

SUMMER SCHOOL ON CONTAMINATED SOILS: From characterization to remediation

Summer school Programme June 18th - 22nd 2012 (Days 1, 2, 3, 4 & 5)

Paris-Est, Champs-
sur-Marne (France)

UNIVERSITÉ
— PARIS-EST



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Institute for Water Education



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Day 1, Monday June 18th: PhD meeting and presentations

Location	Auditorium, IFI Building - Allée du promontoire, Noisy-le-Grand, France
8.30 – 9.00	Registration
9.00 - 9.10	General speech
Chair person: Prof. Ajit ANNACHHATRE (AIT, Thailand)	
Advanced oxidation processes	
9.10 - 9.30	Ling FENG (Erasmus ETeCoS ³): <i>Advanced oxidation processes for eliminating non-steroidal anti-inflammatory drug - ketoprofen</i>
9.30 - 9.50	Flamur SOPAJ (UPE, FR): <i>The influence of anode material on electro-Fenton process efficiency</i>
9.50 - 10.10	Hugo OLVERA VARGAS (Erasmus ETeCoS ³): <i>Studies on the fate of pharmaceuticals in aqueous media: synthesis, characterization and detection of abiotic transformation products using advanced oxidation processes</i>
10.10 - 10.50	Coffee Break
Geomicrobiology and Biohydrometallurgy of wastewater	
10.50 - 11.10	Mirjana VEMIC (Erasmus ETeCoS ³): <i>Biorecovery of Heavy Metals from Mining/Metallurgical Wastes and Metals Biorecovery</i>
11.10 - 11.30	Lucian STAIU (Erasmus ETeCoS ³): <i>Biorecovery of selenium from industrial wastewaters</i>
11.30 - 11.50	Rohan JAIN (Erasmus ETeCoS ³): <i>Biogenic production of selenium nanoparticles</i>
11.50 - 12.10	Marina SEDER COLOMINA (Erasmus ETeCoS ³): <i>Mechanisms of iron biomineralization by neutrophilic bacteria. Influence on inorganic pollutant scavenging</i>
12.10 - 12.30	Nang HTAY YIN (Erasmus ETeCoS ³): <i>Contributions of isotopic techniques to the development of metallurgical tailings bioweathering</i>
12.30 - 14.00	Lunch break
European regulations	
14.00 - 14.40	Dominique DARMENDRAIL (BRGM, France): <i>European regulations concerning contaminated site management and status of the directive for soil protection</i>
Sulfate reducing processes and bioremediation	
14.40 - 15.00	Stefano PAPIRIO (UNICAS, IT): <i>Biological fluidized-bed reactors for the treatment of sulfate- and nitrate-containing mine waters</i>
15.00 - 15.20	Pimluck KIJJANAPANICH (Erasmus ETeCoS ³): <i>Biological Sulfate Reduction for Remediation of Gypsiferous Soils and Wastes</i>
15.20 - 15.40	Suthee JANYSUTHIWONG (Erasmus ETeCoS ³): <i>Biogenic Sulfide Production and Selective Metal Precipitation at low pH for Semiconductor Wastewater Treatment</i>
15.40 - 16.00	Divya BHATIA (Erasmus ETeCoS ³): <i>Characterisation of proteins-like and humic-like substances fraction from biological sludges exopolymeric substances by HPLC-SEC using fluorescence detector</i>
16.00 - 16.20	Joana CASSIDY (Erasmus ETeCoS ³): <i>Anaerobic Oxidation of Methane by Sulfate Reduction</i>
16.20 - 16.50	Coffee Break
Anaerobic bioprocesses (organic waste and wastewater treatment)	
16.50 – 17.10	Flavia LIOTTA (Erasmus ETeCoS ³): <i>The effect of Total Solids, Particle Size Distribution and hydrodynamics in anaerobic digestion of carrots and rice straw</i>
17.10 - 17.30	Wendy MUSSOLINE (Erasmus ETeCoS ³): <i>Optimization of anaerobic digestion of rice straw inoculated with piggery wastewater for farm-scale biogas plants</i>
17.30 – 17.50	Maria Rosaria MATTEI (Erasmus ETeCoS ³): <i>Mathematical modeling of multispecies biofilm for wastewater treatment</i>

Day 2, Tuesday June 19th: PhD meeting and presentations	
Location	Auditorium, IFI Building - Allée du promontoire, Noisy-le-Grand, France
Chair person: Dr. David Huguenot (UPE, FR)	
Anaerobic bioprocesses (organic waste and wastewater treatment)	
8.40 – 9.00	Zhiji DING (Erasmus ETeCoS ³): <i>Treatment of ammonia rich effluents from anaerobic digesters.</i>
9.00 – 9.20	Javkhlan ARIUNBAATAR (Erasmus ETeCoS ³): <i>Pre-treatment Methods To Enhance Anaerobic Digestion of Food Waste.</i>
Biological treatments	
9.20 – 9.40	Mohammad GHANI (Erasmus ETeCoS ³): <i>Evaluation of <i>Dittrichia viscosa</i> (L) Greuter for chelate-assisted phytoextraction of Pb and Zn spiked soil.</i>
9.40 - 10.00	Ana Carolina AGNELLO (Erasmus ETeCoS ³): <i>Biologically-assisted treatment of soils both contaminated with Heavy Metals and Polycyclic Aromatic Hydrocarbons.</i>
10.00 - 10.20	Farah BOUHAMED (ENI Sfax, Tunisia): <i>Vegetative cover for phosphogypsum dumps: a Tunisian field study.</i>
10.20 - 10.40	Angélique COCAIGN (UP 7, FR): <i>Aromatic amine biotransformation by <i>Trichoderma virens</i> and <i>Trichoderma reesei</i>.</i>
10.40 - 11.10	Coffee Break
Physico-chemical treatments	
11.10 - 11.30	Emmanuel MOUSSET (Erasmus ETeCoS ³): <i>Electro-Fenton and anodic oxidation treatments of phenanthrene in the presence of hydroxypropyl-beta-cyclodextrin: biodegradability and toxicity data.</i>
11.30 - 11.50	Rosita GALLO (Erasmus ETeCoS ³): <i>Washing treatment of sediments contaminated with heavy metals and polycyclic aromatic hydrocarbons.</i>
Monitoring	
11.50 – 12.10	Audrey PERNOT (ENSAIA Nancy, FR): <i>Soil structure and organic matter repartition as controlling factors of PAH-type compounds availability in a former industrial soil.</i>
12.10 - 12.30	Isabella ZELANO (IPGP, FR): <i>Nickel (bio)availability in ultramafic systems from Goiás, Brésil: an overlook of the soil compartments.</i>
12.30 - 14.00	Lunch break
Monitoring	
14.00 - 14.20	Zongling REN (IPGP, FR): <i>Interaction of Dissolved Organic Matter with Free metal ions in Heavy Metal Contaminated Soil Solution.</i>
14.20 – 14.40	Fanny COUTELOT (UNI BORDEAUX, FR): <i>Comparison of sampling soil solution techniques to assess metal fluxes to groundwater.</i>
14.40 - 15.00	Thomas WOHLHUTER (ARCADIS, FR): <i>Field development of in situ reactive zone (IRZ) for bioremediation of chromite ore processing residues (COPR) heap.</i>
Modeling and statistics	
15.00 - 15.20	Tran THI THU DUNG (KU Leuven, BE): <i>Copper slag using as abrasive blasting and heavy metal contamination, case study Van Phong bay, Vietnam.</i>
15.20 - 15.40	Anahita POURJABBAR (UNI Cyprus, Cyprus): <i>Statistical Analyses of heavy metal contamination of Ronneburg, a former uranium mine.</i>
15.40 – 16.00	Amadou THIAM (INERIS, FR): <i>A 2-D numerical model with strong coupling of subsurface and indoor air for vapour intrusion: influence of lithologies and concrete properties.</i>
16.00 - 16.30	Coffee Break

Modeling and statistics	
16.30 - 16.50	Wouter VAN DE PUTTE (MAVA, BE): <i>On-site component-specific detection of volatile organic components with the EnISSA-MIP.</i>
16.50 – 17.10	François GARCIN (ARCADIS, FR): <i>Leakage of gasoil - three-dimensional geostatistical study of the extent of pollution, contribution of simulations as part of estimating mass balance.</i>
Risk assessment	
17.10 - 17.30	Jan HAEMERS (TPS Tech, BE): <i>Is risk based land management really sustainable?</i>
17.30 - 17.50	Ileana Codruta STEZAR (UNI Babes-Bolvai, Romania): <i>The role of stakeholder attitudes in managing contaminated sites: Survey of Romanian stakeholder awareness – preliminary results.</i>

Day 3, Wednesday June 20th: Technical visit and Management Assembly	
Location:	Biogénie Europe SAS (Ecosite de Vert-le-Grand) Chemin de Braseux, BP 69, 91540 Echarcon, France
8.00 - 13.15	Technical visit
13.15 - 14.00	Lunch break
Location:	IFI Building
14.00 - 16.00	- Management Assembly of the ETeCoS ³ programme - Social activities for PhD students

Day 4, Thursday June 21st: Regulations and characterization of contaminated soils	
Location:	Auditorium, Copernic Building (Cité Descartes - Champs sur Marne – France)
9.00 - 9.20	Opening and welcoming Prof. Bernard Saint-Girons (UPE Rector) Dr. Eric van Hullebusch (UPE – ETeCoS ³ research director) Prof. Giovanni Esposito (UNICAS – ETeCoS ³ coordinator) Prof. Piet Lens (UNESCO-IHE – ETeCoS ³ education director)
Topic 1: Legislation and Management	
Chair person: Prof. Piet Lens (UNESCO-IHE, NL)	
9.20 - 10.00	Gérard Marceau (ICF Environnement for UPDS, France): <i>Contaminated site management: the French status.</i>
10.00 - 10.40	Drs. Jaap Tuinstra (TCB Soil Protection Technical Committee, the Netherlands): <i>Contaminated soils in the Netherlands: a change in perspective.</i>
10.40 - 11.00	Coffee Break and Poster Session*
11.00 - 11.40	Dr. Laura D'aprile (ISPRA, Italy): <i>Management and legislation on contaminated soils: the Italian situation.</i>
11.40 - 12.20	Bart Callaert (Envisan NV, Belgium): <i>Management of a complex and / or large scale soil remediation projects.</i>
12.20 - 14.00	Lunch break

Topic 2: Characterization	
Chair person: Dr. Eric van Hullebusch (UPE, FR)	
14.00 - 14.40	Dr. Mark Cave (British Geological Survey, UK): <i>Sources, mobility and bioaccessibility of potentially harmful elements in UK soils.</i>
14.40 - 15.20	Dr. Carlo Monti (Exponent International Ltd, Basel, Switzerland): <i>Application of Environmental Forensics in soil contamination.</i>
15.20 – 15.50	Coffee Break and Poster Session*
15.50 - 16.20	Dr. Hans Richnow (UFZ, Leipzig, Germany): <i>Assessment of natural attenuation of halogenated solvents using stable isotope techniques.</i>
16.20 – 17.00	Yves Duclos (ADEME, France): <i>CITYCHLOR – an European integrated approach for the tackling of soil and groundwater pollution with chlorinated solvents in urban environments.</i>
19.00 – 00.15	Social evening dinner

Day 5, Friday June 22nd: Scientific and Technological Developments	
Location:	Auditorium, Copernic Building (Cité Descartes, Champs sur Marne - France)
Topic 3: Physicochemical treatments	
Chair person : Dr. David Huguenot (UPE, FR)	
9.00 - 9.40	Ir. Arnault Perrault (Colas Environnement, Paris, France): <i>In-situ chemical oxidation (ISCO) application for soil remediation.</i>
9.40 - 10.20	Dr. Uwe Hiester (Reconsite, Germany) <i>Thermal treatment: in-situ and ex-situ applications.</i>
10.20 - 10.50	Coffee Break and Poster Session*
10.50 - 11.30	Prof. Massimiliano Fabbricino (University of Napoli Federico II, Naples, Italy): <i>Soil washing: a promising technique for heavy metals removal from contaminated soils.</i>
11.30 - 12.10	Prof. Paul Nathanail (University of Nottingham, UK): <i>Use of iron nanoparticles in soil remediation.</i>
12.10 - 13.50	Lunch break
Topic 4: Biological treatments	
Chair person : Prof. Giovanni Esposito (UNICAS, IT)	
13.50 - 14.30	Dr. Anita Peter (Christian-Albrechts-Universität zu Kiel, Germany): <i>Natural attenuation at petroleum hydrocarbon contaminated sites.</i>
14.30 - 15.10	Dr. David Huguenot (UPE, France): <i>Performance of bioaugmentation-assisted phytoextraction applied to metal contaminated soils: an ecological engineering approach for constructed wetlands.</i>
15.10 - 15.30	Coffee Break and Poster Session*
15.30 - 16.10	Prof. Spiros Agathos (UCL, Belgium): <i>Bioaugmentation as a strategy for in-situ bioremediation: when does it work?</i>
16.10 - 16.50	Dr. Grazia Masciandaro (ISE-CNR, Italy): <i>Synergic action of organic matter-microorganism-plant in soil bioremediation.</i>
16.50 - 17.20	Closing session

***Poster session:** Marie-Charlotte LEROY (INSA Rouen - INFRA Services): *Design of a large scale outdoor mesocosm to investigate heavy metals and polycyclic aromatic hydrocarbons phyto- and bio-remediation*