

## GREGORY VLADIMIR KORSHIN

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### Academic Background

B.S. (General Physics)	Kazan State University, Kazan, Russia	1976
M.S. (Optics and Spectroscopy)	Kazan State University, Kazan, Russia	1978
Ph.D. (Physical Chemistry)	Kirov State Technological University, Kazan, Russia	1984

### Professional History

Research Scientist, Kirov State Technological University, Kazan, Russia, 1984 - 1987

Senior Research Scientist, Kirov State Technological University, Kazan, Russia, 1987 - 1991

Research Associate, University of Washington, Department of Civil and Environmental Engineering, 1991 - 1998.

Research Assistant Professor, University of Washington, Department of Civil and Environmental Engineering, 1998 - 2000.

Research Associate Professor, University of Washington, Department of Civil and Environmental Engineering, 2000.

Associate Professor, University of Washington, Department of Civil and Environmental Engineering, 2000 to present.

### Selected Recent Publications

Korshin, G.V., A.I.Frenkel, A.L.Ankudinov (2000). XANES study of Cu<sup>2+</sup>-binding sites in aquatic humic substances. *Environmental Science and Technology*, 34 (11): 2138-2142.

Korshin, G.V., J.F.Ferguson, A.N.Lancaster (2000). Influence of natural organic matter on the corrosion of leaded brass in potable water. Behavior of the lead phase. *Corrosion Science*, 42 (1): 53-66.

Chi-Wang Li, M.M. Benjamin, G.V. Korshin (2000). Use of UV spectroscopy to characterize reactions between NOM and free chlorine. *Environmental Science and Technology*, 34 (12): 2570-2575.

Sørensen, M.A., M.M.Stackpoole, A.I.Frenkel, R.K.Bordia, G.V.Korshin, T.H.Christensen (2000). Aging of iron (hydr)oxides by heat treatment and effects on heavy metal binding. *Environmental Science and Technology*, 34 (18): 3991-4000.

Benjamin, M.M., P.Kwan, B.Hansen, G.V.Korshin (2001). Use of iron oxide coated sand to remove strontium from simulated Hanford tank wastes. *Environmental Science and Technology*, 35 (24): 4905-4909.

Korshin, G.V., M.D.Jensen (2001). Electrochemical reduction of haloacetic acids and exploration of their removal by electrochemical treatment. *Electrochimica Acta*, 47 (5): 747-751

Korshin, G.V., M.M.Benjamin, Hong-Bin Xiao (2001). Interactions of chlorine with natural organic matter and formation of intermediates: Evidence by differential spectroscopy. *Acta Hydrochimica et Hydrobiologica* 28 (7): 378-384.

Wells Wu, M.M.Benjamin, G.V.Korshin (2001). Effects of thermal treatment on halogenated disinfection by-products in drinking water. *Water Research*, 35 (15): 3545-3550.

Frenkel A.I., G.V.Korshin (2001). Studies of humic substances and metal-humic complexes by X-Ray Absorption Spectroscopy: current state and future prospects. *Canadian Journal of Soil Sciences*, 81 (3): 271-276.

Li, Chi-Wang, G.V.Korshin (2002). Studies of metal-binding sites in natural organic matter and their role in the generation of disinfection by-products using lanthanide ion probes. *Chemosphere*, 49 (6): 631-638.

Li, Chi-Wang, M.M.Benjamin, G.V.Korshin (2002). The relationship between TOX formation and spectral changes accompanying chlorination of pre-concentrated or fractionated NOM. *Water Research*, 36 (13): 3265-3272

Korshin, G.V., Wells Wu, M.M.Benjamin, O.Hemingway (2002). Correlations between differential absorbance and the formation of individual DBP species. *Water Research*, 36 (13): 3273-3282.

Lu, Junhe, M.M.Benjamin, G.V.Korshin, H.Gallard (2004). Reactions of the flavonoid hesperetin with chlorine: Mass-spectroscopic studies and spectrophotometric of the reaction pathways. *Environmental Science and Technology*, 38 (17): 4603-4611.

Kuznetsov, An.M., E.D.German, A.N.Masliy, G.V.Korshin (2004). A density functional study of dissociative electron transfer reactions with participation of halogenated methanes *Journal of Electroanalytical Chemistry*, 573 (2): 315-325.

Korshin, G.V., M.Fabbricino (2005). Probing the mechanisms of NOM chlorination using fluorescence: formation of disinfection by-products in Alento River water. *Water Science and Technology: Water Supply*, 4 (4): 227-233.

Fabbricino, M., and G.V.Korshin (2004). Disinfection by-products formation and applicability of differential absorbance spectroscopy to monitor halogenation in chlorinated coastal and deep ocean seawater. *Desalination*, 176 (1): 57-69.

Korshin, G.V., J.F.Ferguson, A.N.Lancaster (2005). Influence of natural organic matter on the properties of corroding lead surface and behavior of lead-containing particles. *Water Research*, 39 (12): 2527-2534.

Korshin, G.V., Jaeshin Kim, A.B.Velichenko (2005). Comparative study of electrochemical degradation and ozonation of nonylphenol. *Water Research*, 39 (12): 2527-2534.

Korshin, G.V., Jaeshin Kim, A.B.Velichenko, A.I.Frenkel (2005). Electrochemical and XAFS study of effects of carbonate in oxidation of arsenite. *Environmental Science and Technology*, in press.

Korshin, G.V., Jaeshin Kim, Lili Gan (2005). Comparative study of reactions of endocrine disruptors bisphenol A and diethylstilbestrol in electrochemical treatment and chlorination. Accepted for publication in *Water Research*.

Chang, H.S., G.V.Korshin, Zheming Wang, J.M.Zachara (2005). Adsorption of uranyl on gibbsite: a time-resolved laser-induced fluorescence spectroscopy (TRLIFS) study. Accepted for publication in *Environmental Science and Technology*

## **Selected Monographs**

Korshin, G.V., J.F.Ferguson, A.N.Lancaster, Hao Wu (1999). *Corrosion and Metal Release from Lead-Containing Materials: Influence of Natural Organic Matter and Corrosion Mitigation* AWWA Research Foundation and American Water Works Association. Denver, CO.

Croué, J.-P., G.V.Korshin, J.A.Leenheer, M.M.Benjamin (2000). *Isolation, Fractionation and Characterization of Natural Organic Matter in Drinking Water*. AWWA Research Foundation and American Water Works Association, Denver, CO.

Korshin, G.V., M.M.Benjamin, O.Hemingway, Wells Wu (2002). *Development of Differential UV Spectroscopy for On-line DBP Monitoring*. AWWA Research Foundation and American Water Works Association, Denver, CO.

Kirmeyer, G., B.Murphy, A.Sandvik, G.V.Korshin, B.Shaha, M.Fabbricino and G.Burlingame (2004). *Post-Optimization Lead and Copper Control Monitoring Strategies*. AWWA Research Foundation, Denver, CO.

Korshin, G.V., M.M.Benjamin, and H.S.Chang (2004). *Modeling Disinfection By-Products Formation Kinetics: Mechanistic and Spectroscopic Approaches*. AWWA Research Foundation, Denver, CO.

Korshin, G.V., Jaeshin Kim, A.B.Velichenko (2004). *Development of an Electrochemical System for Arsenite Oxidation in Drinking Water*. AWWA Research Foundation, Denver, CO.

## **Ongoing Projects**

Fundamental Mechanisms of Lead Oxidation: Effects of Chlorine, Chloramine and Natural Organic Matter on Lead Release in Drinking Water (National Science Foundation)

Mechanisms of Accumulation of Inorganic Contaminants and Radionuclides in Drinking Water Distribution Systems (Awwa Research Foundation)

Characterization of Natural Organic Matter (NOM) in Washington, D.C. Drinking Water (U.S. Environmental Protection Agency)

Methods for the Detection of Residual Concentrations of Hydrogen Peroxide in Advanced Oxidation Processes (WateReuse Federation)

Degradation of Organic Species and Removal of Radionuclides by Permanganate Oxidation of Hanford Tank Wastes (Department of Energy)

Characterization of Adsorbate-Adsorbent Interactions by Time-Resolved Laser-Induced Fluorescence Spectroscopy (Department of Energy)

## **Professional Society Membership**

Association of Environmental Engineering and Science Professors (2000-present)

American Chemical Society (1995-present)

American Water Works Association (1996-present)

International Humic Substances Society (1996-present)

International Water Association (2004-present)

International X-Ray Absorption Spectroscopy Society (1998-present)