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Solar thermal decomposition of desalination reject brine for carbon dioxide removal and neutralisation of ocean acidity

P. A. Davies

Desalination plants could become net absorbers (rather than net emitters) of CO₂.

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Phytoscreening for perchlorate: rapid analysis of tree sap

Matt A. Limmer,* Danielle M. West, Ruipu Mu, Honglan Shi, Kim Whitlock and Joel G. Burken

This study presents the first demonstration of perchlorate phytoscreening, successfully delineating areas of contaminated groundwater quickly and with minimal environmental impact.

Oxidation behavior of zero-valent iron nanoparticles in mixed matrix water purification membranes

Jessica D. Torrey, Jason P. Killgore, Nicholas M. Bedford and Lauren F. Greenlee*

AFM measurements show mechanical decay of ZVI nanoparticles, but the force is much higher than that found in membranes.

Preparation and characterization of potassium nickel hexacyanoferrate-loaded hydrogel beads for the removal of cesium ions

Charu Dwivedi,* Sanjay K. Pathak, Manmohan Kumar,* Subhash C. Tripathi and Parma N. Bajaj

A novel synthetic approach has been used to prepare sorbent hydrogel composite beads of potassium nickel hexacyanoferrate (KNiHCF), using PVA and cross-linked alginate as the binding matrix.

An economical upflow bio-filter circuit (UBFC): a biocatalyst microbial fuel cell for sulfate–sulfide rich wastewater treatment

C. Sukkasem* and S. Laehlah

In this study of the UBFC, a biocatalyst MFC was applied to remove sulfate–sulfide in wastewater (initial concentration: 350–450 mg L⁻¹).

Reductive immobilization of uranium by PAAM–FeS/Fe₃O₄ magnetic composites

Dadong Shao, Xiangxue Wang, Jiaying Li,* Yongshun Huang, Xuemei Ren, Guangshun Hou and Xiangke Wang

PAAM–FeS/Fe₃O₄ composites present exciting performance in reductive immobilization and extraction of trace UO₂²⁺ from aqueous solution.

New insights into the origin of the visible light photocatalytic activity of Fe(III) porphyrin surface anchored TiO₂

M. L. ArunaKumari and L. Gomathi Devi*

The chemisorbed Hemin molecule acts as a sensitizer under visible light and transfers photogenerated electrons to the TiO₂ conduction band through O=C-O-Ti bonds which can act as electron transfer channels. The oxidized Hemin molecule is regenerated by triethanolamine a sacrificial electron donor.

Inactivation mechanisms of *Cryptosporidium parvum* oocysts by solar ultraviolet irradiation

Yuanyuan Liu,* Shengkun Dong, Mark S. Kuhlenschmidt, Theresa B. Kuhlenschmidt, Jenny Drnevich and Thanh H. Nguyen

Direct inactivation of *Cryptosporidium parvum* oocysts by UVB component of sunlight is correlated with UV fluence.

A dielectrophoresis-assisted adsorption approach significantly facilitates the removal of cadmium species from wastewater

Jing Hu, Huiying Chen,* Bihao Lan, Junfeng Geng, Hua Li and Xuan Xing

A dielectrophoresis-assisted adsorption process, as a novel and efficient technique, is reported for the removal of cadmium species from wastewater.

Reduction of microbial contamination from drinking water using an iron oxide nanoparticle-impregnated ultrafiltration mixed matrix membrane: preparation, characterization and antimicrobial properties

Munmun Mukherjee and Sirshendu De*

Iron oxide nanoparticles were prepared and mixed in polyacrylonitrile to produce an ultrafiltration flat sheet mixed matrix membrane with high flux and adequate antimicrobial properties.

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Calibration of Chemcatcher® passive sampler for selected highly hydrophobic organic substances under fresh and sea water conditions

Jördis Petersen, Albrecht Paschke,* Roman Gunold and Gerrit Schüürmann

Sampling rates of the Chemcatcher® are measured for selected highly hydrophobic compounds in calibration experiments with fresh and salt water.

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Adsorptive removal of arsenic from groundwater using a novel high flux polyacrylonitrile (PAN)-laterite mixed matrix ultrafiltration membrane

Somak Chatterjee and Sirshendu De*

A novel high flux PAN-laterite mixed matrix membrane was developed and used to treat arsenate from groundwater.

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A fixed bed column study for the removal of Pb²⁺ ions by watermelon rind

R. Lakshmipathy and N. C. Sarada*

The present study reports the feasibility of removing Pb²⁺ ions from aqueous solution using watermelon rind (WR) as a low cost adsorbent.

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Correction: Quantification of corrosion inhibitors used in the water industry for steam condensate treatment: the indirect electroanalytical sensing of morpholine and cyclohexylamine

Athanasios V. Kolliopoulos, Jonathan P. Metters and Craig E. Banks*