

Introduction to papers published from the AIRMON symposium, Marseille, France, 15–19 June 2014

Peter Görner

Dr Peter Görner introduces papers published from the AIRMON symposium on Modern Principles of Air Monitoring and Biomonitoring.

A laboratory study of the performance of the handheld diffusion size classifier (DiSCmini) for various aerosols in the 15–400 nm range

S. Bau,* B. Zimmermann, R. Payet and O. Witschger

Comparison of DiSCmini data to reference data for polydisperse test aerosols in terms of diameter, number concentration and alv-LDSA.

An evaluation of the "GGP" personal samplers under semi-volatile aerosols: sampling losses and their implication on occupational risk assessment

George C. Dragan, Dietmar Breuer, Morten Blaskowitz, Erwin Karg, Jürgen Schnelle-Kreis,* Jose M. Arteaga-Salas, Hermann Nordsieck and Ralf Zimmermann

Left: GGP personal sampler. Right: particulate-vapour fractionation of a semi-volatile aerosol.

Development and field testing of a miniaturized sampling system for simultaneous sampling of vapours and droplets

Dietmar Breuer,* George C. Dragan, Claudia Friedrich, Carsten Möhlmann and Ralf Zimmermann

The sampling of semi volatiles (SV) in workplaces may lead to inaccurate results as measurements can be affected by sampling bias.

Evaluation of bioaerosol exposures during hospital bronchoscopy examinations

Jacques Lavoie,* Geneviève Marchand, Yves Cloutier, Stéphane Hallé, Sylvie Nadeau, Caroline Duchaine and Gilbert Pichette

During hospital bronchoscopy examinations, aerosols emitted from the patient's during coughing can be found suspended in the ambient air. The aerosols can contain pathogenic microorganisms.

Measurement of organic and elemental carbon in downtown Rome and background area: physical behavior and chemical speciation

Pasquale Avino,* Maurizio Manigrasso, Alberto Rosada and Alessandro Dodaro

PM10 carbonaceous fraction in urban air and at a background site is deeply investigated in terms of physical behavior (spatial, vertical and temporal trends) and chemical composition (elements, ions, organic fraction).

Influence of combined dust reducing carpet and compact air filtration unit on the indoor air quality of a classroom

Paul T. J. Scheepers,* Jeroen J. de Hartog, Judith Reijnaerts, Gwendolyn Beckmann, Rob Anzion, Katrien Poels and Lode Godderis

In situ testing in a primary school classroom showed that combining air filtration with a carpet reduced particulate matter concentrations.

Properties of bacterial laccases and their application in bioremediation of industrial wastes

Ram Chandra* and Pankaj Chowdhary

The bioremediation process of industrial waste can be made more efficient using ligninolytic laccase enzymes, which are obtained from fungi, bacteria, higher plants, insects, and also in lichen.

Contaminant classification using cosine distances based on multiple conventional sensors

Shuming Liu,* Han Che, Kate Smith and Tian Chang

This paper proposes a new contaminant classification method to discriminate contaminants in a real time manner, independent of the contaminant concentration. The proposed method quantifies the similarities or dissimilarities between sensors' responses to different types of contaminants. The performance of the proposed method was evaluated using data from injection experiments and compared with a Euclidean distance-based method.

Distinct photoproducts of hydroxylated polybromodiphenyl ethers from different photodegradation pathways: a case study of 2'-HO-BDE-68

Qing Xie, Jingwen Chen,* Hongxia Zhao, Xingbao Wang and Hong-Bin Xie

Photoproducts of 2'-HO-BDE-68 from different pathways are distinct. 1,3,8-Tribromodibenzo-*p*-dioxin was produced from direct photolysis. Formation of di-HO-PBDEs was confirmed experimentally.

A statistical comparison of active and passive ammonia measurements collected at Clean Air Status and Trends Network (CASTNET) sites

Melissa A. Puchalski,* Christopher M. Rogers, Ralph Baumgardner, Kevin P. Mishoe, Garry Price, Michael J. Smith, Neilson Watkins and Christopher M. Lehmann

This study compared ambient ammonia concentrations measured by the Ammonia Monitoring Network (AMoN) with active and passive samplers at Clean Air Status and Trends Network (CASTNET) sites.

Mineralization pathways of organic matter deposited in a river–lake transition of the Rhone River Delta, Lake Geneva

Marie-Eve Randlett, Sebastien Sollberger, Tonya Del Sontro, Beat Müller, Juan Pablo Corella, Bernhard Wehrli and Carsten J. Schubert*

During the éLEMO endeavour sediment cores were retrieved to study the degradation pathways of lacustrine organic material.

Representativeness of shorter measurement sessions in long-term indoor air monitoring

M. Maciejewska* and A. Szczurek

Indoor air quality (IAQ) considerably influences health, comfort and the overall performance of people who spend most of their lives in confined spaces.

Experimental and modeling study of pure terephthalic acid (PTA) wastewater transport in the vadose zone

Cuiling Wang, Changli Liu,* Lixin Pei, Yajie Pang, Yun Zhang and Hongbing Hou

PTA wastewater discharged from a factory was selected as the research object in this project and COD_{cr} was selected as the characteristic pollution factor.

Environmental forensics evaluation of sources of sediment hydrocarbon contamination in Milford Haven Waterway

David I. Little,* Yakov Galperin, Blaise Bullimore and Mike Camplin

Surficial sediment evaluation shows inputs of hydrocarbons from natural, historic and anthropogenic sources including biomass and coal burning, wartime fires, atmosphere, oil refinery effluents, and spills in 1988 and 1996.

Assessing the energy and environmental performance of algae-mediated tertiary treatment of estrogenic compounds

Lisa M. Colosi,* Eleazer P. Resurreccion and Yongli Zhang

This study uses a systems-level modeling approach to illustrate a novel synergy between municipal wastewater treatment and large-scale algaculture for production of bio-energy, whereby algae-mediated tertiary treatment provides efficient removal of unregulated, strongly estrogenic steroid hormones from the secondary effluent.

Degradation of pharmaceuticals from membrane biological reactor sludge with *Trametes versicolor*

Guillem Llorens-Blanch,* Marina Badia-Fabregat, Daniel Lucas, Sara Rodriguez-Mozaz, Damià Barceló, Taina Pennanen, Gloria Caminal and Paqui Blánquez

Treatment of mbr sludge in a bioslurry system with *Trametes versicolor*.

Determination of phosphite in a full-scale municipal wastewater treatment plant

Xiaolong Yu, Jinju Geng,* Hongqiang Ren, Han Chao and Huimin Qiu

Phosphite (HPO_3^{2-} , +3), a reduced P species in the P biogeochemical cycle, was monitored in a full-scale municipal wastewater treatment plant (MWTP) that uses an anaerobic/anoxic/aerobic-membrane bioreactor (A²/O-MBR) technology for treating mixed wastewater (56% industrial wastewater and 44% domestic wastewater) from June 2013 to May 2014.

Benzotriazole and 5-methylbenzotriazole in recycled water, surface water and dishwashing detergents from Perth, Western Australia: analytical method development and application

M. D. Alotaibi, B. M. Patterson,* A. J. McKinley, A. Y. Reeder and A. J. Furness

A simplified analytical method was developed and used to assess the occurrence of benzotriazole and 5-methyl benzotriazole and removal rates in various Western Australian environmental water samples.

Excess of ^{210}Po activity in the surface urban atmosphere. Part (1) fluctuation of the ^{210}Po excess in the air

Magdalena Długosz-Lisiecka*

The concentrations of ^{210}Pb , ^{210}Bi , and ^{210}Po in the urban atmosphere of Lodz city were measured from February 2010 to May 2010 and from May 2011 to April 2012.

Excess of polonium-210 activity in the surface urban atmosphere. Part 2: origin of ^{210}Po excess

Magdalena Długosz-Lisiecka*

The presence of significant ^{210}Po activity, unsupported by its grandparent radionuclide ^{210}Pb , in the surface atmosphere of industrialized regions can originate from human technical activities.

Formation of disinfection byproducts in a recirculating mariculture system: emerging concerns

Zhimin Qiang,* Haiting Zhang, Huiyu Dong, Craig Adams, Gang Luan and Lei Wang

The formation of various kinds of DBPs in marine aquaria raises serious concerns because of their threat to the health of aquarium animals.

River transport of mercury from artisanal and small-scale gold mining and risks for dietary mercury exposure in Madre de Dios, Peru

Sarah E. Diringer, Beth J. Feingold, Ernesto J. Ortiz, John A. Gallis, Julio M. Araújo-Flores, Axel Berky, William K. Y. Pan* and Heileen Hsu-Kim*

Environmental sampling over 560 km of the Madre de Dios River indicated a gradient of mercury exposure from areas of active mining to downstream communities.

Occurrence of emerging and priority pollutants in municipal reverse osmosis concentrates

Xiaozhu Wei, Ping Gu, Guanghui Zhang* and Jianjun Huang

This paper aimed to investigate the occurrence and concentrations of emerging and priority pollutants in the municipal reverse osmosis concentrate (ROC) using liquid-liquid extraction (LLE) followed by gas chromatography-mass spectrometry.

Comment on "Structural characterization of dissolved organic matter: a review of current techniques for isolation and analysis" by E. C. Minor, M. M. Swenson, B. M. Mattson, and A. R. Oyler, *Environ. Sci.: Processes Impacts*, 2014, 16, 2064

Noel W. Davies,* Sara Sandron, Pavel N. Nesterenko, Brett Paull, Richard Wilson, Paul Haddad, Robert Shellie and Alfonso Rojas

This letter discusses the origins of certain components of dissolved organic matter.

Reply to the Comment on "Structural characterization of dissolved organic matter: a review of current techniques for isolation and analysis" by E. C. Minor, M. M. Swenson, B. M. Mattson, and A. R. Oyler, *Environ. Sci.: Processes Impacts*, 2014, 16, 2064

Elizabeth C. Minor,* Hongyu Li, Alan R. Oyler, Michael M. Swenson and Bruce M. Mattson

This letter discusses interpretations of DOM composition based upon FT-ICR-MS data in van Krevelen diagrams.