



## 2<sup>nd</sup> European Meeting on Environmental Chemistry

Cellier de l'Espace Grévin

December 12-15, 2001

Dijon, FRANCE

### PROGRAM



#### INVITED SPEAKER:

Environmental biomonitoring by instrumental analysis and bioassays.

**Prof. Dr. Antonius KETTRUP**



**ACE** ASSOCIATION of  
CHEMISTRY and the  
ENVIRONMENT

European Association of Chemistry and the Environment

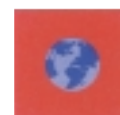
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**WEDNESDAY AFTERNOON**

**17.00-21.00 WELCOME PARTY, POSTER SESSION, EXHIBITION**

## THURSDAY MORNING

### 08.30-09.00 OFFICIAL OPENING

- Eric LICHTFOUSE  
Chairperson, European Association of Chemistry and the Environment (ACE)
- Francis ANDREUX  
Vice-Director, Laboratory of Soil Microbiology and Soil-Water Geochemistry
- Gérard CATROUX  
Director, Laboratory of Soil Microbiology and Soil-Water Geochemistry
- Bernard ITIER  
Head, Department of Agronomy and Environment (INRA)
- Jean-Claude BERNIER  
Director, Chemical Sciences, National Center of Scientific Research (CNRS)
- Christian FOUILLAC  
Scientific Director, Bureau for the Sustainable Management of Natural Resources of the Surface and Subsurface Domains (BRGM)
- Pierre RADANNE  
President, French Agency for Environment and Energy Management (ADEME)
- Bernard LAURIN  
President, University of Burgundy
- François REBSAMEN  
Mayor, Town of Dijon
- Louis de BROISSIA  
Senator, General Council of Côte-d'Or
- Jean-Pierre SOISSON  
President, Burgundy Region

### 09.00-10.30

#### Oral session 01. **AIR POLLUTION - ORGANIC POLLUTANTS**

Chair: Marie-Alexandrine SICRE, Roland KALLENBORN, Sonja LOJEN

- 09.00-09.15** Synthetic musks as new contaminant group in the Norwegian Environment.  
Roland KALLENBORN, Robert GATERMANN, Torgeir NYGÅRD
- 09.15-09.30** Atmospheric pollution from oil shale combustion in Estonia.  
Uuve KIRSO, Erik TEINEMAA, Michael R. STROMMEN, Richard M. KAMENS
- 09.30-09.45** Polycyclic aromatic hydrocarbons (PAHs) in French Alpine valleys.  
Nicolas MARCHAND, Jean-Luc BESOMBES, Pierre MASCLET,  
Jean-Luc JAFFREZO

- 09.45-10.00** The pyrolysis of catechol: characterisation of decomposition products and the formation of polycyclic aromatic hydrocarbons.  
Elmer B. LEDESMA, Nathan D. MARSH, Alyssa K. SANDROWITZ, Mary J. WORNAT
- 10.00-10.15** General reactive transport model for inter-reacting multiple air pollutants in non-conservation system and its application to toluene chemistry in urban areas.  
Koichi IINUMA, Yoshiyuki SATOH, Shunsuke UCHIDA
- 10.15-10.30** The influence of the Kostomuksha factory on the air pollution in Karelia and Finland.  
Albert LEBEDEV, Natalia SINIKOVA, Svetlana NIKOLAEVA, Olga POLIAKOVA, Maria HRUCHSHEVA, Sergey POZDNYAKOV

**10.30-11.00**

**COFFEE BREAK, POSTER SESSIONS, EXHIBITION**

**11.00-13.00**

Oral session 02.

**WATER AND FOOD POLLUTION - ORGANIC POLLUTANTS**

Chair: Georg M. GUEBITZ, Cyril FEIDT, Sylvie DOUSSET

- 11.00-11.15** Enzymatic treatment and recycling of textile effluents.  
Georg M. GUEBITZ
- 11.15-11.30** Risk assessment of polycyclic aromatic hydrocarbons (PAHs) transfer from feed to milk.  
Nathalie GROVA, Cyril FEIDT, Claire LAURENT, Pedro ARRONIZ-RIQUELEME, Guido RYCHEN
- 11.30-11.45** Control of halogenated by-products during surface water potabilisation.  
Eric CHAUVEHEID
- 11.45-12.00** Several ways to treat industrial wastewaters containing aprotic solvents: example of the dimethylsulfoxide.  
Patrick BALDONI-ANREY, Stephan PLISSON -SAUNE, Frederic PERIE
- 12.00-12.15** Quantification of in situ trichloroethene dilution versus biodegradation using a novel chloride concentration technique.  
Claudia WALECKA-HUTCHISON, James L. WALWORTH
- 12.15-12.30** Disappearance of polycyclic aromatic hydrocarbons (PAHs) during anaerobic digestion of naturally contaminated sewage sludges.  
E. TRABLY, N. DELGENES, D. PATUREAU, J. P. DELGENES
- 12.30-12.45** Transformation of carbendazim by UV/H<sub>2</sub>O<sub>2</sub> in aqueous solution.  
Patrick MAZELLIER, Emilie LEROY, Joseph DE LAAT, Bernard. LEGUBE
- 12.45-13.00** UV/H<sub>2</sub>O<sub>2</sub> chemical oxidation for high loaded effluents: application to surfactants in water.  
J. SANZ, J. I. LOMBRAÑA, R. RODRÍGUEZ

**13.00-15.00**

**LUNCH, POSTER SESSIONS, EXHIBITION**

## THURSDAY AFTERNOON

### 15.00-17.00

#### Oral session 03. **SOIL POLLUTION - TOXIC METALS**

Chair: Achim ALBRECHT, Bernard FABRE, Philippe AMIOTTE-SUCHET

- 15.00-15.15** Electrodialytic remediation of different heavy metal polluted soils.  
Lisbeth M. OTTOSEN, Arne VILLUMSEN, Anne J. PEDERSEN, Iben V. KRISTENSEN
- 15.15-15.30** Selection of microorganisms for their ability to bioremediation of agricultural soils contaminated by cadmium.  
Didier BAGOT, Thierry LEBEAU, Karine JEZEQUEL, Bernard FABRE
- 15.30-15.45** Preferential transport of strongly sorbing contaminants in structured soils; field evidence and modeling.  
Achim ALBRECHT, Tiziana CENTOFANTI, Anna FEHLMANN, Hannes FLÜHLER, Emmanuel FROSSARD, Jörg LEUENBERGER, Robin PENFIELD, Hannes WYDLER
- 15.45-16.00** New hydrometallurgical process for zinc and lead recovery from electric arc furnace dust.  
Eric MEUX, Nathalie LECLERC
- 16.00-16.15** Microstructural study of accelerated carbonated soil from a former pyrotechnic plant in S.E. England.  
Colin D HILLS, Kate WHITEHEAD, Cecilia L MACLEOD
- 16.15-16.30** Heavy metal mobilisation in soils covering ore mining dumps.  
Jörg DILLING, Klaus KAISER, Ludwig HAMAIER, Wolfgang ZECH
- 16.30-16.45** Centrifuge measurement of copper and nickel solute transport in London Clay.  
John D. MCKINLEY, Vasilis ANTONIADIS
- 16.45-17.00** Micro-total analytical systems (TAS) systems with electrogenerated chemiluminescence detection for environmental analysis.  
Gillian M. GREENWAY, Paul A. GREENWOOD

### 17.00-17.30

#### **ORANGE JUICE BREAK, POSTER SESSIONS, EXHIBITION**

**17.30-19.30**

Oral session 04.

**ANALYTICAL METHODS FOR ENVIRONMENTAL SCIENCE**

Chair: Philippe SCHMITT-KOPPLIN, Eric LICHTFOUSE

- 17.30-17.45** Manganese-catalysed degradation of phosphonic acids.  
Bernd NOWACK, Alan T. STONE
- 17.45-18.00** On line spectrophotometric method for the monitoring of industrial wastewater discoloration processes.  
Yves COQUE, Evelyne TOURAUD, Olivier THOMAS
- 18.00-18.15** Insights into the measurement of the octanol-water partition coefficient,  $K_{ow}$ , from detailed experiments.  
Keith B. LODGE, David J. EDELBACH
- 18.15-18.30** Examinations on derivatisation and GC/CI/MS detection of selected synthetic and natural endocrine disrupters.  
Oliver LERCH, Peter ZINN
- 18.30-18.45** Measuring free cupric concentrations with diffusion gradient in thin films (DGT): numerical estimation of the labile complexes contribution.  
M.-H. TUSSEAU-VUILLEMIN, J.-L. ROULIER, P. LABADIE
- 18.45-19.00** Comparison of ion chromatography (ISO 14911) with inductively coupled plasma-optical emission spectrometry (ICP-OES, ISO 11885) and continuous flow analysis (CFA, ISO 11732).  
Franz SCHMITZ
- 19.00-19.15** Pesticide residue analysis in foodstuffs; advantages of elevated resolution and exact mass capability.  
Anthony NEWTON, John WILKINS
- 19.15-19.30** Bacteria-degraders based amperometric biosensors for detection of anionic surfactants.  
Anatoly RESHETILOV, Ludmila TARANOVA, Nikolay KORJUK,  
Vyacheslav BORISOV, Pavel ILIASOV

## FRIDAY MORNING

08.15-08.50

### INVITED LECTURE

Environmental biomonitoring by instrumental analysis and bioassays.

**Prof. Dr. Antonius KETTRUP**

Professor for Ecological Chemistry and Environmental Analysis,  
Technical University of Munich, Germany.

08.50-09.00

Next ACE Meetings

- 2002 Geneva, Switzerland, Montserrat FILELLA

- 2003 Plymouth, United Kingdom, Mark FITZSIMONS

09.00-10.30

Oral session 05. **GREEN CHEMISTRY**

Chair: Michele ARESTA, Michel LACROIX, Didier ROBERT

09.00-09.15

Zero emission process for the catalytic transformation of dimethyldisulfide into methylmercaptan.

Michel LACROIX

09.15-09.30

Photocatalytic degradation of humic acids in aqueous solution with illuminated TiO<sub>2</sub>.

Jarek WISZNIEWSKI, Didier ROBERT, Joanna SURMACZ-GORSKA,  
Korneliusz MIKSCH, Jean-Victor WEBER

09.30-09.45

Use of solid catalysts in the reactions of transesterification and etherification of glycerol.

Sébastien BANCQUART, Céline VANHOVE, Jean-Marc CLACENS,  
Yannick POUILLOUX, Joël BARRAULT

09.45-10.00

Carbon dioxide utilization for the synthesis of organic cyclic carbonates under homogeneous and heterogeneous conditions.

Angela DIBENEDETTO, Michele ARESTA

10.00-10.15

Solid base catalysts for the selective synthesis of phytosterols esters.

Yannick POUILLOUX, Gilles COURTOIS, Mickaël BOISSEAU,  
Antoine PICIRILLI, Joël BARRAULT

10.15-11.00

**COFFEE BREAK, POSTER SESSIONS, EXHIBITION**



**11.00-13.00****Oral session 06. ECOTOXICOLOGY**

Chair: Fabrice MARTIN, Matthias EBERIUS

- 11.00-11.15** Duckweed growth inhibition test - Using higher plants and image analysis for sensitive detection of contaminants in water and soil.  
Matthias EBERIUS, Ilka REUTER, Guido MENNICKEN, Ingolf SCHUPHAN
- 11.15-11.30** RecA-lux fiber-optic biosensors to genotoxicants.  
R. S. MARKS
- 11.30-11.45** Phytoplanktonic lipid oxidation products: novel bioindicators of organic matter's quality.  
Daphné MARCHAND, Gérald GREGORI, Jean-Claude MARTY,  
Juan Carlos MIQUEL, Jean-François RONTANI
- 11.45-12.00** Bacterial detection of the toxicity of dioxins, furans, and polychlorobiphenyls.  
Jiho MIN, Man Bock GU, Chi Hoa PHAM, Yoon-Seok CHANG
- 12.00-12.15** Early embryonic cell cycle for risk assessment of pesticides.  
Julie MARC, Odile MULNER-LORILLON, Gaël DURAND, Robert BELLÉ
- 12.15-12.30** Effect of pH on As(III) and As(V) toxicity on luminescent bacteria.  
Elena FULLADOSA, Ana ENRIQUE, Jean Claude MURAT, M. MARTÍNEZ,  
Isabel VILLAESCUSA
- 12.30-12.45** Effects of repeated applications of copper sulfate on the Rhizobium leguminosarum populations.  
Sophie HACHAIR, Gisèle LAGUERRE, Rémi CHAUSSOD
- 12.45-13.00** The LUX-FLUORO test as a bioassay for shedding light on environmental pollutants.  
Petra RETTBERG, Christa BAUMSTARK-KHAN, Elke RABBOW, Angela RODE,  
Gerda HORNECK

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**13.00-15.00****LUNCH, POSTER SESSIONS, EXHIBITION**

## FRIDAY AFTERNOON

### 15.00-17.00

Oral session 07.

#### **STABLE ISOTOPES FOR ENVIRONMENTAL SCIENCE**

*In the memory of Dr. Gareth RIELEY*

Chair: Stephanie DUDD, Jan SCHWARZBAUER, Jean LEVEQUE

- 15.00-15.15** *Introduction to the European Young Researcher of the Year Award.*  
Stephanie DUDD
- 15.15-15.30**  $^{13}\text{C}/^{12}\text{C}$  ratios of individual low-molecular weight organic compounds in river water.  
Jan SCHWARZBAUER, Larissa DSIKOWITZKY GIEREN, Kate FREEMAN,  
Ralf LITKE
- 15.30-15.45** Assuming equal  $^{13}\text{C}$  discrimination during decomposition for  $\text{C}_3$  and  $\text{C}_4$  residues significantly affects replacement calculations.  
Renato ROSCOE, Peter BUURMAN
- 15.45-16.00** Isotope fractionation of organic contaminants, a perspective to characterise microbial in-situ degradation.  
Andrea VIETH, Matthias KÄSTNER, Rainer U. MECKENSTOCK,  
Hans H. RICHNOW
- 16.00-16.15** Cadmium isotopic fractionation in terrestrial materials.  
Christophe INNOCENT
- 16.15-16.30** N, O, C and S isotopes as tracers of agricultural contamination in ground water.  
Laura VITÓRIA, Albert SOLER, Ramón ARAVENA, Àngels CANALS
- 16.30-16.45** Use of stable isotopes to evaluate the origin and fate of chlorinated hydrocarbons in groundwater.  
Daniel HUNKELER, Ramon ARAVENA
- 16.45-17.00** Historical reconstruction of metallic pollution using a geo-ombrogenic peat bog in Eduens Gallic territory (Bibracte, France).  
Cédric BLANCHOT, Jean-Paul GUILLAUMET, Fabrice MONNA, Christophe PETIT,  
Jean LEVEQUE, Isabelle JOUFFROY, Janusz DOMINIK

### 17.00-17.30

**ORANGE JUICE BREAK, POSTER SESSIONS, EXHIBITION**

**17.30-19.30****Oral session 08. WATER POLLUTION - TOXIC METALS**

Chair: Montserrat FILELLA, Jean-Claude BOLLINGER

- 17.30-17.45** Arsenic removal from drinking water: adsorption onto pillared clays.  
Véronique LENOBLE, Omar BOURAS, Véronique DELUCHAT, Bernard SERPAUD,  
Jean-Claude BOLLINGER
- 17.45-18.00** Electrodialytic removal of Cu, Cr and As from treated waste wood.  
Iben V. KRISTENSEN, Lisbeth. M. OTTOSEN, Alexandra RIBEIRO,  
Arne VILUMSEN
- 18.00-18.15** Photocatalytic degradation of sulfonylureas in TiO<sub>2</sub> aqueous suspension.  
Emmanuelle VULLIET, Corinne EMMELIN, Jean-Marc CHOVELON,  
Jean-Marie HERRMANN, Chantal GUILLARD
- 18.15-18.30** Influence of road deposited sediment on trace element concentrations in suspended  
particulate matter in streams of an urban subtropical watershed, Honolulu, Hawaii.  
Eric HEINEN DeCARLO, Vincent L. BELTRAN, Michael S. TOMLINSON
- 18.30-18.45** Bromate study in three water treatment plants.  
S. BOULAND, J.-P. DUGUET, A. MONTIEL
- 18.45-19.00** Silver solubility resulting from acanthite (Ag<sub>2</sub>S) dissolution in dilute KNO<sub>3</sub> is  
reduced by model sulfides and humic acid.  
Astrid R. JACOBSON, Carmen E. MARTINEZ, Matteo SPAGNUOLO,  
Murray B. MCBRIDE, Philippe BAVEYE
- 19.00-19.15** Recycling of waste iron sulfate via synthesis of potassium ferrate.  
Ndue KANARI, Omer EVRARD, Nathalie NEVEUX, Léon NINANE
- 19.15-19.30** Trace element signatures of suspended matter from six major rivers in  
southwest France.  
Jörg SCHÄFER, Gérard BLANC, Gilbert LAVAUX, Cécile BOSSY

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**20.00-23.00****CONFERENCE DINER**

Cellier Sainte-Bénigne, Hostellerie du Chapeau Rouge

## SATURDAY MORNING

**08.30-10.30**

Oral session 09.

### **ANALYTICAL METHODS FOR ENVIRONMENTAL SCIENCE**

Chair: Philippe SCHMITT-KOPPLIN, Francis ANDREUX

- 08.30-08.45** Capillary electrophoresis - electrospray ionization / mass spectrometry of natural organic matter (NOM): a challenge in analytical chemistry.  
Philippe SCHMITT-KOPPLIN, Jens JUNKERS, Mike PERDUE, Norbert HERTKORN, Antonius KETTRUP
- 08.45-09.00** Metalloid speciation for environmental biomonitoring: analytical challenges and new approaches.  
Hendrik EMONS
- 09.00-09.15** Assessment of composts maturity by spectroscopic and thermal analyses.  
Maria Rosaria PROVENZANO, Sandra Cristina de OLIVEIRA, Nicola SENESI
- 09.15-09.30** Detecting endocrine disrupting compounds by fast impedance measurements.  
Vered GRANEK, Judith RISHPON
- 09.30-09.45** Environmental data management: case studies in USA and Europe.  
Michael BROSSE
- 09.45-10.00** A novel technique for optical diagnostics of air pollutants by microwave breakdown spectroscopy.  
Koichi IINUMA, Hiroshi SUTO, Shunsuke UCHIDA, Ken TAKAYAMA
- 10.00-10.15** Biodegradation of 2-substituted benzothiazoles by two strains of Rhodococcus : study by nuclear magnetic resonance (<sup>1</sup>H-NMR).  
Nicolas HAROUNE, Pascale BESSE, Bruno COMBOURIEU, Martine SANCELME, Anne-Marie DELORT
- 10.15-10.30** Multi-component gas analysis with novel infrared detectors.  
Angela J. GRIFFIN, Gillian M. GREENWAY, Anthony D. WALMSLEY, Stephanie HAYWOOD

**10.30-11.00**

### **COFFEE BREAK, POSTER SESSIONS, EXHIBITION**

**11.00-13.00****Oral session 10. SOIL POLLUTION - ORGANIC POLLUTANTS**

Chair: Christian MOUGIN, Mark FITZSIMONS, Guido RYCHEN

- 11.00-11.15** Micro-organic contaminant fluxes in simulated sediment-water columns.  
Nicky WARREN, Ian J. ALLAN, Joy E. CARTER, W. Alan HOUSE, Andrew PARKER
- 11.15-11.30** Investigations of the use ethylene oxide-propylene oxide block copolymeric surfactants for the removal of coal tars from manufactured gas works' soils.  
Jingfeng DONG, Stephen LEHARNE
- 11.30-11.45** Solid state technology for the reductive elimination of polychlorobiphenyls (PCBs) from contaminated soils.  
Michele ARESTA, Tiziano PASTORE
- 11.45-12.00** Physico-chemical behaviour of anionic surfactants in coal tar contaminated soil systems.  
K. HAGENHOFF, S. REID, J. DONG, S. A. LEHARNE
- 12.00-12.15** Biotransformation of nonylphenol surfactants in soils amended with contaminated sewage sludges.  
Christian MOUGIN, Jacqueline DUBROCA, Agathe BRAULT, Albert KOLLMANN, Claude JOLIVALT, Véronique CHAPLAIN
- 12.15-12.30** Use of Fenton's reagent to degrade polycyclic aromatic hydrocarbons in sludge samples.  
Vanina FLOTRON, Ikram MRANI ALAOUI, Alain BERMOND, Valérie CAMEL
- 12.30-12.45** Degradation of phenylurea pesticides under oxidative conditions: influence of the structural factors.  
Sylvie NÉLIEU, Laure Amir TAHMASSEB, Jacques EINHORN
- 12.45-13.00** Pesticide residue analysis of fruit and animal extracts using liquid chromatography-orthogonal acceleration time of flight mass spectrometry (LC-oaTOFMS).  
Ashley B. SAGE, Michael TAYLOR

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**13.00-13.15****2<sup>nd</sup> ACE ENVIRONMENTAL CHEMISTRY AWARD**

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**13.15-13.30****CLOSURE OF THE MEETING**

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## POSTER SESSIONS

### Poster session 01. **AIR POLLUTION - TOXIC METALS**

- 001** Speciation of trace and major elements in coal ash of "Nikola Tesla" power plants (Obrenovac, Yugoslavia).  
Aleksandar POPOVIC, Dragana DJORDJEVIC, Branimir JOVANCICEVIC, Predrag POLIC
- 002** Influence of acidity of extractant on leaching of trace and major elements from coal ash "Kosovo A" power plant in Obilic (Yugoslavia).  
Aleksandar POPOVIC, Dragana DJORDJEVIC, Branimir JOVANCICEVIC, Predrag POLIC
- 003** A clean and cost effective approach for electric arc furnaces dust treatment.  
Devabrata MISHRA, Ndue KANARI, Ibrahim GABALLAH, Rodolfo SOLOZABAL, Alberto UGARTE
- 004** Tree rings microanalysis by energy dispersive X-ray spectroscopy: towards an historical reconstruction of pollution impact on chemical composition of wood.  
Christophe ROSE, Jean-Luc DUPOUEY, Nathalie NINGRE, Marianne PEIFFER, Jean-Pierre GARREC
- 005** Electrodialytic removal of heavy metals from municipal solid waste incineration (MSWI) fly ash.  
Anne Juul PEDERSEN, Lisbeth M. OTTOSEN, Arne VILLUMSEN

### Poster session 02. **AIR POLLUTION - ORGANIC POLLUTANTS**

- 006** Decontamination of fly ash via the dechlorination/degradation of dioxins in subcritical water.  
I. WINDAL, S. HAWTHORNE, E. DE PAUW
- 007** Seasonal variation of organic aerosol in urban Algiers and waste landfill of Algiers city area.  
Nouredine YASSAA, Brahim Youcef MEKLATI, Angelo CECINATO
- 008** Photodegradation of pyrene on solid phase.  
Aurore BOSCHER, Bernard DAVID, Sylvie GUITTONNEAU.
- 009** Incorporation and destocking of dioxin in isolated adipocytes of pigs during the lipogenesis and of the lipolysis.  
P. IRIGARAY, C. FEIDT, G. RYCHEN, F. LAURENT, L. MÉJEAN
- 010** Lipophilicity and hydrogen-bond basicity of nicotine.  
Jérôme GRATON, Christian LAURENCE, Michel BERTHELOT
- 011** Exposure to pesticides during amateur applications of home and garden products.  
Paul HARRINGTON, James MATHERS, Rachel LEWIS, Sonia PEREZ DURAN, Richard GLASS
- 012** Heavy polycyclic aromatic hydrocarbons (PAHs) in the environment of Czech Republic.  
Josef CASLAVSKY, Pavla KOTLARIKOVA
- 013** Towards biological or physico-chemical screening for dioxins?  
G. EPPE, Jean-François FOCANT, Edwin DE PAUW
- 014** Prevention of dioxins de novo formation on sintering process fly ash by using amines compounds.  
Céline XHROUET, Caroline NADIN, Edwin DE PAUW
- 015** Organic petrology in service of environment.  
Bertrand LIGOUIS, Sybille KLEINEIDAM, Rita KIEM, Peter GRATHWOHL, Claudia NIEMZ
- 016** Milk-arterial plasma transfer of dioxins (PCDDs) and furans (PCDFs) in the growing pig (A).  
Claire LAURENT, Guido RYCHEN, Cyril FEIDT, Nathalie GROVA, Paul-Eric LAFARGUE, François LAURENT

- 017** Behaviour of three <sup>14</sup>C-radiolabelled polycyclic aromatic compounds in the presence of an inoculum of mixed rumen bacteria.  
M. SALES-DUVAL, G. BLANCHART, C. FEIDT
- 018** In vitro study of organic micropollutants through intestinal barrier.  
Séverine CAVRET, Cyril FEIDT, Guido RYCHEN, François LAURENT

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Poster session 03. **WATER POLLUTION - TOXIC METALS**

- 019** Elimination of heavy metals in wastewater sludge by incineration in a fluidised bed reactor.  
Seltana BOUNIT, Mohamed EL MERAY, Ahmed CHEHBOUNI, Daniel STEINMETZ, Mehdi HEMATI
- 020** Removal of heavy metals in water by use of roasted coffee beans.  
Mayumi MINAMISAWA, Sugiko NAKAJIMA, Hiroaki MINAMISAWA, Shoichiro YOSHIDA, Nobuharu TAKAI
- 021** Copper fate and mobility in the water column and the surface sediment of a polymictic lake following copper sulfate treatment (Courtille Lake, France).  
Eric Van HULLEBUSCH, Franck AUVRAY, François BORDAS, Véronique DELUCHAT, Philippe CHAZAL, Michel BAUDU
- 022** Heterogeneity and lability aspects of nickel interactions with natural organic matter.  
Montserrat FILELLA, Raewyn M. TOWN
- 023** A study on lead removal from battery manufacturing wastewater using modified cyclodextrins comparatively with barium carbonate.  
Andrée GADELLE, Jean Claude DEBOUZY, Florence FAUVELLE, Bernard MARTEL
- 024** Metal uptake from aqueous solution by olive pits wastes.  
Núria FIOL, Jordi POCH, Joan SERAROLS, Núria MIRALLES, María MARTÍNEZ, Isabel VILLAESCUSA
- 025** Covalent surface confinement of silver thiolate complexes. Pollutant metal uptake application.  
Marie-Joëlle MENU, Y. DARTIGUENAVE, M. DARTIGUENAVE, Letitia M. GRUIA, A. L. BEAUCHAMP
- 026** Environmental chemical study on the marsh of Fatimid cemetery at Aswan city, Egypt.  
M. E. SOLTAN
- 027** Mercurial waste waters treatment using an immobilisation process.  
José María MONTEAGUDO, Jesus FRADES, Miguel A. ALONSO, L. RODRIGUEZ, R. SCHAWB, P. HIGUERAS
- 028** Computer model (MAM-PEC) to predict environmental concentrations of antifoulants.  
Bert VAN HATTUM, Arthur BAART

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Poster session 04. **WATER POLLUTION - ORGANIC POLLUTANTS**

- 029** Depollution of olive mill wastewaters by catalytic hydrogenation. Kinetics of the degradation of a model molecule: tyrosol.  
Dominique RICHARD, Maria de Lourdes DELGADO-NUNEZ
- 030** Trihalomethane formation in ozonated and chlorinated surface water.  
Unai IRIARTE, Jon Iñaki ÁLVAREZ-URIARTE, Rubén LÓPEZ-FONSECA, Juan Ramón GONZÁLEZ-VELASCO
- 031** Decomposition of orange II dye by reduction and oxidation pathways with zero-valent iron.  
Gilles ROY, Jerzy A. MIELCZARSKI
- 032** Optimised management of granular activated carbon filtration step for atrazine and its by-products removal in a drinking water plant.  
Pascal ROCHE, Christelle de TRAVERSAY, H. BUISSON
- 033** Aerobic azo-dye degradation in dyehouse effluents with newly isolated Bacillus sp.  
Juergen MAIER, Andreas PAAR, Georg M. GUEBITZ
- 034** Quantification of the polycyclic aromatic hydrocarbons (PAHs) bioavailable fraction in aquatic environments using semi-permeable membrane device (SPMD).  
Cécile MIÈGE, Corinne NESA, Bernard MIGEON, Raphaël MONS, Jeanne GARRIC

- 035** Expert system of water treatment management.  
Ludmila FROLOVA
- 036** Photochemical degradations of biorecalcitrant ethers: ethyl tert-butyl ether (ETBE), methyl tert-butyl ether (MTBE) and tert-amyl methyl ether (TAME).  
Virginie LE MIGNOT, Meriem BEKRI, Mourad KAROUNE, André PAUSS
- 037** Natural organic matter from surface water (Algeria) extraction-characterisation-coagulation.  
A. AOUABED, S. BOUGUERRA, R. BEN AÏM, D. E. HADJ BOUSSAAD
- 038** Use of organophilic pillared clays for the adsorption of diuron and its degradation products.  
Omar BOURAS, Jean-Claude BOLLINGER, Michel BAUDU, Hussein KHALAF
- 039** Catalytic wet peroxide oxidation of phenol on iron based catalysts.  
J. M. TATIBOUËT, E. GUELOU, A. MAJESTÉ-LABOURDENNE, J. BARRAULT, J. FOURNIER
- 040** Evaluating surfactant modified pillared clays for organic pollutants control.  
Hussein KHALAF, Mohamed HOUARI, Omar BOURAS
- 041** Competitive photodegradation of benzamide and parahydroxybenzoic acid mixture in TiO<sub>2</sub> aqueous solution.  
Antoine PISCOPO, Didier ROBERT, Jean Victor WEBER
- 042** Compared growth of ethyl tert-butyl ether-degrading bacterial consortia in gas and liquid lab-scale fixed bed reactors.  
Meriem BEKRI, Virginie LE MIGNOT, Mourad KHAROUNE, André PAUSS
- 043** Study and comparison of two advanced oxidation processes in the treatment of polluted effluents.  
J. SANZ, J.I. LOMBRANA, A. M. DE LUIS, F. VARONA, M. ORTUETA
- 044** Influence of a co-solvent on the solubilization of organic pollutants (PAHs) included in stabilized/solidified materials.  
Catherine FANTOZZI, Christine de BRAUER, Radu BARNA
- 045** Titanium dioxide photocatalytic degradation of petroleum in water.  
Elene SAMOILOVA, Svetlane BACHAREVA, Maria DEGTJAREVA, Yuri MESHALKIN
- 046** Geochemistry of the Têt River in Southern France: natural controls and anthropogenic impacts.  
Javier GARCIA, Wolfgang LUDWIG
- 047** In situ partition of nonpolar pollutants in river systems.  
Milena FERNANDES, Marie-Alexandrine SICRE, Anne LORRE, Didier PONT
- 048** Degradation of azo dyes in aqueous media by Electro-Fenton process.  
Elodie ZAWLOTZKI, Stéphane TREVIN, Claude LAHITTE, Mehmet OTURAN
- 049** Effect of pH on the elimination of linear alkylbenzene sulphonates (LAS) in water by hydroxyl radicals produced by combination of UV irradiation plus hydrogen peroxide.  
A. MENÉNDEZ, J. I. LOMBRANA, E. VELASCO, F. VARONA
- 050** Trends and main temporal cycles of water temperature, salinity, oxygen concentration and pH in Polar and Atlantic water masses in North Atlantic.  
Leonid CHERNISHOV, Vladimir LAPSHIN
- 051** Study of biodenitrification on cellulosic solid support in presence of 4-ethylphenol.  
Rabaa FDIL, El Kbir LHADI, Jean MORVAN, Laayachi KHAMLICHE
- 052** Photodecomposition of chloroorganic compounds in the aqueous solution in the presence of titania catalysts.  
B. MALINOWSKA, J. WALENDZIEWSKI, D. ROBERT, J. V. WEBER, M. STOLARSKI
- 053** Activation of hydrogen peroxide for the bleaching of the azo dyes.  
Naima CHAHBANE, Dieter LENOIR, Karl-W. SCHRAMM, T. COLLINS, S. SOUABI, H. ALMERDHY, Antonius KETTRUP
- 054** Photodegradation of azarazine.  
Jean-Pierre AGUER, Daté TETEGAN, Bernadette LAVEDRINE, Claire RICHARD
- 055** Acetate in deep peat bog environments - Seasonal variation and implications for methanogenesis.  
Bernd EILRICH, Philipp STEINMANN



- 056** Functional microbial agents for the treatment of malodor of piggery slurry waste.  
Eun Yeol LEE, Eugene KIM, Eun Jung LEE, Choi Hee KIM, Sunghoon PARK
- 057** Monooxygenase-catalyzed cometabolic biodegradation of trichloroethylene.  
Eun Yeol LEE, Hyun-Chul BAE, Eun-Hee SEOL, Hyun-Suk KIM, Sunghoon PARK

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Poster session 05. **SOIL POLLUTION - TOXIC METALS**

- 058** Interactive influence of cadmium and humic acids on wheat: effect on metals acquisition and sequestration related to the production of metal ion ligands.  
Fabienne BARAUD, Teresa W.-M. FAN, Richard M. HIGASHI
- 059** Study of cadmium adsorption on different granulometric fraction of soil.  
Estelle ROTH, Bernard FABRE, Rodrigue HÉE
- 060** Influence of soil copper level, soil organic matter level and soil pH on copper concentration in maize.  
Peggy GUNKEL, Bernard FABRE
- 061** Role of soil components in immobilisation of Mn, Zn and Pb in gray forest soil under the broad-leaved forest.  
Leonid PERELOMOV
- 062** Adsorption-desorption experiments to estimate the relative heavy-metal mobility in soils.  
Jordi SASTRE, Miquel VIDAL, Gemma RAURET
- 063** Dynamics of the interaction of trace elements in contaminated agricultural soils.  
Eva HERNÁNDEZ, Jordi SASTRE, Miquel VIDAL, Gemma RAURET
- 064** Heavy metals in contaminated soils near a wire-drawing factory, Marseille, France.  
Audrey HUMBERT, Yves NOACK
- 065** Forecast estimation of heavy metals values in a soils.  
Tatiana KOROLEVA
- 066** Use of sodium carboxylates for selective precipitation of metallic cations in industrial liquid wastes.  
Franck PENELIAU, Eric MEUX
- 067** In-situ transformation of heavy metal phases in soils.  
Andreas BIRKEFELD, Bernd NOWACK, Rainer SCHULIN
- 068** Preliminary study of cadmium electrodialytic removal from soil.  
M. J. CONCALVES, P. GUNKEL, E. ROTH, B. FABRE
- 069** Simulation of the migration of heavy metals through podzol soils by centrifugation.  
O. ETCHEBERS, C. RIOU, F. CAZAUX, R. LE FANIC, J.-C. CHOSSAT, P. LE COUSTUMER, M. KEDZIOREK, A. BOURG
- 070** Heavy metal speciation in composting process.  
Gillian M GREENWAY, Qi Jun SONG
- 071** Green fluorescent protein expression in a cadmium resistant *Streptomyces* R25 sp. strain.  
Louis M. SIOERIZ, M., T. LEBEAU, M. J. AMOROSO, C. M. ABATE
- 072** Phytoremediation of thallium contaminated soils: effect of binding forms on thallium uptake of Brassicaceae.  
Husam AL-NAJAR, Rudolf SCHULZ, Volker RÖMHELD
- 073** Mercury recovery from soils by phytoextraction.  
Luis RODRIGUEZ, Francisco J. LOPEZ-BELLIDO, Pablo L. HIGUERAS, José M. MONTEAGUDO, Javier CABRERA, Angel CARNICER, Juliana PARRAS, Victoriano ALCALDE-MORANO
- 074** Chromium behaviour in an aquifer under an industrial site.  
Caroline REYNAL, Monika KEDZIOREK, Claire ROLLIN, Alain BOURG
- 075** Heavy metal mobilisation in soil after slurry spreading.  
Anne JAFFREZIC, Gwenaëlle JARRIGE, Yannick FAUVEL

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Poster session 06. **SOIL POLLUTION - ORGANIC POLLUTANTS**

- 076** Net nitrogen mineralisation and nitrification in Alpine soils in the Northern Caucasus.  
Mikhail MAKAROV, Tatiana MALYSHEVA, Alexander VOLKOV, Irina BULATNIKOVA
- 077** Mobility of C-14-alachlor in unsaturated-soils during horizontal infiltration  
H. M. SELIM
- 078** Contaminated soil bioremediation: comparison study of biodegradation rates in stirred and fixed-bed reactors.  
Julien TROQUET, Fabrice POUTIER
- 079** Petroleum biodegradation: mass and chemical composition changes.  
Yury TUROV, Marine GOOZNJAEVA
- 080** Identification of entrapped and covalently bound residues of atrazine using physical and chemical fractionation.  
Ludovic LOISEAU, Enrique BARRIUSO
- 081** Dialysis and sorption studies on the binding of phenolic xenobiotics to dissolved organic matter.  
Andreas HÖLLRIGL-ROSTA, Ralph VINKEN, Markus LENZ, Andreas SCHÄFFER
- 082** Abiotic degradation of the herbicide Rimsulfuron on adsorbed phase.  
Laura SCRANO, Sabino Aurelio BUFO, Corinne EMMELIN, Pierre MEALLIER

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Poster session 07. **SEDIMENT POLLUTION**

- 083** Can riverine cadmium fluxes be predicted from water discharge?  
Stéphane AUDRY, Gérard BLANC
- 084** Role of the Lot River sediments as a sink or a source of coastal pollution.  
Gérard BLANC, Stéphane AUDRY, Jörg SCHÄFER, Gilbert LAVAUX, Cécile BOSSY
- 085** A preliminary study of the geochemical distribution within the Medway estuary, UK.  
Andrew TUCKETT, Cecelia MACLEOD, Jon TAYLOR
- 086** Determination of optimal experimental conditions for the study of the kinetics of the EDTA-trace metals extractions from contaminated sediments.  
David FANGUEIRO, Alain BERMOND, Eduarda SANTOS, Helena CARAPUÇA, Armando DUARTE
- 087** Desorption of dioxin and the organic-carbon normalised partition coefficient, K<sub>oc</sub>.  
Keith B. LODGE
- 088** Occurrence and fate of organic pollutants incorporated into macromolecular organic matter of riverine sediments.  
Jan SCHWARZBAUER, Birgit GIEREN, Mathias RICKING, Ralf LITKE
- 089** Enhanced removal of trichloroethylene from soil and groundwater by substituted cyclodextrins.  
Erwin BUNCEL, Salma SHIRIN, Gary VANLOON

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Poster session 08. **STABLE ISOTOPES FOR ENVIRONMENTAL SCIENCE**

- 090** Downstream geochemical changes in a Tufa depositing Karstic river (Krka, Croatia).  
Sonja LOJEN, Barbara VOKAL, Wolfgang PAPESCH, Goran MIHELICIC
- 091** Environmental impact of aquaculture: a stable isotope study.  
Sonja LOJEN, Alenka MALEJ, Dror ANGEL, Ehud SPANIER, Ioannis KARAKAKIS, Kenny BLACK
- 092** Determination of climatic changes by speleothem analysis.  
Barbara VOKAL, Tadej DOLENEC, Sonja LOJEN, Andrej MIHEVIC, Wolfgang PAPESCH, Dominique GENTY
- 093** Deuterium-depleted water. Romanian achievements and perspectives.  
Ioan STEFANESCU, Irina SAROS-ROGOBETE, Gheorghe TITESCU

- 094** The relationship between kerogens, bitumens and oils revealed by carbon isotope composition in some wells in Pannonian Basin, Croatia.  
Irenka STANKOVIC, Veronika CULJAK
- 095** Fertiliser characterisation: chemical and isotopic (S, N, O, and Sr) constraints.  
Neus OTERO, Laura VITÓRIA, Núria ANTICH, Albert SOLER, Angels CANALS.
- 096** Production and export of dissolved organic carbon (DOC) from an ombrotrophic peat bog.  
Philipp STEINMANN, Bernd EILRICH, Sylvain HUON
- 097** The stable isotopic composition of daily and monthly precipitation in Slovenia.  
Polona VRECA, Sonja LOJEN, Tjasa KANDUC
- 098** A reconstruction of the history of early environmental stress in the Basque country from the geochemical and pollinic signals recorded in a peat bog.  
Fabrice MONNA, Magali TUAL, Didier GALOP, Janusz DOMINIK, Argitxu BEYRIE
- 099** Oxygen 18, deuterium and hydrochemical data as a tool to identify some geological structures as hydrogeological barriers or conduits.  
Alejandra CORTES, J. Alfredo RAMOS, Kevin JOHANNESSON, Alejandro RAMIREZ, Ismael SANDOVAL
- 100** Alterations in chemical composition of thermal and mineral waters as aftermath of an earthquake in Turkey.  
W. BALDERER, F. LEUENBERGER, T. YALCIN, F. SUNER
- 101**  $^2\text{H}$  and  $^{18}\text{O}$  isotopic use as tracers in groundwater of a wide basin under semi-arid climate: case of Souss-Massa, Morocco.  
Lhoussaine BOUCHAOU, Youssef HSISSOU, Mohamed KRIMISSA, Jacques MUDRY

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#### Poster session 09. **GREEN CHEMISTRY**

- 102** Catalytic thiolation of polyols.  
Michel LACROIX
- 103** Regioselective rhodium-catalysed hydroformylation of olefins in supercritical carbon dioxide.  
Jin-Ook BAEG, Dae-Chul PARK, Hee Yeol LEE
- 104** Novel  $\text{SnxCu}_y\text{S}$  semiconductor photocatalysts for photogeneration of hydrogen.  
Dae-Chul PARK, Jin-Ook BAEG, Yang-Jin PARK
- 105** Anaerobic biodegradation of phenols.  
Michele ARESTA, Caterina DILEO, Marcella NARRACCI, Immacolata TOMMASI
- 106** Carbon dioxide as a C1-synthon and solvent: an alternative for green chemistry.  
Danielle BALLIVET-TKATCHENKO, Séverine CAMY, Jean-Stéphane CONDORET
- 107** Solvent-free microwave irradiation of  $\epsilon$ -caprolactone; an interesting route to synthesize polymers via green chemistry procedure.  
Denise BARBIER - BAUDRY, Claire-Hélène BRACHAIS, Adina CRETU, Richard GATTIN, André. LOUPY, Didier STUERG
- 108** Physical and chemical behavior of cements obtained from rice hull ash.  
Flavio Aparecido RODRIGUES, Lucilene BETEGA DE PAIVA

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#### Poster session 10. **ECOTOXICOLOGY**

- 109** Organic material and biogenics elements circulation simulation model in Belarus mires.  
Vyacheslav RYBKA
- 110** The effects of short time exposure of several plant species to ethylene.  
Maria PURZNER, S. ZECHMEISTER-BOLTENSTERN, A. BAUMGARTEN, W. POSTL, H. BOLHAR-NORDENKAMPF

- 111 Optimisation of the uridine uptake inhibition assay for the screening of cytotoxicity.  
Isabelle VALENTIN-SEVERIN, Laurence LAIGNELET, Jean-Claude LHUGUENOT, Marie-Christine CHAGNON
- 112 Toxicity monitoring of field waters in Berlin using the multi-channel continuous toxicity monitoring system.  
Man Bock GU, Byoung Chan KIM, Peter D. HANSEN
- 113 Effects of deuterium-depleted water on reproduction of rainbow trout.  
Ioan STEFANESCU, Irina SAROS-ROGOBETE, Gheorghe TITESCU, Ioan CARAUS, Ferdinand PRICOP
- 114 Deuterium depletion in natural water.  
Gheorghe TITESCU, Irina SAROS-ROGOBETE, Ioan STEFANESCU
- 115 Deuterium-depleted water effects on plants behaviour.  
Gallia BUTNARU, Ioan STEFANESCU, Irina SAROS-ROGOBETE, Gheorghe TITESCU
- 116 Development of environmental toxicity biosensors using genetically-engineered bioluminescent bacteria.  
Man Bock GU
- 117 Bioelectrochemical sensor for the detection of the hepatotoxin microcystin LR.  
Lindy KAHANOVITZ, Tova NEUFELD, Robert S. MARKS, Judith RISHPON
- 118 Relational database of information on potential endocrine disrupters (REDIPED).  
E. D. STUTT, C. A. BOTHAM, B. HARRIS, P. HOLMES
- 119 Effects of two cyanotoxins, microcystin-LR and cylindrospermopsin, on *Euglena gracilis*.  
Evelyne DUVAL, Stéphanie COFFINET, Cécile BERNARD, Joel BRIAND
- 120 Use of a unicellular organism, *Euglena*, as a water pollution marker.  
Joël BRIAND, Xavier BOURRAIN, Evelyne DUVAL
- 121 Assessment of metal toxicity on a human cell line and luminescent bacteria.  
Elena FULLADOSA, Florence, DELMAS, Jean Claude MURAT, Isabel VILLAESCUSA
- 122 Biological assessment of pollutants in water samples from rural and urban origin using the Lux-Fluoro Test.  
Christa BAUMSTARK-KHAN, Petra RETTBERG, Gerda HORNECK
- 123 Impact of a sulfonylurea herbicide on growth of photosynthetic protozoa.  
Tomonori KAWANO, Toshikazu KOSAKA, Hiroshi HOSOYA
- 124 Oxidative burst induced by metal cation stress in tobacco BY-2 cells and mitigation by zinc and manganese ions.  
Nakako KAWANO, Tomonori KAWANO, Frederic LAPEYRIE
- 125 A new bioassay system of chemical substances in environment using green paramecia, *Paramecium bursaria*.  
Miho TANAKA, Hiroshi HOSOYA, Yukiko ISHIZAKA, Hiroaki TOSUJI, Manabu KUNIMOTO, Naohisa NISHIHARA, Toshikazu KOSAKA, Natsumi HOSOYA
- 126 Erika crude petroleum genotoxic impact on fish (*Sola sola*) and relationship with cytochrome P450 1A1 expression.  
Agnès AMAT, Thierry BURGEOT, Annie PFOHL-LESZKOWICZ
- 127 DNA adducts as a biomarker of seasonal contamination by hydrocarbon polycyclic aromatic in mussel digestive gland (*Mytilus galloprovincialis*) in Mediterranean sea.  
Agnès AMAT, Thierry BURGEOT, Annie PFOHL-LESZKOWICZ
- 128 Dutch survey of chlorinated persistent, bioaccumulative and toxic compounds (PBTs) in industrial effluents and other emission sources.  
Bert VAN HATTUM, Marja LAMOREE
- 129 Impedance based biomonitoring of the environmental toxicants.  
Mehran HABIBI-REZAEI, John H. T. LUONG
- 130 Fate of imidacloprid in fields and toxicity for honeybees.  
J. M. BONMATIN, M. E. COLIN, C. FLECHE

Poster session 11. **ANALYTICAL METHODS - ORGANIC POLLUTANTS**

- 131** Determination of ethylenediaminetetraacetic acid (EDTA) in surface water by capillary electrophoresis via large volume sample stacking (LVSS) injection.  
Lifeng ZHANG, Zhiwei ZHU, Marimuthu, ARUN, Zhaoguang YANG
- 132** The comminution of large quantities of wet sediment for chemical analysis.  
Keith B. LODGE
- 133** Pollut-Eval: an innovative analytical tool for direct hydrocarbon assessment in contaminated soils.  
Yves BENOIT
- 134** Determination of the sewage indicator compound, aminoacetone, its environmental lifetime, and its correlation with faecal bacterial indicators in sewage effluent.  
Mark F. FITZSIMONS, Mekibib DAWIT, Aboubakar SAKO, Jennifer JACOBS
- 135** Microwave breakdown spectroscopy (MBS) applied to the detection of halides in air: dual-beam intersection method.  
Hiroshi SUTO, Koichi IINUMA, Shunsuke UCHIDA, Ken TAKAYAMA
- 136** Differentiation of mobile and immobile pesticide on anionic clays by high resolution magic angle spinning nuclear magnetic resonance ( $^1\text{H}$ -HR-MAS-NMR).  
Bruno COMBOURIEU, Jérôme INACIO, Claude FORANO, Anne-Marie DELORT
- 137** Spectroscopic tools for the remote sensing of some greenhouse gases:  $\text{CH}_4$ ,  $\text{CF}_4$ ,  $\text{SF}_6$ ...  
Vincent BOUDON, Jean-Paul CHAMPION, Tony GABARD, Gérard PIERRE, Michel LOETE, Christian WENGER
- 138** Infrared detection of chlorinated hydrocarbons in water at part per billion concentrations.  
Gilles ROY, Jerzy A. MIELCZARSKI
- 139**  $^1\text{H}$  NMR study of the biodegradation of 2-substituted benzothiazoles by Rhodococcus strains.  
Nicolas HAROUNE, Pascale BESSE, Bruno COMBOURIEU, Martine SANCELME, Anne-Marie DELORT
- 140** Adjustment of parameters involved in the detection and the identification of biomarker proteins of pathogenic bacteria by matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry.  
V. RUELLE, M. ZABALLOS, N. BONJEAN, D. ZORZI, B. EI MOUALIJ, E. HEINEN, W. ZORZI, M-C. DE PAUW GILLET, A. FERNANDES, E. DE PAUW
- 141** Analytical potentialities of sensitized room temperature phosphorescence for determination of polycyclic aromatic hydrocarbons.  
Irina GORYACHEVA, Gennady MELNIKOV, Sergei SHTYKOV
- 142** Internal and external heavy atom effect on solid-state room-temperature phosphorescence of polycyclic aromatic hydrocarbons.  
Tatyana RUSANOVA, Gennadiy MELNIKOV, Sergei SHTYKOV
- 143** Multi-channel detection of toxic compounds by microbial sensors.  
Anatoly RESHETILOV
- 144** Interaction of beta-naphthol with humic acid.  
Dounya ELAYADI, Christine de BRAUER, Rémy BAYARD, Rémy GOURDON
- 145** Determination of nicosulfuron and atrazine evolution in mesocosms.  
Sylvie NÉLIEU, Roselyne GUICHON, François PERREAU, Christian BRY, Jacques EINHORN
- 146** Trace analysis of fluorescent substances in groundwater by combined high-performance liquid chromatography (HPLC) luminescence technique.  
Fanny LEUENBERGER, Werner BALDERER
- 147** Analysis of coal tar contamination in soils and water using solid phase microextraction and gas chromatography-mass spectrometry (GC-MS).  
S. REID, S. A. LEHARNE, K. HAGENHOFF, J. DONG

- 148** Rapid extraction of halogenated aromatic compounds by accelerated solvent extraction (ASE) in multi-polluted incinerator furnace bricks.  
Hugues PREUD'HOMME, Martine POTIN-GAUTIER, Jacques BONTE
- 149** Quantification of glycoalkaloids from different genetically modified potatoes by capillary electrophoresis coupled with electrospray ionization ion trap mass spectrometry (CE-ESI/ion trap MS).  
Giuliana BIANCO, Philippe SCHMITT-KOPPLIN, Giuseppe E. DE BENEDETTO, Antonius KETTRUP, Tommaso R. I. CATALDI

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Poster session 12. **ANALYTICAL METHODS - TOXIC METALS**

- 150** Use of diffusion gradient in thin films (DGT) and ultrafiltration methods for copper speciation in river water.  
Jean-louis ROULIER, Pierre LABADIE
- 151** Comparison of three mild extraction procedures used to assess the heavy metal availability in soils.  
Mónica PUEYO, José Fermín LÓPEZ-SÁNCHEZ, Gemma RAURET
- 152** Determination of chromium and copper using cathodic stripping voltammetry with mixed ligands.  
Catherine ELLEOQUET, François QUENTEL, Christian Louis MADEC
- 153** Speciation analysis for organometallic compounds in the environment by gas chromatography with microwave assisted plasma atomic emission spectrometry (MIP AES) and inductively coupled plasma mass spectrometry (ICP MS).  
Brice BOUYSSIERE, Véronique VACCHINA, Ryszard LOBINSKI
- 154** Detection and identification of heavy metal complexes in plants exposed to heavy metal stress.  
Brice BOUYSSIERE, Véronique VACCHINA, Ryszard LOBINSKI
- 155** Direct elemental analysis of aerosols collected on silicone wafer carriers by total-reflection X-ray fluorescence spectrometry.  
Fumitaka ESAKA, Takuji TAGUCHI, Kazuo WATANABE, Masaaki MAGARA, Yukiko HANZAWA, Shigekazu USUDA
- 156** Combining Raman imaging and electron microprobe microanalysis to characterise dusts emitted by a lead and zinc smelter.  
Yann BATONNEAU, Claude BREMARD, Agnès LE MAGUER, Didier LE MAGUER, J. LAUREYNS, J.-C. MERLIN
- 157** Detection of toxic pollution by respirometry in wastewater treatment plants.  
S. Le BONTÉ, M. N. PONS, C. PLANÇON, O. POTIER, A. ALINSAFI, A. BENHAMMOU
- 158** The application of LI-TOF-MS LAMAS.10M for analyzing of geo-sample.  
Alexander A SYSOEV, G. B. KOUZNETSOV, S. S. POTESHIN
- 159** Detection of transition metals in water samples using a sensitised tetracyanoquinodimethane chemiluminescence reaction and flow injection analysis.  
Mario A. YARTO-RAMIREZ, John B. DAWSON, Richard D. SNOOK
- 160** Engineering new metal specificity in the EF-hand motif of calmodulin.  
Loïc LE CLAINCHE, Michel MASELLA, Gilles PELTIER, Claudio VITA
- 161** Comparison of three sequential extraction methods of metals from sandy soils.  
Corinne PARAT, Jean LÉVEQUE, Sylvie DOUSSET, Rémi CHAUSSOD, Francis ANDREUX