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Educational History

Ph.D.	Kirov State Technological University, Kazan, Russia	1984
M.S.	Kazan State University, Kazan, Russia	1978
B.S.	Kazan State University, Kazan, Russia	1976

Employment History

Visiting Professor, Peking University, Beijing, China August 2013 - September 2015
Visiting Professor, University of Catania, Italy, December 2014-May 2015
Member of the Italian National Agency for the Evaluation of Universities and Research (ANVUR), January 2013–December 2014
Project Co-Director, Kazan National Research Technological University, November 2012–2013.
Visiting Professor, University of South Australia, Adelaide, Australia, July –September 2012
Invited Professor, Université de Paris VII Diderot, Paris-France, June-July 2012 (deferred)
Editor, International Journal *Water Research*, January 2010-present.
Professor, University of Washington, Department of Civil and Environmental Engineering, September 2007-present.
Visiting Professor, Australian Water Quality Centre, Adelaide, Australia, July-September 2010
Adjunct Professor, State Key Laboratory of Environmental Aquatic Chemistry, Research Center for Eco-Environmental Sciences, the Chinese Academy of Sciences, July 2009-present
Invited Professor, Université de Paris VII Diderot, Geochimie des Eaux, January 2008 to July 2008.
Invited Research Fellow, Australian Water Quality Centre, Adelaide, Australia, September - December 2007
Associate Professor, University of Washington, Department of Civil and Environmental Engineering, July 2003 to September 2007.
Research Fellow, Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory, July 2003-September 2003
Associate Professor WOT, University of Washington, Department of Civil and Environmental Engineering, September 2000 to July 2003.

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

Visiting Research Professor, Université de Poitiers, Poitiers, France, June 1999 to September 1999

Research Assistant Professor, University of Washington, Department of Civil and Environmental Engineering, March 1998 to July 2000.

Research Associate, University of Washington, Department of Civil and Environmental Engineering, June 1993 to March 1998.

Visiting Scientist, University of Washington, Department of Civil and Environmental Engineering, August 1991 to June 1993.

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

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

Awards and Honors

Fulbright U.S./Italy Scholarship award, March 2014

Distinguished Foreign Expert Award of Peking University/Chinese Ministry of Education, August 2013

Senior International Visiting Professorship with the Chinese Academy of Science, 2012

Visiting Professorship at Nanjing Agricultural University, 2012

Australian International Center of Excellence in Water Resource Management Visiting Scholar Award, September 2011

Best poster presentation at Pacific Northwest Section of American Water Works Association, Tacoma, WA, May 2010 (jointly with Ching-Yu Peng, Andrew Hill, Melinda Friedman and Steve Reiber)

Fulbright Foreign U.S./Brazil Scholarship award, July 2009

Environmental Science and Technology Excellence in Review Award, July 2009

Fresh Ideas Best poster presentation at Annual Conference of American Water Works Association, San Diego, CA June 2009 (jointly with Haizhou Liu and John Ferguson)

Best poster presentation at Pacific Northwest Section of American Water Works Association, Salem, OR, May 2009 (jointly with Haizhou Liu and John Ferguson)

Best poster presentation at NOM2008 conference of International Water Association, Bath, United Kingdom, September 2008 (jointly with Paolo Roccaro, University of Catania)

Institut de Physique du Globe de Paris Invited Professor Award, 2008

Australian International Center of Excellence in Water Resource Management Visiting Scholar Award, 2007

Summer Research Institute (SRI) Fellowship in Interfacial and Condensed Phase Chemical Physics, Pacific Northwest National Laboratory, 2004 (declined).

Environmental Molecular Science Laboratory (EMSL) Fellowship, Pacific Northwest National Laboratory, 2003.

Visiting Scholar Award, Region Poitou-Charente, France, 1999

Award of Association of Environmental Engineering Professors for Advising of the Best

Doctoral Thesis, October 1999 (jointly with M.M.Benjamin)

Best poster presentation at the Annual Conference of the American Water Works Association, Atlanta, GA, 1997(jointly with HDR Engineering Inc).

Best presentation at the Annual Conference of the American Water Works Association, New York, 1994.

Best presentation at the All-Union Conference on Physical Chemistry, Moscow, 1982.

State Scholarship at the Kazan State University for academic achievements, 1976-1978.

Publications

Manuscripts in press

Roccaro, P, F.G.A.Vagliasindi, G.V.Korshin (2015). Bromination and Chlorination of NOM: New Modeling Approaches and Mechanistic Insights. Occurrence, Formation, Health Effects and Control of Disinfection By-Products in Drinking Water. Chapter 12. T. Karanfil, P. Westerhoff, Y. Xie, Eds. ACS Symposium Series, American Chemical Society, Washington DC, in press.

Manuscripts in review

Massimiliano Sgroi, Roccaro, P., Korshin, G.V., Greco, V., Sciuto, S., Anumol, T., Snyder, S.A., Vagliasindi, F.G.A. (2016) Use of fluorescence EEM as a tool for monitoring the removal of emerging contaminants in full scale wastewater treatment plants. Submitted to the *Journal of Hazardous Materials*.

Mingquan Yan, Li, Mingyang, P.Roccaro and G.V.Korshin (2016) Ternary Model of the Speciation of I/Br/Cl- Trihalomethanes Formed in Chloraminated Surface Waters. Submitted to *Environmental Science and Technology*.

Yan, Mingquan, P.Roccaro, M.Fabbricino, G.V.Korshin (2016) Comparison of the Effects of Chloramine and Chlorine on the Aromaticity of Dissolved Organic Matter and Yields of Disinfection By-Products. *Water Research*, in revision.

Refereed Archival Journal Publications

Mingquan Yan, D.Dryer, G.V.Korshin (2016). Spectroscopic Characterization of Changes of DOM Deprotonation-protonation Properties in Water Treatment Processes. *Chemosphere*, 427: 426-435.

Weil Li, V. Nanaboina, Fang Chen, G.V. Korshin (2016) Removal of Polycyclic Synthetic Musks and Antineoplastic Drugs in Ozonated Wastewater: Quantitation Based on the Data of Differential Spectroscopy. *Journal of Hazardous Materials*, 304: 242-250.

Jing, Ma, Mingquan Yan, An.M.Kuznetsov, A.N.Masliy, Guodong Ji, G.V.Korshin (2015) Rotating Ring-Disk Electrode and Quantum Chemical Study of the Electrochemical Reduction of Monoiodoacetic Acid and Iodoform. *Environmental Science and Technology*, 49 (22), 13542-13549 (DOI: 10.1021/acs.est.5b03951).

Yan, Mingquan, Yujuan Lu, Yuan Gao, Marc Benedetti, G.V.Korshin (2015). In-Situ Investigation of Interactions between Magnesium Ion and Natural Organic Matter. *Environmental Science & Technology*, 49 (14): 8323-8329 (DOI: 10.1021/acs.est.5b00003).

Roccaro, P, M.Yan, G.V.Korshin (2015) Use of Log-Transformed Absorbance Spectra for Online Monitoring of the Reactivity of Natural Organic Matter. *Water Research*, 84: 136-143

(DOI: 10.1016/j.watres.2015.07.029).

Yan, Mingquan, Y.Gao, G.V.Korshin (2015). Effects of Calcium on the Chromophores of Dissolved Organic Matter and Their Interactions with Copper. *Water Research* 81: 47-53.

Gao, Yuan, Mingquan Yan, G.V.Korshin (2015). Effects of Ionic Strength on the Chromophores of Dissolved Organic Matter. *Environmental Science & Technology*, 49 (10), 5905-5912.

Chen, Liu , X.Tang, J.Kim, G.V.Korshin (2015) Formation of Aldehydes and Carboxylic Acids in Ozonated Surface Water and Wastewater: A Clear Relationship with Fluorescence Changes. *Chemosphere*, 125: 182-190.

He, Sixuan, Mingquan Yan, G.V.Korshin (2015) Spectroscopic Examination Effects of Iodide on the Chloramination of Natural Organic Matter. *Water Research*, 70, 449-457.

Wei, Li, J.Tanumihardja, T.Masuyama, G.V.Korshin (2015) Examination of the Kinetics of Degradation of the Antineoplastic Drug 5-Fluorouracil by Chlorine and Bromine. *Journal of Hazardous Materials*, 282, 125-132 (<http://dx.doi.org/10.1016/j.jhazmat.2014.05.090>).

Chen, Yao, M.Fabbricino, G.V.Korshin (2015) Spectroscopic *In Situ* Examination of Interactions of Rare Earth Ions with Humic Substances. *Water Research*, 68, 273-281.

Velichenko, A.B., L.V.Dmitrikova, S.D.Kopteva, G.V.Korshin, N.O.Chuvasova (2014) Electrochemical Degradation of Methyl Tert-Butyl Ether. *Bulletin of Dnipropetrovsk University. Chemistry Series*, 22 (1), 1-7.

Fabbricino, M., G.V.Korshin (2014) Changes of the corrosion potential of iron in stagnation and flow conditions and their relationships with metal release. *Water Research*, 62, 136-146.

Roccaro, P., C.W.Chow, M.Drikas, G.V.Korshin (2014) Effects of pH on the Speciation Coefficients in Models of Bromide Influence on the Formation of Trihalomethanes and Haloacetic Acids. *Water Research* 62, 117-126.

Yan, Mingquan and G.V.Korshin (2014) Comparative Examination of Effects of Binding of Different Metals on Chromophores of Dissolved Organic Matter. *Environmental Science and Technology* 48 (6), 3177-3185 .

Yan, M., G.V.Korshin, F.Claret, J.P.Croué, M.Fabbricino, H.Gallard, T.Schäfer, M.F. Benedetti (2014) Effects of Protonation Charging on the Chromophores of Dissolved Organic Matter from the Rio Negro Basin. *Water Research* 59, 154-164.

Byrne, A.J., T.Brisset, C.W.K.Chow, J.Lucas, G.V.Korshin (2014) Development of Spectroscopic On-line Surrogate Parameters for Water Treatment Plant Optimisation. *Journal of Australian Water Association*, April, 94-100.

Shapnik, A.M., T.P.Petrova, G.V.Korshin and B.S.Baltser (2013) Electrochemical behavior of the Pb(II)/PbO₂ redox couple based on the data of cyclic voltammetry. *Bulletin of Kazan Technological University* (in Russian).

P. Roccaro, F.Vagliasindi, G.V.Korshin (2014) Relationships between trihalomethanes, haloacetic acids and haloacetonitriles formed by the chlorination of raw, treated and fractionated surface waters. *Journal of Water Supply: Research and Technology – AQUA*, 63 (1), 21-30 (doi:10.2166/aqua.2013.066).

Yan, Mingquan, G.V.Korshin, Hyun-Shik Chang (2014) Examination of Disinfection By-Products (DBPs) Formation in Source Waters: A Study Using Log-Transformed Differential Spectra. *Water Research*, 50, 179-188 (<http://dx.doi.org/10.1016/j.watres.2013.11.028>)

- P. Roccaro, H.S.Chang, F.Vagliasindi, G.V.Korshin (2013) Modeling of the formation of dihaloacetonitriles based on kinetic and speciation data. *Water Research*, 47 (16), 5995-6006 (<http://dx.doi.org/10.1016/j.watres.2013.07.018>).
- Yan, Y., D.Wang, M.F.Benedetti, G.V.Korshin (2013). Study of Iron and Aluminum Binding to Suwannee River Fulvic Acid Using Absorbance and Fluorescence Spectroscopy: Comparison of Data Interpretation based on NICA-Donnan and Stockholm Humic Models. *Water Research*, 47 (14), 5439-5436 (<http://dx.doi.org/10.1016/j.watres.2013.06.022>).
- Gao, Y, G.V.Korshin (2013) Effects of NOM properties on copper release from model solid phases. *Water Research*, 47 (14), 4843-4852 (<http://dx.doi.org/10.1016/j.watres.2013.04.055>).
- Peng, C.Y, G.V.Korshin (2013) Effects of chloride, sulfate and NOM on iron corrosion, accumulation and release of inorganic contaminants with/from corroded iron. *Water Research*, 47 (14), 5257-5269 (<http://dx.doi.org/10.1016/j.watres.2013.06.004>).
- Liu, H., C.Y.Peng, K.D.Schoenberger, J.F.Ferguson, E.Desormeaux, H.Luckenbach, P.Meyerhoffer, G.V.Korshin (2013) Impacts of Blending Desalinated Water with Conventionally Treated Surface Water on Iron Corrosion and Release Processes. *Water Research*, 47 (11), 3817-3826 (<http://dx.doi.org/10.1016/j.watres.2013.03.052>)
- Tverdov, I.D., T.N.Grishaeva, A.N.Masliy, An.M.Kuznetsov, G.V.Korshin (2013). Quantum-chemical investigation of the catalytic effect of carbonate-ion on the oxidation of arsenite by hydroxyl radical. *Bulletin of Kazan Technological University*, 16 (4), 58-63 (in Russian).
- Yan, Mingquan, D.S.Wang, M.Benedetti G.V.Korshin, (2013) Quantifying metal ions binding onto dissolved organic matter using log-transformed absorbance spectra. *Water Research*, 47 (7), 2603-2611 (<http://dx.doi.org/10.1016/j.watres.2013.02.044>).
- Wei, Li, V.Nanaboina, Q.Zhou, G.V.Korshin (2013) *In situ* quantitation of exposures to hydroxyl radicals and formation of representative products of oxidation of effluent organic matter by Fenton- and Fenton-like oxidations via analysis of 3D excitation-emission matrixes of treated wastewater. *Journal of Hazardous Materials*, 244-245, 698-708 (<http://dx.doi.org/10.1016/j.jhazmat.2012.10.064>)
- Yan, Mingquan, D.J.Dryer, M.Benedetti G.V.Korshin, (2013) *In Situ* Study of Binding of Copper by Fulvic Acid: Comparison of Differential Absorbance Data and Model Predictions. *Water Research*, 47 (2), 588-596 (<http://dx.doi.org/10.1016/j.watres.2012.10.020>)
- Busygina. A.I., T.N.Grishaeva, A.N.Masliy, An.M.Kuznetsov, G/V.Korshin (2012). Quantum-chemical study of the mechanism of oxidation of arsenite by hydroxyl radicals. *Bulletin of Kazan Technological University*, 15 (22), 22-27 (in Russian).
- A.N.Masliy, An.M.Kuznetsov, G/V.Korshin (2012). Quantum-chemical investigation of complexation in the system $H_3AsO_3-CO_3^{2-}/HCO_3^- -H_2O$. *Bulletin of Kazan Technological University*, 15 (15), 7-11 (in Russian).
- Gerrity, D.; S.Gamage; D.Jones; G.V.Korshin; Yunho Li; A.Pisarenko; R.A.Trenholm; U. Von Gunten; E.Wert; S.A.Snyder (2012) Development of surrogate correlation models to predict trace organic contaminant oxidation during ozonation. *Water Research*, 46 (19), 6257-6272. (<http://dx.doi.org/10.1016/j.watres.2012.08.037>)
- Chen, Liu, V.Nanaboina, G.V.Korshin (2012) Formation of degradation products of fluoroquinolone antibiotics in ozonated water and their modeling based on in situ absorbance monitoring data. *Water Research*, 46 (16), 5235-5246.

- Yan, Mingquan; Korshin, G.V; Wang, Dongsheng; Cai, Zhenxiao (2012) Characterization of dissolved organic matter using high-performance liquid chromatography (HPLC)–size exclusion chromatography (SEC) with a multiple wavelength absorbance detector. *Chemosphere*, 87(8), 872-878 (doi:10.1016/j.chemosphere.2012.01.029)
- Peng, C.Y., G.V.Korshin, R.L.Valentine, A.S.Hill, M.J.Friedman, S.H.Reiber (2012) Occurrence of Trace Inorganic Contaminants in Corrosion Scales and Deposits formed in Drinking Water Distribution Systems. *Journal of American Water Works Association*, 104 (3), E181-E193, <http://dx.doi.org/10.5942/jawwa.2012.104.0042>.
- Boyd, G.R., S.H.Reiber, M.S.McFadden, G.V.Korshin (2012) Galvanic Coupling Effects with Changing Water Quality. *Journal of American Water Works Association*, 104 (3), E136-E149, <http://dx.doi.org/10.5942/jawwa.2012.104.0038>.
- Liu, Haizhou, An.M. Kuznetsov, A.N.Masliy, J.F.Ferguson, G.V.Korshin (2012) Formation of Pb(III) Intermediates in the Electrochemically Controlled Pb(II)/PbO₂ System. *Environmental Science and Technology*, 46 (3), 1430-1438 (<http://pubs.acs.org/doi/abs/10.1021/es203084n>).
- Wei, Li, V.Nanaboina, Q. Zhou, G.V.Korshin (2012). Degradation of Pharmaceuticals and Personal Care Products (PPCPs) in Secondary Wastewater by Fenton Process. *Water Research*, 46 (2), 403-412 (doi:10.1016/j.watres.2011.11.002).
- Chen, Liu, V.Nanaboina, W.Jiang, G.V.Korshin (2012) Spectroscopic study of the degradation of antibiotics and the generation of representative EfOM oxidation products in ozonated wastewater. *Chemosphere* 86 (8), 774-782 (<http://dx.doi.org/10.1016/j.chemosphere.2011.11.003>).
- Peng, C.Y., G.V.Korshin (2011). Speciation of trace inorganic contaminants in the corrosion scales and deposits formed in the drinking water distribution systems. *Water Research*, 45 (17), 5553-5563, doi:10.1016/j.watres.2011.08.017.
- Roccaro, P., F.Vagliasindi, G.V.Korshin (2010) Quantifying the formation of N-containing DBPs in chlorinated water using absorbance and fluorescence indexes. *Water Science and Technology*, 63 (1), 40-46.
- Peng, C.Y., G.V.Korshin, R.L.Valentine, A.S.Hill, M.J.Friedman, S.H.Reiber (2010) Characterization of Elemental and Structural Composition of Corrosion Scales and Deposits Formed in Drinking Water Distribution Systems. *Water Research*, 44 (15), 4570-4580.
- Hill, A.S., M.J.Friedman, S.H.Reiber, G.V.Korshin, R.L.Valentine (2010) Behavior of trace inorganic contaminants in drinking water distribution systems. *Journal of American Water Works Association*, 102 (7), 107-118.
- Janot, N, P.E.Reiller, G.V.Korshin, M.F.Benedetti (2010) Using spectrophotometric titrations to characterize humic acid reactivity at environmental concentration. *Environmental Science and Technology*, 44 (17), 6782–6788.
- Nanaboina, V., G.V.Korshin (2010) Evolution of Absorbance Spectra of Ozonated Wastewater and Its Relationships with the Degradation of Trace-Level Organic Species. *Environmental Science and Technology*, 44 (16), 6130–6137.
- Liu, H., K.D.Schonberger, G.V.Korshin, J.F.Ferguson, P.Meyerhofer, E.Desormeaux, H.Luckenbach (2010) Effects of Blending of Desalinated Water with Treated Surface Drinking Water on Copper and Lead Release. *Water Research*, 44 (14), 4057-4066.
- Liu, S., M.Lim, R.Fabris, G.V.Korshin, R.Amal, C.W.K.Chow, M.Drikas (2010) Multi-wavelength spectroscopic and chromatography study on the photocatalytic oxidation of natural organic

matter. *Water Research*, 44 (8), 2525-2532.

Fabbricino, M., G.V. Korshin (2009) Modelling disinfection by-products formation in bromide-containing waters. *Journal of Hazardous Materials*, 168 (2/3): 782–786.

Liu, H., G.V.Korshin, J.F.Ferguson (2009). Interactions of Pb(II)/Pb(IV) solid phases with chlorine and their effects on lead release. *Environmental Science and Technology*, 43 (9), 3278-3284.

Korshin, G.V., C.W.K.Chow, R.Fabris, M.Drikas (2009). Absorbance spectroscopy-based examination of effects of coagulation on the reactivity of fractions of natural organic matter with varying apparent molecular weights. *Water Research*, 43 (6), 1541-1548.

Roccaro, P., F.G.A.Vagliasindi, G.V.Korshin (2009). Changes of NOM fluorescence caused by chlorination and their associations with disinfection by-products formation. *Environmental Science and Technology*, 43 (3), 724-729.

Dryer, D.J., G.V. Korshin, A.Heitz, C.Joll. (2008) Characterization of proton and copper binding properties of natural organic matter from an Australian drinking water source by differential absorbance spectroscopy. *Water Science and Technology: Water Supply* 8 (6), 611-614. 2008

Korshin, G.V., P.Roccaro, F.G.A.Vagliasindi (2008) Drinking water quality: emerging contaminants and issues related to the performance of water distribution systems. *Ingegneria Sanitaria Ambientale*, 2 (May-September), 4-12 (ISSN 1972-2761).

Boyd, G.R., K.M.Dewis, G.V.Korshin, S.H.Reiber, A.M.Sandvig, R. Giani (2008) Effects of changing disinfectants on lead and copper release in distribution systems – a review. *Journal of American Water Works Association*, 100 (11), 75-84.

Dryer, D.J, G.V. Korshin, M. Fabbricino (2008). *In situ* examination of the protonation behavior of fulvic acids using differential absorbance spectroscopy. *Environmental Science and Technology*, 42 (17), 6644-6649.

Liu, H., G.V.Korshin, J.F.Ferguson (2008). Investigation of the kinetics and mechanisms of the oxidation of cerussite and hydrocerussite by chlorine. *Environmental Science and Technology*, 42 (9), 3241-3247.

Lu, J., G.V.Korshin (2008) A spectroscopic study of the bromination of the endocrine disruptor ethynyl estradiol. *Chemosphere*, 72 (3), 504-508.

Roccaro, P., H.S.Chang, G.V.Korshin, F.G.A.Vagliasindi (2008). Differential absorbance study of effects of temperature on chlorine consumption and formation of disinfection by-products in chlorinated water. *Water Research*, 42 (8/9), 1879-1888.

Korshin, G.V., C.W.K.Chow. M.Drikas (2008). Real time monitoring of disinfection by-products using UV absorption spectroscopy. *Water, Journal of the Australian Water Association* (5), 39-43.

Kim, J., G.V.Korshin (2008) Examination of in situ generation of hydroxyl radicals and ozone in a flow-through electrochemical reactor. *Ozone Science and Engineering*, 30 (1), 113-119.

Dryer, D.J., G.V.Korshin (2007) Investigation of the reduction of lead dioxide by natural organic matter. *Environmental Science and Technology*, 41 (15): 5510-5514.

Korshin, G.V., M.M.Benjamin, H.S.Chang, H.Gallard (2007) Examination of NOM chlorination reactions by conventional and stop-flow differential absorbance spectroscopy. *Environmental Science and Technology*, 41 (8): 2776-2781.

Korshin, G.V., H.S.Chang, A.I.Frenkel, J.F.Ferguson (2007) Structural study of the

incorporation of heavy metals into solid phase formed during the oxidation of EDTA by permanganate at high pH. *Environmental Science and Technology*, 41 (7): 2560-2565.

Liu H., G.V.Korshin, J.F.Ferguson, W.Jiang (2006) Key parameters and kinetics of oxidation of lead (II) solid phases by chlorine in drinking water. *Water Practice and Technology* (online journal only), 1 (4), doi10.2166/wpt.2006092
<http://www.iwaponline.com/wpt/001/wpt0010092.htm>

Li, Chi-Wang, M.M.Benjamin, G.V.Korshin (2006). Characterization of NOM and its adsorption by iron-oxide coated sand (IOCS) using UV spectroscopy. *Journal of Environmental Engineering and Science*, 5 (6), 467-472.

Chang, H.S., G.V.Korshin, J.F.Ferguson (2006). Examination of reaction mechanisms and reaction products for the oxidation of EDTA by permanganate at high pH values. *Environmental Science and Technology*, 40 (16), 5089-5094.

Chang, H.S., G.V.Korshin, Zheming Wang, J.M.Zachara (2006). Adsorption of uranyl on gibbsite: a time-resolved laser-induced fluorescence spectroscopy (TRLIFS) study. *Environmental Science and Technology*, 40 (4), 1244-1249.

Korshin, G.V., Jaeshin Kim, Lili Gan (2006). Comparative study of reactions of endocrine disruptors bisphenol A and diethylstilbestrol in electrochemical treatment and chlorination. *Water Research*, 40 (5), 1070-1078.

Korshin, G.V., Jaeshin Kim, A.B.Velichenko, A.I.Frenkel (2006). Electrochemical and XAFS study of effects of carbonate in oxidation of arsenite. *Environmental Science and Technology*. 40 (1), 228-234.

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

Fabbricino, M., and G.V.Korshin (2005). 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 (5): 811-818.

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.

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.

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.

Fabbricino, M., G.V.Korshin (2004). Alteration of natural organic matter and formation of by-products in water disinfected with chloramine. *Alterazione della sostanza organica naturale e formazione di sottoprodotti in aque disinfettate con chloramine. IA Ingegneria Ambientale*, 33 (6): 279-287 (in Italian).

Fabbricino, M., G.V.Korshin (2004). Monitoring of disinfection by-products in drinking water

subjected to chlorination and ozonation. *Monitoraggio dei sottoprodotti della disinfezione in acque potabili soggette a clorazione e ad ozonizzazione. IA Ingegneria Ambientale*, 33 (5): 223-232 (in Italian).

Velichenko, A.B., T.B.Lukianenko, P.Amadelli, G.V.Korshin, O.V.Kravtsov, F.Y.Danilov (2003). Effect of NAFION polymer on the electrodeposition of lead dioxide. Влияние полимерной добавки Nafion® на электроосаждение диоксида свинца и каталитическую активность полученных материалов. Вопросы химии и химической технологии. *Chemistry and Chemical Technology*, 4: 106-111 (In Russian).

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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

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.

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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.

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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.

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Boyd, G.R., M.S.McFadden, S.H.Reiber, A.M.Sandvig, G.V.Korshin, R.Giani and A.I.Frenkel (2010) Effect of Changing Disinfectants on Distribution System Lead and Copper Release. Part 2. Research Results. *Water Research Foundation*, Denver, CO. (287 pages). ISBN 978-1-60573-077-6.

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Invited Lectures and Seminars

Formation of oxidation products in AOP treatment of wastewater and surface: generation of bromate, BDOC and other products. To be presented at the 10th X International Symposium on Environmental Engineering (SIDISA2016), Rome, Italy, June 2016 (**a key note presentation**).

Interactions between Hardness Cations and Dissolved Organic Matter: Quantitation based on In Situ Spectroscopic Methods and Examination of the Performance of Existing Models. Department of Oceanography, University of Washington (January 2016).

Ternary Halogenation in Environmental Systems: Applications to Formation of Iodine-Containing Disinfection By-Products. Tsinghua University, Beijing, China (September 2015)

Hydraulic fracking and its effects on aquifers and groundwater. University of Catania, Italy (May 2015)

Remediation of the Occidental Site in Tacoma, WA: Metals, VOCs and Other Contaminants at the Site. Unique Challenges Posed by High Silica Levels in the Groundwater. University of Naples Federico II, Naples; University of Catania and University of Cagliari, Italy (March, April, May 2015).

Degradation of Trace Level Organic Contaminants in Wastewater Treated Using Advanced Oxidation Processes and Its Relationships with the Changes of Properties of Effluent Organic Matter. Bogazici University, Istanbul, Turkey EAWAG, Zurich, Switzerland and Center of the Institute of Physical Chemistry of Democritos National Center for Scientific Research, Athens, Greece (April 2015).

Use of Absorbance- and Fluorescence-Based Monitoring to Predict the Degradation of Contaminants of Emerging Concern and Formation of Reaction Products in Wastewater Treated Using Advanced Oxidation Processes. Technical University of Munich, Germany and University of Cagliari, Italy (March 2015, May 2015).

Wastewater Treatment: Established Methods and New Needs Related to Emerging Contaminants. University of Salerno, Italy (March 2015)

Remediation of the Occidental Site in Tacoma, WA: Unique Challenges Posed by High pH, High Silica Groundwater. Italian Workshop on Site Remediation Technologies. Taormina, Italy (February 2015).

Remediation of the Occidental site in Tacoma, Washington: Unusual Contaminants and Unexpected Challenges. Polytechnic University of Turin, Turin, Italy (December 2014).

Nuclear Wastes and Their Storage: Old and New Problems. University of Catania, Italy (December 2014).

Drinking Water Treatment in Small Utilities: Considerations Typical for the Practice in the United States. All-China Conference on Rural Water Systems and Water Supply (October 2014).

Water quality and Trace-Level Contaminants: New Issues and Ideas. Nanjing University, China (September 2014).

Interactions between Metals and Natural Organic Matter: Development of a Universal Approach for In Situ Quantitation and Modeling. Nanjing Agricultural University, China (September 2014).

Kinetics of Formation and Speciation of Emerging Disinfection By-Products: New Approaches to Monitor the Engagement of Organic Substrate and Model Effects of Water Chemistry. Hong Kong University of Science and Technology (August 2014).

Electrochemistry of Transient Metal Release Phenomena in Drinking Water: Examination from the Standpoint of the Kinetics of Changes of Open Circuit Potentials. American Chemical Society Meeting, San Francisco, CA (August 2014).

Monitoring and Modeling of Formation and Degradation of Emerging DBPs and Trace-Level Pharmaceuticals: New Ideas and Approaches. Polytechnic University of Turin/Turin Metropolitan Water Society (June 2014).

Fluorescence Spectroscopy to Quantify Treatment of Wastewater by Ozonation and Advanced Oxidation Processes: On Line Measurement of Trace Organics Removal. Metropolitan Water Reclamation District of Greater Chicago (May 2014).

Modeling and Monitoring of New Classes of Disinfection By-Products. Tsinghua University, Beijing, China (September 2013).

Water quality and Trace-Level Contaminants: New Issues and Ideas. Peking University, Xi'an University of Architecture and Technology, China and Lanzhou Jiaotong University, China (September 2013).

Nuclear Contamination and Cleanup at the Hanford Nuclear Reservation. Peking University, Beijing (August 2013).

Electrochemical Methods of Rotating Ring-Disc Electrode in the Studies of Halogenation of Natural Organic Matter. Peking University, Beijing (March 2013).

Accumulation, Binding and Release of Inorganic Contaminants by Corrosion Scales Formed in Drinking Water. AWWA Conference on Inorganic Contaminants, Sacramento, CA (February 2013).

Absorbance and Fluorescence Methods to Predict the Efficiency of Advanced Oxidation Processes to Remove Trace-Level Contaminants of Emerging Concern. Research Center for Eco-environmental Sciences of the Chinese Academy of Sciences, China (November 2012).

Emerging Classes of Trace-Level Contaminants in Wastewater: Their Reactivity and Removal. 3rd International Conference on Pollution Ecology, Tianjin, China (November 2012), **keynote presentation**.

Natural Organic Matter and Heavy Metals in the Environment: New Approaches to In Situ Quantitation and Advanced Modeling. Peking University, China (November 2012).

Emerging Disinfection By-Products in Drinking Water: New Approaches to Modeling and Monitoring. Research Center for Eco-environmental Sciences of the Chinese Academy of Sciences, China (November 2012).

Natural Organic Matter in Surface Waters: a Common but Elusive Animal and New Ways to Figure It Out. University of South Australia (September 2012).

Advanced Models of the Formation and Speciation of Nitrogen-Containing Disinfection By-Products: Haloacetonitriles and Bromide Effects. South Australia Water (September 2012).

Current Challenges in Water Recycling and Reuse: Emerging Contaminants and Predictions of Their Degradation by Advanced Oxidation Processes using Online Monitoring, International Center of Excellence in Water Resource Management, Adelaide, Australia (August 2012).

Nanomaterials as emerging environmental contaminants. Summer School on Nanomaterials and Their Applications, Kazan State Technological University, Kazan, Russia (June 2012), **keynote presentation**

Degradation of Chemotherapeutic Drugs in Wastewater by Ozone and Chlorine. 9th International Symposium on Environmental Engineering, Milan, Italy (June 2012)

Removal of Trace-Level Contaminants of Emerging Concern from Wastewater: Comparison of

Online Monitoring Options. 9th International Symposium on Environmental Engineering, Milan, Italy (June 2012)

Treatment of wastewater using advanced oxidation and electrochemical processes: transformations of effluent organic matter, removal of trace-level contaminants and on-line monitoring of treatment efficiency. 2012 International Symposium on Advanced Water Technology, Kyungpook National University, Korea (April 2012), **keynote presentation**

From Chernobyl to Fukushima: Nuclear Energy and Nuclear Wastes Storage Options. University of Naples, Italy (May 2011)

Lead in Water: Roles of Pb(II) and Pb(IV) Species and Formation of Intermediates and Radical Species in Electrochemical and Halogen-Driven Oxidations. Brookhaven National Laboratory (February 2011).

Spectroscopic Approaches to Monitor and Model the Formation of Nitrogen - and Bromine-Containing DBPs. Water Quality. Hong Kong University of Science and Technology, Hong Kong (December 2010)

Characterization of NOM Reactivity and Formation of Disinfection-By-Products: comparison of Spectroscopic Data Related to Chlorination and Chloramination. Kyoto University, Japan (September 2010)

Novel *In Situ* Spectroscopic Methods to Examine the Intrinsic Chemistry of Natural Organic Matter: Direct Evidence of Site-Specificity and Comparison of Contributions of Dissimilar Proton- and Metal-Binding Functionalities. University of Tokyo/ Japan International Cooperation Agency, Tokyo, Japan (September 2010)

The Degradation of Pharmaceuticals in Ozonated Wastewater: Quantitation and Kinetic Aspects Reflecting On-Line Spectroscopic Data. Curtin University of Technology, Perth, Australia (August 2010).

Expansion of Spectroscopic Approaches to Monitoring and Modeling of the Formation of Nitrogen - and Bromine-Containing DBPs. Water Quality. Water Quality Research Australia, Melbourne (August 2010)

Spectroscopic Approaches to Monitor the Degradation of Trace-Level Organic Contaminants in Wastewater by Advanced Oxidation Processes. Summer School on Advanced Oxidation Processes. Salerno, Italy (July 2010)

Treatment of Wastewater by Ozone and On-Line Options to Quantify the Degradation of Trace-Level Pharmaceuticals. University of Salerno, Italy (April 2010).

Nuclear Wastes and Their Long-Term Storage: Yucca Mountain and Other Projects. University of Naples, Italy (April 2010)

In Situ Examination of the Properties of Dissolved Organic Matter from the Rio Negro System, 2009 Annual Conference of American Geophysical Union (**keynote presentation**) (December 2009)

Modeling of the Behavior of Heavy Metals in Riverine Systems. Pearl River Contamination Committee, Guangzhou, China (September 2009).

In Situ Characterization of NOM and Its Interactions with Halogens by Spectroscopic Methods. Guizhou University, Guiyang and Peking University/Graduate University of the Chinese Academy of Sciences, Beijing, China (July 2009).

Heavy Metals in Drinking Water and in Drinking Water Distribution Systems. University of

Naples and University of Catania, Italy (May 2009).

Pharmaceuticals and Endocrine Disruptors in the Environment and Their Occurrence in Seattle. University of Salerno, Italy (May 2009).

Characterization of NOM and Its Interactions with Metals by In Situ Spectroscopic Methods: From the Suwannee River to Mundaring. 15th Australian Organic Geochemistry Conference, Adelaide, Australia (**keynote presentation**) (September 2008).

Spectroscopic Monitoring of Disinfection By-Products (DBP) Formation: Principles and Results. SCAN Messtechnik GmbH/IWA pre-conference seminar (September 2008).

Drinking Water Quality: Emerging Contaminants and Issues Related to the Performance of Water Distribution Systems, International Symposium on Sanitary and Environmental Engineering, Florence, Italy (**plenary presentation**) (June 2008).

Occurrence, Chemistry and Treatment of Arsenic in Drinking Water. Université de Poitiers, France (May 2008). Remediation of Contaminated Groundwater at Hanford, Washington: Comparison of Different Approaches. University of Naples and University of Catania, Italy (May 2008).

Effects of Carbonate on the Redox Chemistry of Arsenic: Evidence of Voltammetry, EXAFS and Quantum-Chemical Simulations. Université de Paris VII Diderot (April 2008)

Application of Differential Absorbance Spectroscopy to Monitor Water Quality in Drinking Water Distribution Networks. SCAN Messtechnik GmbH and Austrian Water Association (April 2008)

Differential Absorbance and Fluorescence for In Situ Studies of Site-Specificity of NOM and Its Interactions with Heavy Metals. Curtin Water Quality Research Center, Perth, Australia (October 30, 2007) and Department of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia (November 10, 2007).

On Line Monitoring of Chlorination and Disinfection By-Products Formation and Speciation using Optical Spectroscopy: An Outline of Principles and Results. Australian Water Quality Centre, Adelaide, Australia (November 2007).

3D HP SEC absorbance data and their interpretation: Internal Indicators of NOM Reactivity. Australian Water Quality Centre, Adelaide, Australia (November 2007).

Use of Optical Spectroscopy to Characterize Properties and Reactivity of Natural Organic Matter in Drinking Water Sources, Water Quality Research Center, Curtin Institute of Technology, Perth, Australia (October 31, 2007).

Straight from the Tap: Monitoring Disinfection By-Products. A series of invited presentations for water industry professionals organized by Australian Water Association and International Center of Excellence in Water Resource Management. Adelaide, Australia (October 2007), Water Corporation, Perth, Australia (November 5, 2007), Sydney Water Corporation, Sydney, Australia (November 9, 2007), Melbourne Water, Melbourne (November 12, 2007), Melbourne Section of Australian Water Association, Melbourne, Australia (November 13, 2007)

Formation of Disinfection By-Products in Drinking Water and Differential Absorbance Spectroscopy, Australian Water Quality Centre, Adelaide, Australia (October 2007).

Nuclear Technologies and Their Environmental Implications: A View Based on the History of and Experiences at Hanford Nuclear Reservation. University of Naples, Italy (December 2006).

Chlorination, Natural Organic Matter and Formation of Disinfection By-Products: Current

Practices, Approaches, Theories and Relationships with the Control of Copper and Lead in Drinking Water. University of Catania, Italy (December 2006).

Chlorination and Chloramination: Comparison of Pathways of DBP Generation Based on Spectroscopic Data. Southern Nevada Water Authority, Las Vegas (2006).

Needs and Directions of the Environmental Research in the United States. Sichuan University, Chengdu, China (September 2005).

Spectroscopy of Natural Organic Matter and Elucidation of Its Intrinsic Reactivity. Swiss Federal Institute for Environmental Science and Technology, Zurich, Switzerland (June 2005)

Lead in Drinking Water - Recent Catastrophe in Washington DC and Its Lessons. University of Naples, Italy (June 2005).

Current Approaches and Practices to Control Disinfection By-Products in Drinking Water in the United States. University of Naples, Italy (March 2004).

Use of Fluorescence Spectroscopy to Determine the Mechanisms of NOM Chlorination based on Apparent Molecular Weights. Conference on Natural Organic Material Research: Innovations and Applications for Drinking Water. Adelaide, Australia (March 2004).

Probing the Intrinsic Chemistry of Humic Substances using Lanthanide Ions. University of Karlsruhe, Karlsruhe, Germany, February 2002.

X-Ray Absorbance Spectroscopy Studies of Interactions of Copper (II) with Humic Species. Université de Paris Pierre et Marie Curie, Paris, France, February 2002.

The Use of Differential Spectroscopy to Study Disinfection By-Products Formation Mechanisms. Oregon Graduate Institute, Portland, Oregon, September 2001.

Differential Spectroscopy as a Tool to Predict and Control the Formation of Haloacetic Acids in Drinking Water. New York Department of Environmental Protection, New York City, August 2000.

Comprehensive Review of Studies of NOM Effects and Other Relevant Phenomena in Corrosion of Heavy Metals in Potable Water. DVGW-Technologiezentrum Wasser, Karlsruhe, Germany, July 1999.

Quantification of pH and Halogenation Effects by Differential Spectroscopy and Exploration of the Nature of Reactive Sites in NOM. 2nd Conference on Refractory Organic Substances in the Environment, Karlsruhe, Germany, August 2000 (**keynote presentation**).

Development and Applications for Differential Spectroscopy and XAFS to Probe the Internal Structure in Humic Polymers/Oligomers. University of Karlsruhe, Germany, July 1999.

Use of Differential Spectroscopy to Study the Reactivity of Humics. International Conference on Removal of Humic Substances from Water, Trondheim, Norway, June 1999.

X-Ray Absorption Studies of Humic Substances: Perspectives and Limitations. Analysis from the Standpoint of Physical Realities. Humic Substances Seminar III, Boston, March 1999.

Halogenated Organic Species in Potable Water. A New Paradigm of Research and Monitoring. Presented at John Hopkins University, Baltimore, March 1999.

UV Absorbance and Fluorescence Spectroscopy as Probes of NOM Structure and Reactivity. Annual Water Quality and Technology Conference, Denver, CO, November 1997.

Effects of NOM and Calcium on Corrosion of Copper and Brass in Potable Water. 22nd Annual Conference of Water Quality Association, Indianapolis, IN, March 1996.

Influence of NOM on Corrosion of Copper- and Lead-Containing Materials in Drinking Water. International Workshop on Internal Corrosion in Distribution Systems. Goteborg, Sweden, May 1995.

NOM and Its Effects on Corrosion, Metal Release and Speciation in Natural Waters. California Institute of Technology, Pasadena, December 1994.