**LAURENT DAMBIES, Ph.D**

430 East 72 nd street Apt 6F
New York, NY 10021
Work ( 212) 650-3822
E-mail : ldambies@hunter.cuny.edu
http://www.arsenic.fr.fm

# R&D Product development polymer scientist

## RESEARCH EXPERIENCE

**2001- present** Research Scientist. Department of Chemistry, Hunter College of the City University of New York (New York, USA) .

Project 1 (18 months) : Design of a hybrid cardridge for the removal of arsenic in groundwater
Funded by New York State Energy Research&Development Autority (NYSERDA) and a New York-based private compagny
Design of a new sorption technology for the selective removal of As(V) and As(III) in waters superior to most of commercially available products.

US Patent pending technology (July 2003)

Project 2 (6 months) :Evaluation of polymer supported reagents for the removal of Methyl Ter Butyl Ether in water.

**2000-2001** Research Scientist. Department of Chemistry, University of Tennessee (Knoxville, USA). Synthesis and application to bi-functional resins for the production of ultrapure water (project funded by Pall Corporation).

- Preparation of bi-functional resins (styrene based) for the removal of toxic metals (Cu, Zn, Pb) from dilute (ppm level) and ultra dilute solution (ppb level).

- Analytical methods used : Atomic Absorption spectrometry –ICP-MS - Differential Pulse Anodic Stripping Analysis (Hg plated electrode).

**1997- 2000** Research Assistant. Laboratory of Chemical Industrial Engineering, Ales School of Mines (Ales, FRANCE). Adsorption of arsenic on chemically modified chitosan gel beads. Application to the removal of arsenic in wastewaters.

- Preparation of a new complexing resin for the removal of arsenic in wastewaters

Analytical instruments used : X-Ray Photoelectron Spectroscopy - Electronic microscocopy
ICP-AES

• Collaborations : Laboratoire de Physico-Chimie moléculaire (University of Pau, France), University of Varsaw.

• Enter into a contract with CODELCO Chile, a important mining compagny, by the way of the web page http://www .ema.fr/~ldambies : Sale of 25 liters of beads to use in pilot scale for the removal of arsenic in the plant wastewater.

**1996** Seven month research training period at the Department of Analytical Chemistry, (University of Pau, FRANCE).Subject: Potentiometric study of the surface groups of kaolin clay and study of its interaction with heavy metals.

• Heavy metals analysis in low concentrations (Pb, Cu, Cr, Cd, Ni, Zn) by polarography methods (ASV, DPP, DPASV). Atomic Absorption spectrometry. Experimental practise of the determination of heavy metals speciation in soils.

**August-July 1995** Technician position at the department of Analytical Chemistry, (ELF ATOCHEM, FRANCE).

• Conducted ion chromatography and capillary electrophoresis analysis.

## TUTORING, MANAGEMENT AND AFFILIATIONS

• Responsible of organizing a laboratory moving (quote, set-up) as well as the training of new team members

• Undergraduate and graduate tutoring (France and USA).

• 1998-present : reviewer for the journal *Environmental Science and Technology*

• 2003-present : member of the American Chemical Society

## PUBLICATIONS

• 6 papers published in journals with peer-review committee (*Colloids and Surfaces*, *Water Research Biomacromolecules*, *Separation Science and Technology*. 6 oral communications and posters presented in international symposiums.

## LANGUAGES

French: mother tongue.
English: fluent (3 years in USA)
Spanish: basics

## EDUCATION

| | |
|---|---|
| Ph.D. Chemical Engineering, Ecole des Mines d'Ales, INSA Lyon | 2000 |
| DEA Chemistry and Microbiology, University of Pau, ESIP Poitier | 1996 |
| Maitrise de Chimie, University of Pau. | 1995 |
| Baccalauréat D. | 1991 |

## PUBLICATIONS

### PEER REVIEWED JOURNALS

**DAMBIES, L.** Prospective and existing technologies for the removal of arsenic in water. *Separation Science and Technology*. To be published in 2003.

**DAMBIES. L., VINCENT, T., GUIBAL, E.** Treatment of arsenic-containing solutions using chitosan derivatives : uptake mechanism and sorption performances, *Water Research*, 2002, vol 36, n°15, p 3699-3710.

**DAMBIES., L., VINCENT, T., DOMARD, A., GUIBAL, E.** Preparation of Chitosan gel beads by ionotropic molybdate gelation. *Biomacromolecules,* 2001, vol 2, p 1198-1205.

**DAMBIES, L., GUIMON, C., YIACOUMI, S., GUIBAL, E**. Characterization of metal ion interactions with chitosan by X-ray photoelectron spectroscopy. *Colloids and Surfaces A : Physicochemical and Engineering Aspects*, 2000, vol 177, n°2-3, p 203-214.

**DAMBIES, L., GUIBAL, E., ROZE, A.** As(V) sorption on molybdate-impregnated chitosan beads. *Colloids and Surfaces A : Physicochemical and Engineering Aspects*, 2000, vol 170, n°1, p 19-31.

**GUIBAL, E., DAMBIES, L., MILOT, C., ROUSSY, J.** Influence of polymer structural parameters and experimental conditions on metal anion sorption by chitosan. *Polymer International*,1999, vol 48, n ° 8, p 671-680.

**BOSINCO, S., DAMBIES, L., GUIBAL, E., ROUSSY, J., LE CLOIREC, P.** Removal of Cr VI on chitosan gel beads: kinetics modelling. Advances in Chitin Science, Volume II, DOMARD, A., ROBERTS, G.A.F., VARUM, K.M (editors). Jacques André Publischer, Lyon (France), p. 445-452 (1997).

### ORAL COMMUNICATIONS AND POSTERS

**DAMBIES, L., ROZE, A., GUIBAL, E.** As(V) sorption on molybdate-impregnated chitosan beads. *3 rd Meeting of the European Chitin Society*. Postdam, Germany. 31 Août-3 Septembre 1999 (oral communication).

**BOSINCO, S., DAMBIES, L., GUIBAL, E., ROUSSY, J., LE CLOIREC, P.** Removal of Cr(V)I on chitosan gel beads: kinetics modelling. *7 th International Conference on chitosan . Euchis' 97, European Chitin Society*. Lyon, France. 3-5 Septembre 1997 (oral communication).

**DAMBIES, L., GUIBAL, E.** As(V) removal from dilute solutions using MICB (molybdate-impregnated chitosan beads*). IBS' 99, International Biohydrometallurgy Symposium*, Madrid, Spain, 21-23 Juin 1999 (poster).

**DAMBIES, L., GUIBAL, E., ROUSSY, J., DEGORCE-DUMAS, J.R.** Arsenic sorption on molybdate-impregnated chitosan beads. *IAWQ Conference*, Vancouver. 21-26 Juin 1998 (poster).

**DAMBIES, L. , YIACOUMI, S., GUIBAL, E., GUIMON, C.** Mechanisms of Metal Ion Sorption on Chitosan-Based Sorbents: FTIR and XPS Analyses. *72nd Colloid and Surface Science Symposium*, Pennsylvania State University. 21-24 Juin 1998 (poster).

**DAMBIES, L., ROUSSY, J., GUIBAL, E.** Arsenic sorption on chitosan and its derivated products. *Macromoleculas Habana'97*, Havane,Cuba. 1-5 Décembre 1997 (poster).

### PATENT

*Preparation and Application of an Arsenic-Selective Polymer for Water Treatment*. US patent pending 2003.