} , through the characterization methods of Infrared, ^{27}Al -NMR, PCS and Ferron assay.

Removal of airborne microorganisms emitted from a wastewater treatment oxidation ditch by adsorption on activated carbon

Lin Li, Min Gao, Junxin Liu, Xuesong Guo 711

Airborne microorganisms can be adsorbed effectively on activated carbon with porous structure, large surface area, and hydrophobicity, and the high pressure vapor was an effective technique for adsorbents regeneration.

Material conversion from paper sludge ash in NaOH solution to synthesize adsorbent for removal of Pb^{2+} , NH_4^+ and PO_4^{3-} from aqueous solution

Takaaki Wajima, Kenzo Munakata 718

Material conversion from paper sludge ash in NaOH solution was synthesized to remove inorganic pollutants, such as Pb^{2+} , NH_4^+ and PO_4^{3-} , the obtained product showed multifunctional sorption ability for these inorganic pollutants.

Pretreatment of heterocyclic pesticide wastewater using ultrasonic/ozone combined process

Zhenglong Xiong, Xiang Cheng, Dezhi Sun 725

Ultrasonic/ozone combined process is proved to be an effective pretreatment method for the heterocyclic pesticide wastewater.

Effects of humic acid on recoverability and fractal structure of alum-kaolin flocs

Runsheng Zhong, Xihui Zhang, Feng Xiao, Xiaoyan Li 731

Modified alum-kaolin flocs surface after adsorbing humic acid was characterized using *in situ* particle image velocimetry (PIV), it is found that the floc recoverability was closely related with breakage modes recorded by PIV technique.

Efficiency of active barriers attaching biofilm as sediment capping to eliminate the internal nitrogen in eutrophic lake and canal

Tinglin Huang, Jinlan Xu, Daojian Cai 738

Bio-zeolite capping technology is able to effectively inhibit the release of nitrogen in the sediment, and the zeolite dose has an independent relationship to nitrogen removal.

Production and contribution of hydroxyl radicals between the DSA anode and water interface

Guoting Li, Meiya Zhu, Jing Chen, Yunxia Li, Xiwang Zhang 744

Compared with the contribution of hydroxyl radicals in photocatalytic oxidation, the negligible contribution of hydroxyl radicals in electrochemical oxidation indicates the necessity of UV irradiation for electrochemical oxidation during water treatment.

Speciation characterization and coagulation of poly-silica-ferric-chloride: The role of hydrolyzed Fe(III) and silica interaction

Jian Shi, Yan Zhang, Kaiyun Zou, Feng Xiao 749

The poly-silica-ferric-chloride (PFSC) was synthesized by co-polymerization and characterized by time complexation spectroscopy and photon correlation spectroscopy, it is a new and promising coagulant with a higher molecular weight, lesser positive charge, lower Fe_b , and higher Fe_c .

Aquatic environment**Transport and fate of mercury under different hydrologic regimes in polluted stream in mining area**

Yan Lin, Thorjøn Larssen, Rolf D. Vogt, Xinbin Feng, Hua Zhang 757

Concentrations of Hg, in Wanshan area of China with slightly alkaline aquation environment, are highly controlled by the prevailing hydrologic conditions, and particulate bound Hg is the main Hg reaction in the system.

Effect of ferric and bromide ions on the formation and speciation of disinfection byproducts during chlorination

Shaogang Liu, Zhiliang Zhu, Yanling Qiu, Jianfu Zhao 765

The coexistent ferric and bromide ions significantly increased the formation of THMs in alkaline conditions, whereas the formation of HAAs appeared in weak acid conditions.

Effects of Cu(II) and humic acid on atrazine photodegradation

Xia Sun, Hui Liu, Yaobin Zhang, Yazhi Zhao, Xie Quan 773

Cu(II) induced a photo Fenton-like reaction to enhance degradation of atrazine, while in the coexistence of humic, $^1\text{O}_2$ replacing $\cdot\text{OH}$ acted as the prevailing species, which weakened the photo-degradation.

Chelation of heavy metals by potassium butyl dithiophosphate

Ying Xu, Zhigang Xie, Lu Xue 778

Potassium butyl dithiophosphate (PBD) was synthesized and characterized by IR and NMR, and was used as a new chelating agent for heavy metal removal from aqueous solution.

Atmospheric environment

Carbonyl sulfide and dimethyl sulfide fluxes in an urban lawn and adjacent bare soil in Guangzhou, China

Zhigang Yi, Xinming Wang 784

COS uptake rates and DMS emission rates in urban lawn and mowed lawn were higher than those in bare soils, indicating grasses played great roles in COS and DMS fluxes.

Applying model simulation and photochemical indicators to evaluate ozone sensitivity in southern Taiwan

Yen-Ping Peng, Kang-Shin Chen, Hsin-Kai Wang, Chia-Hsiang Lai, Ming-Hsun Lin, Cheng-Haw Lee 790

This work provides an important information of the relationship between ozone and its precursors, and can be a reference for ozone control strategy.

Effects of continuously regenerating diesel particulate filters on regulated emissions and number-size distribution of particles emitted from a diesel engine

Zhihua Liu, Asad Naeem Shah, Yunshan Ge, Yan Ding, Jianwei Tan, Lei Jiang, Linxiao Yu, Wei Zhao, Chu Wang, Tao Zeng 798

This work presented the impact of continuously regenerating diesel particulate filters with different equations on regulated emissions and number-size distribution of particles emitted from a diesel engine

Passive air sampling of organochlorine pesticides in a northeastern state of India, Manipur

Ningombam Linthoingambi Devi, Shihua Qi, Paromita Chakraborty, Gan Zhang, Ishwar Chandra Yadav .. 808

Monitoring, measuring and identifying sources of selected organochlorine pesticides were carried out in the atmosphere in a northeastern state of India, Manipur.

Environmental biology

Biodegradation of geosmin in drinking water by novel bacteria isolated from biologically active carbon

Beihai Zhou, Rongfang Yuan, Chunhong Shi, Liying Yu, Junnong Gu, Chunlei Zhang 816

Three bacteria, identified as *Chryseobacterium* sp., *Sinorhizobium* sp. and *Stenotrophomonas* sp., were most likely to be geosmin degraders, and the biodegradation of geosmin was determined to be a pseudo first-order reaction.

Tolerance and biosorption of copper (Cu) and lead (Pb) by filamentous fungi isolated from a freshwater ecosystem

Nur Liyana Iskandar, Nur Ain Izzati Mohd Zainudin, Soon Guan Tan 824

The present study indicated the potential of *Aspergillus niger*, *Penicillium simplicissimum*, and *Trichoderma asperellum* to be good biosorbent agents for removing Cu(II) and Pb(II).

Application of enriched stable isotope technique to the study of copper bioavailability in *Daphnia magna*

Wenhong Fan, Chenguang Wu, Chunmei Zhao, Tao Yu, Yuan Zhang 831

This study demonstrated that the enriched stable isotope tracer technique is a powerful tool to investigate metal bioavailability and maybe a good alternative to radioactive measurements.

Interactions of zinc and cadmium toxicity in their effects on growth and in antioxidative systems in tomato plants (*Solanum lycopersicum*)

Jaouhra Cherif, Chamseddine Mediouni, Wided Ben Ammar, Fatma Jemal 837

The interaction between zinc and cadmium was investigated in tomato plants. The results suggested that higher Zn concentrations and Cr are synergistic in their effect on plant growth parameters and oxidation stress.

Environmental health and toxicology

Eco-toxicity of petroleum hydrocarbon contaminated soil

Jingchun Tang, Min Wang, Fei Wang, Qing Sun, Qixing Zhou 845

Total petroleum hydrocarbon content of 1.5% is considered to be a critical value for plant growth and living of earthworm and 0.5% will affect the activity of luminescent bacteria.

Hormetic response of cholinesterase from *Daphnia magna* in chronic exposure to triazophos and chlorpyrifos

Shaonan Li, Yajun Tan 852

Impact of organophosphates on *Daphnia magna* at enzyme and population levels was investigated, and *in vivo* activity of cholinesterase in *D. magna* was measured to better understand the efficiency of this biomarker in predicting the hazards of anticholinesterases.

Environmental analytical methods

TiO₂ nanotubes as solid-phase extraction adsorbent for the determination of polycyclic aromatic hydrocarbons in environmental water samples

Bochra Bejaoui Kefi, Latifa Latrous El Atrache, Hafedh Kochkar, Abdelhamid Ghorbel 860

An analytical method based on TiO₂ nanotubes solid-phase extraction (SPE) combined with gas chromatography (GC) was established for the analysis of seven polycyclic aromatic hydrocarbons (PAHs) in surface water samples.

Municipal solid waste and green chemistry

Methanotrophic community structure of aged refuse and its capability for methane bio-oxidation

Juan Mei, Li Wang, Dan Han, Youcai Zhao 868

Aged refuse contains rich methanotrophs capable of bio-oxidation for methane, and is a natural landfill cover medium for methane emission control.

Moisture distribution in sludges based on different testing methods

Wenyi Deng, Xiaodong Li, Jianhua Yan, Fei Wang, Yong Chi, Kefa Cen 875

Moisture distributions in municipal sewage sludge, printing and dyeing sludge, and paper mill sludge were experimentally studied based on four different methods.

Serial parameter: CN 11-2629/X*1989*m*176*en*P*25*2011-5