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Contents in Context
Environmental Chemistry, Vol. 6(6), 2009

Postfrontal nanoparticles at Cape Grim: observations
John L. Gras, Salah I. Jimi, Steven T. Siems and Paul B. Krummel *Environ. Chem.* **2009**, *6*, 508

Clouds and the factors controlling cloud properties are essential components in understanding and accurately predicting global climate change. This work examines nanometre-sized atmospheric particles, particularly bursts of enhanced particle concentrations following cold fronts over the Southern Ocean. The properties of these events have been established to enable modelling of their significance as a source of cloud-droplet-forming nuclei.

Postfrontal nanoparticles at Cape Grim: impact on cloud nuclei concentrations
John L. Gras *Environ. Chem.* **2009**, *6*, 515

Accurate prediction of climate change requires good knowledge of all the contributing processes; those processes controlling clouds and cloud properties are of particular importance. In this study the growth of bursts of nanometre-sized particles observed following cold fronts over the Southern Ocean was modelled to assess their importance as a source of cloud droplet nuclei. This showed that these post-frontal events were responsible for ~8% of the cloud nucleus population in winter but much less in summer.

Spatial and temporal variations and factors controlling the concentrations of hydrogen peroxide and organic peroxides in rivers
Khan M. G. Mostofa and Hiroshi Sakugawa *Environ. Chem.* **2009**, *6*, 524

Hydrogen peroxide (H_2O_2) and organic peroxides (ROOH) are ubiquitously present in natural waters and primarily essential for several redox reactions. This study examines the effects of various dissolved organic substances on the formation of H_2O_2 and ROOH and their relationship with different water quality parameters in two Japanese rivers. This study suggests that fulvic acid is primarily responsible for production of H_2O_2 and ROOH in river waters.

Copper adsorption on humic acid coated gibbsite: comparison with single sorbent systems
Juan Antelo, Sarah Fiol, Silvia Mariño, Florencio Arce, Dora Gondar and Rocio Lopez *Environ. Chem.* **2009**, *6*, 535

Adsorption processes control the mobility and bioavailability of nutrients and contaminants in soils, sediments and aquatic systems. Natural organic matter and aluminium oxides are important reactive materials present in natural systems and their mutual interaction may alter the surface properties of both materials, playing an important role on the fate of different contaminants, such as copper, in the environment. The present study illustrates the importance of these interactions, showing that the presence of natural organic matter has a synergic effect on the copper adsorption on the aluminium oxide surface.

Empirical model for predicting concentrations of refractory hydrophobic organic compounds in digested sludge from municipal wastewater treatment plants
Randhir P. Deo and Rolf U. Halden *Environ. Chem.* **2009**, *6*, 544

Tens of thousands of manmade chemicals are discharged into municipal wastewaters on a continual basis by consumers around the world but surprisingly little is known about the occurrence and fate of these substances in the environment. The present study furnishes an easily applicable model that can help to predict the presence and concentration of manmade chemicals in digested municipal sludge (biosolids) destined for disposal on land. The new tool can be used to prescreen and identify in chemical databases potential environmental pollutants.

Dissolution kinetics of meta-torbernite under circum-neutral to alkaline conditions
Dawn M. Wellman, Bruce K. McNamara, Diana H. Bacon, Elsa A. Cordova, Ruby M. Ermi and Laken M. Top *Environ. Chem.* **2009**, *6*, 551

Uranium-phosphate minerals have been identified as a long-term controlling phase that limit the mobility of uranium to groundwater in many contaminated subsurface environments. Complex, coupled processes confound the ability to isolate the rates attributed to individual processes. Results of this investigation provide the necessary information to refine current prediction on the release and long-term fate of uranium in subsurface environments.