Research Group on Water, Soil and the Environment (GRESE)

Research Themes:
- Environmental Diagnosis of Emerging Pollutants and Metals
- Wastewater Treatment
- Water Purification Techniques
- Soil Pollution and Hydrogeology
- Depollution Equipment
- Technical Waste Management

Keywords:
- Environmental Chemistry
- Pollution
- Soil Science
- Decontamination
- Metallic Elements
- Environment
- Water Treatment

2012
The Research Group on Water, Soil and the Environment federates 40 permanent teacher-researchers and technicians and 20 doctoral students in the field of Environmental Sciences, which include in particular specialists in analytical chemistry, process engineering, physico-chemistry, solid-state chemistry, pedology, surface geoscience, biology pedology, ecology and botany. Research focuses on two complementary areas:

- liquid phase and solid phase chemical speciation for assessing the transfer conditions of organic and inorganic pollution on the surface of the Earth,
- the development of technological responses and implementation of innovative processes and management modes for treating polluted water and soils.

These themes are addressed from a fundamental viewpoint by studying the mechanisms of genesis, chemical speciation, interactions between phases and degradation of pollutants. A wide variety of mediums are studied including soils, sediments and solid residues, water, plants and purifying biomass.

The GRESE’s research is applied to assessing risks related to point and non-point, metal and organic pollution (mine waste heaps, industrial sites, use of pesticides, etc.) and specific liquid discharges (hospital, urban effluents, etc.). The GRESE also develops processes for treating water and waste and for rehabilitating, upgrading and decontaminating industrial sites.

The GRESE is involved in national and European networks and develops many partnerships with Southern countries and with Eastern European countries where there are major environmental issues. Finally, the GRESE has been partnering for many years with companies, public establishments and institutions in the field of water and waste.
**KEY FIGURES**
(at 1st January 2012)

Teacher-researchers: 28  
Other researchers: 2  
HDR (accredited to direct research): 11  
Doctoral students (2011-2012): 20  
Engineers, technicians: 10  
Administrative agents: 1  
Dissertations defended (2008-2011): 19  
Current national projects: 2 ANR, 1 CASDAR, 1 ANSES and 1 Loire Plan  
Current European projects: 1 INTERREG and 2 FEDER programmes, 1 ERASMUS Doctorate

**ECONOMIC ADDED VALUE**
Industrial or research agreements with major organizations: 8  
Conferences, seminars organized: 3 national and 2 international

**PARTNERSHIPS**

**Active National University Partnerships:**  
Blaise Pascal University (Physiology and Plant Biotechnologies Unit ERTAC), University of Poitiers (UMR CNRS 6008 and 6296), University of Tours (UMR 6113), University of Bordeaux (UMR 5805), University of Amiens (UMR 8157), University of East Paris (EA4508), University of La Rochelle (UMR LIENS), University of Caen (EA3915), University of Lorraine.

**Current International University Partnerships:**  
University of Girona (Spain), Lublin Polytechnic School (Poland), University of Abovey Calavi (Benin) and University of North Carolina-Charlotte (USA) University of Blida (Algeria), Universities of Sfax and Tunis (Tunisia), University of Wageningen (the Netherlands), University of Shanghai (China), INRS ETE (Canada), US Geological Survey Atlanta (Georgia, USA), US Geological Survey at Stanford University and at the University of California-Berkeley, University of Lakehead (Ontario, Canada), Universities of Wroclaw and Krakow (Poland), access to synchrotron radiation at ALS Berkeley (USA), UNESCO IHE (Delf, the Netherlands)

**National Industrial Partnerships:**  
VEOLIA Water, VALDI, FAURE Equipements, SAUR, ICF Environnement

**Partnerships with National Organizations and Institutions:**  
IRSTEA, CSTB, Water Agencies, Loire Public establishment, IFCE

**Scientific Interest Groups (GIS):**  

**Research Groups (GDR):**  
RDR ERICHE – CNRS interdisciplinary network

**Research Federations (RF):**  
GEIST (FR 3503)  
FREDD (FR 3097)
SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/EA4330
Articles: 118 in peer-reviewed journals
Conference presentations: 97

Major publications and or patents over the last 5 years


