GREGORY V. KORSHIN

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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

Professional History

Professor, University of Washington, Department of Civil and Environmental Engineering, September 2007-present.

Member of the Academic Committee, the International Joint Laboratory of Regional Pollution Control, Peking University, Beijing, China, 2019-2022.

Editor, International Journal *Water Research*, January 2010-present.

Visiting Professor (Distinguished Foreign Experts Program of the Chinese Government), Peking University, Beijing, China August 2013 – present.

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).

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 2009-2013

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

Engineer, Medical Instrumentation Corporation, Kazan, Russia, 1983-1984

Engineer, Institute of Applied Optics, Kazan, Russia, 1978-1980

Awards and Honors

Top Reviewer of AWWA Water Science Journal, January 2020

Distinguished Foreign Expert Award of Peking University/Chinese Ministry of Education, June 2018

Invited Professor Award, Institut de Physique du Globe de Paris, Paris, France, 2018 (deferred).

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 (deferred).

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

Liu, Siqi, Wenqing Han, G.V.Korshin (2020). Effects of Fulvic Acids on the Electrochemical Reactions and Mass Transfer Properties of Organic Cation Toluidine Blue: Results of Measurements by the Method of Rotating Ring-Disc Electrode. *Water Research*, in press.

Mahamuni, Gaurav; Rutherford, Jay; Davis, Justin; Molnar, Eric; Posner, Jonathan; Seto, Edmund; Korshin, Gregory; Novosselov, Igor (2020) Excitation-Emission Matrix Spectroscopy for Analysis of Chemical Composition of Combustion Generated Particulate Matter. *Environmental Science & Technology* (manuscript es-2019-05727y), in press.

Naddeo, V., M.A. Corpuz, J. Ballesteros, T. Zarra, G.V.Korshin, V. Belgiorno (2020). Viruses in Wastewater: occurrence, abundance and detection methods. Submitted to the *Science of the Total Environment,* in press.

Manuscripts in review

Zui, Yan-Ting; Ji Wu; Shi Cheng; Min-Hui Cai; Yu-Ze Han; Wen-Xiang Ji; Yan Li; Ji-Chun Wu; Zong-Li Huo; Gregory V. Korshin; Ai-Min Li; Wen-Tao Li (2020) Identification of pterins as the characteristic fluorophores in dissolved organic matter: a contribution from cyanobacteria. Submitted to *Environmental Science & Technology, in revision.*

Yan, Mingquan, Ming-Yang Li, G.V.Korshin (2020) I-THMs Formation and Speciation in Chloraminated Water: Effect of Sequential Addition of Chlorine and Ammonia, pH and Other Reaction Parameters. Submitted to *Environmental Science: Water Research & Technology*.

Chen, Bingya; Chenyang Zhang; Yanmei Zhao; Dongsheng Wang; Gregory V. Korshin; Mingquan Yan (2020) Interpreting Main Features of the Differential Absorbance Spectra of Chlorinated Natural Organic Matter: Comparison of Experimental and Theoretical Spectra of Model Compounds. Submitted to *Water Research, in revision*.

Gaurav Mahamuni; Korshin, G.V.; Novosselov, I. (2020) Solid Phase Excitation-Emission Matrix Spectroscopy for Chemical Analysis of Combustion Aerosols. Submitted to

Environmental Science & Technology Letters.

Ruiqian Liu; Lu Wang; Siqi Liu*; Yonghao Zhang; Gregory V. Korshin; Weiqing Han (2020) Active chlorine-mediated oxidation of 5-Fluorouracil on a hierarchically ordered macroporous RuO_2 electrode. Submitted to *Electrochimica Acta*.

Liu, Siqi, Wenqing Han, M.F.Benedetti, G.V.Korshin (2020). Comparison of the Properties of Soil and Aquatic Natural Organic Matter Based on the Data of Differential Absorbance Spectroscopy. Submitted to *Chemosphere*.

Manuscripts in submission

Yan, Mingquan, Chengyang Zhang, Paolo Roccaro, G.V.Korshin (2020) Quantitation of the Formation of Unstable Disinfection By-Products Based on the Differential Spectroscopy Approach. Submitted to *Water Research*.

Chenyang Zhang, Xuze Han, G.V.Korshin, An.M.Kuznetsov, Mingquan Yan (2020) Interpretation of the differential spectra of metal/DOM complexes based on the quantum chemical simulations for the model compound esculetin. To be submitted to *Water Research*.

Manuscripts in preparation

Lu, Yujuan, Mingquan Yan, An.M.Kuznetsov, G.V.Korshin (2020). Differential absorbance and quantum chemical examination of the complexation of Cr^{3+} ions and humic substances. In preparation, to be submitted to *Environmental Science and Technology*.

Guo, Hongguang, X.Tang, G.Ganschow, G.V.Korshin (2020) Formation and Reorganization of the Fouling Layer on PES Membrane: Examination of the Mechanism Based on the Retention of a Cationic Probe, ATR FTIR and Absorbance Data. To be submitted in *Water Research*.

Fabbricino, M., G.V.Korshin (2020) In Situ Quantitation of the Effects of Alkalinity on the Electrochemical Corrosion Potential of Iron and Metal Release. To be submitted to *Water Research*.

Refereed Archival Journal Publications

Ruffino, Barbara; Gregory V. Korshin; Mariachiara Zanetti (2020) Use of Spectroscopic Indicators for the Prediction of Bromate Generation in Ozonated Wastewater Containing Variable Concentrations of Bromide. *Water Research,* 182: 116009.

Li, Wei, Baoling Lyu, Jiping Li, Meng Zhang, Yinlong Zhang, Pingping Li, Jiangang Han, G.V.Korshin (2020) Photodegradation of roxithromycin in the presence of dissolved organic matter: characterization of the degradation products and toxicity evaluation. *Science of the Total Environment,* 733: 139348.

Li, Manjie, Zhaowei Liu, Yongcan Chen, G.V.Korshin, (2020) Effects of alkalinity, chloride and sulfate on the stability and metal release from corrosion scales in condition of stagnation and flow. *Water Research,* 175: 115675.

Li, Manjie, Zhaowei Liu, Yongcan Chen, G.V.Korshin, (2020) Effects of varying temperatures and alkalinities on the corrosion and heavy metal release from low-lead galvanized steel. *Environmental Science - Water Research & Technology,* 27: 2412-2422.

Min-Hui Cai, Ya-Ping Wu, Wen-Xiang Ji, Yu-Ze Han, Yan Li, Ji-Chun Wu, Chen-Dong Shuang, G.V.Korshin, Ai-Min Li, Wen-Tao Li (2020) Characterization of dissolved effluent organic matter using size exclusion chromatography with an array of UV absorbance, fluorescence, organic nitrogen and organic carbon detectors. *Chemosphere,* 243, 125321.

Rutherford, J.W., N.Dawson-Elli, A.M.Manicone, G.V.Korshin, I.Novosselov, E.Seto,

J.D.Posner (2020) Excitation Emission Matrix Fluorescence Spectroscopy for Aerosol Source Identification. *Atmospheric Environment*, 220, 117065.

Zhang, Chenyang; Chen, Bingya; Korshin, Gregory; Kuznetsov, Andrey; Roccaro, Paolo; Yan, Mingquan; Ni, Jinren (2020) Comparison of the Yields of Mono-, Di- and Tri-Chlorinated HAAs and THMs in Chlorination and Chloramination Based on Experimental and Quantum-Chemical Data. *Water Research,* 169, 115100.

Liu, Haizhou, G.V.Korshin (2019) Controlling the Colloidal Stability of PbO_2 and Associated Lead Release in Drinking Water Distribution Systems. *Environmental Science: Water Research and Treatment,* 5, 1262-1269.

Masliy, A.N., A.M. Kuznetsov, G.V. Korshin (2019) The intrinsic mechanisms of the catalytic oxidation of arsenite by hydroxyl radicals in the H_3AsO_3-CO_3^{2-}/HCO_3^--H_2O system: a quantum chemical examination. *Chemosphere*, 238: 124466.

Chen, Yao, M.Fabbricino, V.Luongo, G.V.Korshin (2019) Differential Absorbance Study of Interactions between Europium, Soil and Aquatic NOM and Model Compounds. *Chemosphere,* 235: 196-203.

Xie, Xiaoyun, M.Q.Yan, H.G.Guo, G.V.Korshin (2019) Interactions between Natural Organic Matter (NOM) and Organic Cations: Effects of NOM Charges on the Binding of Toluidine Blue. *Chemosphere*, 236: 124272.

Yan, Mingquan, T.T.Luo, N.Li, G.V.Korshin (2019) Monitoring the Kinetics of Reactions between Natural Organic Matter and Al(III) Ions Using Differential Absorbance Spectra. *Chemosphere*, 235: 220-226.

Yu Huang, Ji Wu, Shi Cheng, Ya-Ping Wu, De-Lin Zhang, Yan Li, Yang Pan, Zong-Li Huo, Ji-Chun Wu, Xian-Chuan Xie, Gregory V. Korshin, Ai-Min Li, Wen-Tao Li (2019) Developing surrogate indicators for predicting suppression of halophenols formation potential and abatement of estrogenic activity during ozonation of water and wastewater. *Water Research,* 161: 152-160.

Guo, Hongguang, X.Tang, G.Ganschow, G.V.Korshin (2019) Differential ATR FTIR Spectroscopy of Membrane Fouling: Contributions of Fouling Films and Correlations between Their Spectroscopic Properties and Transmembrane Pressure. *Water Research*, 161: 27-34.

Li Wei; Xiujuan Xu; Baoling Lyu; Ying Tang; Yinlong Zhang; Fang Chen; G.V.Korshin (2019) Degradation of typical macrolide antibiotic roxithromycin by hydroxyl radical: kinetics, products and toxicity assessment. *Environmental Science and Pollution Research,* 26 (14): 14570-14582 (https://doi.org/10.1007/s11356-019-04713-1).

Yan, Mingquan, C.Zhang, A.M.Kuznetsov, G.V.Korshin (2019) Experimental and Quantum-Chemical Study of Differential Absorbance Spectra of Environmentally Relevant Species: A Study of Quercetin Deprotonation and Its Interactions with Copper (II) Ions. *Science of the Total Environment,* 679: 229-236.

Xin Cheng, Xin, H.Guo, Y.Zhang, G.V.Korshin (2019) Insights into the Mechanism of Nonradical Reactions of Persulfate Activated by Carbon Nanotubes: Activation Performance and Structure-Function Relationship. *Water Research*, 157: 406-414.

Fabbricino, M., Yan, M., & Korshin, G. V. (2019). Effects of chlorination on the fluorescence of seawater: Pronounced changes of emission intensity and their relationships with the formation of disinfection byproducts. *Chemosphere*, 218, 430-437.

Young, Tessora R.,Wentao Li, A. Guo, G.V.Korshin, M.C.Dodd (2018) Characterization of

Disinfection Byproduct Formation and Associated Changes to Dissolved Organic Matter During Solar Photolysis of Free Available Chlorine. *Water Research,* 146: 317-326.

Shen, Bo, Xianghua Wen, G.V.Korshin (2018). Voltammetric behavior of Ciprofloxacin on Rotating Disk Electrode and its Electrochemical Oxidation. *Environmental Science: Processes & Impacts*, 20: 943-955.

Korshin, G.V., Mingquan Yan (2018) Electrochemical Dehalogenation of Disinfection By-Products and Iodine-Containing Contrast Media: A Review. *Environmental Engineering Research*, 23 (4), 345-343.

Yan, Mingquan, G.V. Korshin, M.F.Benedetti, C.W.Li (2018) Fluorescence Quenching and Energy Transfer Phenomena Associated with the Interactions of Terbium Ion and Humic Acid. *Aquatic Geochemistry,* 1-13.

Kuznetsov, An.M., A.N.Masliy, G.V.Korshin (2018) Quantum-chemical calculations of Pb(II) hydration properties: structure, hydration energies and pKa value. *Journal of Molecular Modeling* 24: 193-205.

Yan, Mingquan, Zhanghao Chen, Na Li, Yuxuan Zhou, Chenyang Zhang, G.V.Korshin (2018) Electrochemical Reductive Dehalogenation of Iodine-Containing Contrast Agent Pharmaceuticals: Examination of Reactions of Diatrizoate and Iopamidol using the Method of Rotating Ring-Disc Electrode (RRDE). *Water Research*, 136: 104-111.

Korshin, G.V., M.Sgroi, H.Ratnaweera (2018) Spectroscopic Surrogates for Real Time Monitoring of Water Quality in Wastewater Treatment and Water Reuse. *Current Opinion in Environmental Science & Health,* 2: 12-19 (https://doi.org/10.1016/j.coesh.2017.11.003).

Roccaro, Paolo, M.Yan, M.Fabbricino, G.V.Korshin (2018) Comparison of the Effects of Chloramine and Chlorine on the Aromaticity of Dissolved Organic Matter and Yields of Disinfection By-Products. *Chemosphere,* 191, 477-484.

Yan, Mingquan, Yujuan Lu, G.V.Korshin (2017). Spectroscopic Study of Mechanisms of Interactions of Lead (II) Ions with Dissolved Organic Matter and Optimization of Pb(II)-DOM Equilibrium Constants. *Geochimica Cosmochimica Acta*, 213, 308-316.

Massimiliano Sgroi, Roccaro, P., Korshin, G.V., Vagliasindi, F.G.A. (2017) Monitoring the Behavior of Emerging Contaminants in Wastewater-Impacted Rivers Based on the Use of Fluorescence Excitation Emission Matrixes (EEM). *Environmental Science & Technology,* 51 (8), 4306-4316 (DOI: 10.1021/acs.est.6b05785).

Wentao Li, Cao, M., Young, T; Ruffino, B., Dodd, M., Li, A., Korshin, G.V. (2017) Application of UV absorbance and fluorescence indicators to assess the formation of biodegradable dissolved organic carbon and bromate during ozonation. *Water Research,* 11: 154-162 (http://dx.doi.org/10.1016/j.watres.2017.01.009).

Massimiliano Sgroi, Roccaro, P., Korshin, G.V., Greco, V., Sciuto, S., Anumol, T., Snyder, S.A., Vagliasindi, F.G.A. (2017) Use of fluorescence EEM as a tool for monitoring the removal of emerging contaminants in full scale wastewater treatment plants. *Journal of Hazardous Materials,* 323 Part A: 367-376 (http://dx.doi.org/10.1016/j.jhazmat.2016.05.035).

Chen Liu, Li, P., Tang, X., G.V. Korshin (2016) Effects of Ozonation on Effluent Organic Matter and Emerging Micropollutants in Wastewater: Characterization Based on Changes of Three-Dimensional HP-SEC and EEM Fluorescence. *Environmental Science and Pollution Research* 23 (20): 20567-20579 (doi:10.1007/s11356-016-7287-8).

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. *Environmental Science and Technology,* 50 (8): 4468–4475 (DOI: 10.1021/acs.est.5b06369)

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. J*ournal 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)/PbO_2 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.

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Korshin, G.V., J.F.Ferguson, S.A.L.Perry. Effects of NOM on the corrosion and formation of pits on copper. Proceedings of Annual Conference of the American Water Works Association, New York, NY, June 1994.

Korshin, G.V., J.F.Ferguson, B.Farris. Investigation of water treatment options to reduce corrosion of metals in Portland water. Proceedings of Annual Water Quality and Technology Conference, Miami, FL, November 1993.

Books and Editing

Reviewed Full Reports

Snyder, S.A., Korshin, G.V., Gerrity, D., and Wert, E. (2012) Use of UV and Fluorescence Spectra as Surrogate Measures for Contaminant Oxidation and Disinfection in the Ozone/H_2O_2 Advanced Oxidation Process. *WateReuse Foundation*, Alexandria, VA (277 pages).

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.

Hill, A., Friedman, M., Valentine, R.L, C.Y.Peng, A.Larson and G.V.Korshin (2010) Assessment of Inorganics in Drinking Water System Scales and Sediments. *Water Research Foundation*, Denver, CO. (236 pages). ISBN 978-1-60573-089-9

Branhuber, P.J., G.V.Korshin (2009) Methods for the Detection of Residual Concentrations of Hydrogen Peroxide in Advanced Oxidation Processes. *WateReuse Foundation*, Alexandria, VA (71 pages).

Boyd, G.R., K.M.Dewis, A.M.Sandvig, G.J.Kirmeyer, S.H.Reiber and G.V.Korshin (2006) Effect of Changing Disinfectants on Distribution System Lead and Copper Release. Part 1. Literature Review. *Awwa Research Foundation and American Water Works Association*, Denver, CO. (25 pages)

Korshin, G.V., M.M.Benjamin, and H.S.Chang (2004). Modeling Disinfection By-Products Formation Kinetics: Mechanistic and Spectroscopic Approaches. *Awwa Research Foundation and American Water Works,* Denver, CO (150 pages).

Korshin, G.V., Jaeshin Kim, A.B.Velichenko (2004). Development of an Electrochemical System for Arsenite Oxidation in Drinking Water. *Awwa Research Foundation and American Water Works Association*, Denver, CO. (102 pages)

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 (260 pages).

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 ISBN 1-58321-205-1 (118 pages).

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. ISBN 1-58321-015-6 (324 pages).

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. ISBN 0-89867-974-5 (176 pages).

Part of Reviewed Reports

Conio, O., M.Chioetto, E.Hargesheimer, G.V.Korshin (contributor), Y.Li (contributor) (2002). *Online Monitoring for Drinking Water Utilities*. .AWWA Research Foundation and CRS Proaqua. ISBN 1-58321-183-7 (Chapter 7. Organic Monitors)

Edwards, M.A., T.E.Meyer, J.Rehring, J.F.Ferguson, G.V.Korshin, S.A.L.Perry (1996). *Role of Inorganic Anions, NOM and Water Treatment Processes in Copper Corrosion*. AWWA Research Foundation and American Water Works Association. ISBN 0-89867-847-1 (Chapter

7).

Benjamin, M.M., Yu-Jung Chang, Chi-Wang Li, G.V.Korshin (1993). *NOM Adsorption onto Iron-Oxide Coated Sand*. AWWA Research Foundation. ISBN 0-89867-693-2 (Chapter 5).

Project Reports (Reports to Sponsors)

Korshin, G.V., S.Malik, S.Li. 2019. Examination of Options to Remove Arsenic from Cedar Hill Regional Landfill Facility Leachates and Gas Condensates. Results of Phase I. Report to King County Solid Waste Division.

Korshin, G.V.. 2019. Development of the Modified Titanium Oxalate Method for the Analysis for Hydrogen Peroxide in the Presence of Varying Level of Sulfite. Report to Teck Resources Ltd.

Korshin, G.V., M.M.Benjamin. 2017. Mechanisms of Gelation in Oxy Site Soils, Creation of Impermeable Barriers and Options to Remove Silica. Report to GHD Inc.

Korshin, G.V., M.M.Benjamin. 2016. Mechanisms of Gelation in Oxy Site Soils. Report to CRA Inc.

Korshin, G.V., M.M.Benjamin. 2015. Effects of pH and Redox Potentials on the Partition Coefficients Characterizing Heavy Metal Release from Oxy Site Soils. Report to CRA Inc.

Liu, H., J.F.Ferguson, G.V.Korshin. 2008. Santa Cruz Seawater Desalination: Assessment of pH, Phosphate Inhibitor and Blending Ratio On Metal Release from Copper and Lead/tin Solder Coupons. An interim report to Santa Cruz Water Department of a laboratory-based Corrosion Evaluation for Santa Cruz SWRO Pilot Plant. Report to CDM/City of Santa Cruz.

Korshin, G.V., J.F.Ferguson. 2007. Fundamental Mechanisms of Lead Oxidation: Effects of Chlorine, Chloramine and Natural Organic Matter on Lead Release in Drinking Water. Annual Report to National Science Foundation, Project 0504447.

Reiber, S., M.Friedman, G.V.Korshin, R.Valentine. 2005-2006. Assessment of Inorganics Accumulation in Drinking Water System Scales and Sediments. Periodic progress reports to AwwaRF, Project 3118.

Korshin, G.V., J.F.Ferguson. 2006. Fundamental Mechanisms of Lead Oxidation: Effects of Chlorine, Chloramine and Natural Organic Matter on Lead Release in Drinking Water. Annual Report to National Science Foundation, Project 0504447.

Korshin. G.V. 2006. Characterization of Natural Organic Matter (NOM) in Washington, D.C. Drinking Water. Report to Cadmus Group Inc. and the U.S. Environmental Protection Agency. Project 069-UW-1/68-C-02-069.

Korshin, G.V., J.F.Ferguson. 2006. Evaluation of Effects of pH and Blending on Copper and Lead Release in Water from Canyon Road WTP, Pilot Plant, Buckman Well and Their Blends and Examination of NOM Fractional Composition in Untreated Rio Grande River. Report to CMD Inc.

Korshin, G.V, Junhe Lu. 2005, 2006. Methods for the Detection of Residual Concentrations of Hydrogen Peroxide in Advanced Oxidation Processes. Periodic reports to WateReuse Federation. Project WRT 04-019.

Korshin, G.V., J.F.Ferguson. 2005. Evaluation of Effects of pH, Orthophosphate Corrosion Inhibitor and Blending on Copper and Lead Release in Randall-Bold Treated Water, Brentwood Well Water and Their Blends. Monte-Carlo Simulations of Langelier Index in Blended Water. Report to CMD Inc.

Korshin, G.V. 2004. Evaluation of Lead Leaching Rates During Stagnation Using Real-Time Corrosion Potential Monitoring and Modeling Methods. Report to District of Columbia Water and Sewer Authority (WASA) and Hatch Mott MacDonald (HMM).

Korshin, G.V. 2004. Time-resolved laser-induced fluorescence spectroscopy of uranyl adsorbed on gibbsite and silica at varying pH, ionic strengths and carbon dioxide concentrations. Report to Pacific Northwest National Laboratory.

Korshin, G.V., M.M.Benjamin, H.S.Chang. 2001-2004. Chlorinated DBP Formation Kinetics. Periodic progress reports to AwwaRF, Project 2597.

Korshin, G.V., B.Shaha, A.B.Velichenko. 2001-2004. Development of Corrosion Potential Monitoring Method for Lead and Copper Control Monitoring Strategies. Periodic progress reports to AwwaRF, Project 2679.

Benjamin, M.M., G.V.Korshin. 2002. Use of Differential Spectroscopy to Study DBP Formation Reactions. Report for the U.S. Environmental Protection Agency. EPA Number R826645.

Korshin, G.V., Jaeshin Kim, A.B.Velichenko. 2000-2002. Development of an Electrochemical Treatment System to Facilitate and Improve Arsenic Removal from Drinking Water. Periodic progress reports to AwwaRF, Project 2827.

Korshin, G.V., O.Hemingway, M.M.Benjamin, W.Wu. 1999-2001. Differential UV Spectroscopy for On-line DBP Monitoring. Periodic progress reports to AwwaRF, Project 2563.

Korshin, G.V. 2000. Electrochemical Reactions of Environmentally-Occurring Halogenated Species and Exploration of Relevant Dehalogenation Technologies. Report for Royalty Research Fund, Grant 65-3459.

Benjamin, M.M., G.V.Korshin. 2000. Adsorption /Membrane Filtration as a Contaminant Concentration and Separation Process for Mixed Wastes and Tank Wastes. Report for Environmental Management and Science Program of U.S. Department of Energy. Grant Number DE-FG07-96ER62313

Agrawal, Y.C., G.V.Korshin. 2000. A Differential Long-Path Spectrometer (DLPS) for Monitoring By-Products of Chlorination of Water. Report to National Science Foundation, Grant DMI-9960701

Korshin, G.V. 1999. Joint Investigation of the Reactivity of Natural Organic Matter by Absorbance and Fluorescence Spectroscopies. Travel Grant Report to University of Poitiers and Poitou-Charente Regional Council, France.

Korshin, G.V. 1999. Visit to Kazan State Technological University Concerning Joint Studies of Environmentally-Important Halogenation Reactions. Travel Grant Report to National Research Council.

Croué, J.P., G.V.Korshin, M.M.Benjamin, J.A.Leenheer. 1997-1999. Isolation, Fractionation and Characterization of Natural Organic Matter in Drinking Water. Quarterly progress reports to AwwaRF.

Invited Lectures and Seminars

Increased Mobility of Heavy Metals in Landfill Leachate: Observations and Mechanisms. 11th International Symposium on Environmental Engineering (SIDISA 2020), Turin, Italy (planned for June 2021).

Comparison of Properties of Aquatic and Soil Organic Matter: Characterization Based on

Spectroscopic and Electrochemical Data. 2nd International Conference on All Materials Fluxes in River-Ecosystem (AMFR2019), Beijing, China (October, 2019), ***keynote presentation.***

Transients of the Corrosion Potential of Metals Exposed to Drinking Water: Behavior in Stagnation and Flow Conditions and Metal Release. National Chen Kung University, Tainan, Taiwan (September 11, 2019).

Formation and Electrochemical Degradation of Iodine-Containing Persistent Organic Contaminants. Tamkang University and National Technological University of Taiwan, Taipei, Taiwan (September 12, 2019).

Unusual Aspects of the Dehalogenation of Iodine Containing Disinfection By-Products and Persistent Organic Contaminants: Data of Electrochemical and Quantum Chemical Studies. Hong Kong University of Science and Technology, Hong Kong (September 2019).

Electrochemical Methods to Degrade Environmental Contaminants: Promise and Challenges. International Water Industry Conference Daegu, Korea (September 2019), ***keynote presentation***.

Transients of the Corrosion Potential of Metals Exposed to Drinking Water: Behavior in Stagnation and Flow Conditions and Metal Release. University of California Riverside (May 2019).

Formation and Electrochemical Degradation of Iodine-Containing Persistent Organic Contaminants. Pacific Northwest National Laboratory (May 2019).

Accumulation and Release of Heavy Metals in Drinking Water Systems: Facts and Challenges. Tsinghua University, Beijing (December 2018).

Modeling of Formation and Electrochemical Reductive Degradation of Iodine-Containing Organic Contaminants. Nanjing Forestry University, Nanjing (December 2018).

Use of Differential Absorbance and Fluorescence Spectroscopy to Probe the Reactivity of Natural Organic Matter and Quantify the Formation of Disinfection By-Products. Nanjing University, Nanjing (December 2018).

The Challenge of Membrane Fouling: Data of Attenuated Total Reflectance (ATR), Their Complexity and Interpretation. Peking University, Beijing (September 2018).

New Insights into the Reactivity of Natural Organic Matter: Data of *In Situ* Characterization Methods and Relevance to DBP Formation. Tongji University, Shanghai and Zhejiang University of Technology, Hangzhou (September 2018).

Ternary Models of the Speciation of Halogenated Disinfection By-Products: Formal Approaches and Selected Mechanistic Aspects. Hong Kong University of Science and Technology (January 2018).

Emerging Contaminants in Streams Affected by Wastewater Effluents: Monitoring Based on Spectroscopic Surrogate Parameters. The International Society for Environmental Sciences, 2017 International Conference on Environmental Pollution Control, Vancouver BC (October 2017).

Electrochemical reactions of iodine-containing disinfection by-products and pharmaceuticals. Tsinghua University, Beijing (September 2017).

Degradation and Transformations of Emerging Contaminants in Wastewater Treatment Plants and Affected Streams: Results of EEM-Based Monitoring. Peking University, Beijing (September 2017).

Metachromatic Probes and Their Interaction with Membrane Foulants and Surfaces. Peking University, Beijing (August 2017).

Interactions between Metachromatic Probe and Compounds Associated with Membrane Fouling. 8th IWA Specialist Conference on Membrane Technology for Water and Wastewater Treatment, Singapore (September 2017, key note presentation).

Comparison of the Properties of Natural Organic Matter and Membrane Foulants: Data of Electrostatic Probes. University of Salerno, Italy (July 2017).

Transient Behavior of Corrosion Potential and Its Relationship with Metal Release in Drinking Water. University of Naples, Italy (June 2017).

Water Treatment in the Cold Zone of the United States: Outline of General Practices. Water and Environment Student Talks, University of British Columbia, Vancouver BC (June 2017).

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.

Conference Presentations

Utilization of Landfill Gas and Mobilization of Arsenic in Municipal Landfills. 3rd Water/Energy Nexus Conference, Djerba, Tunisia (planned for December 2020.)

Removal of Arsenic and Co-Occurring Contaminants from Landfill Leachate using the Microelectrolysis Approach. 3rd Water/Energy Nexus Conference, Djerba, Tunisia (planned for December 2020).

Emerging contaminant removal and quorum sensing control in a hybrid electrochemical self-forming dynamic encapsulated biomembrane reactor. 11th International Symposium on Environmental Engineering (SIDISA 2020), Turin, Italy (to be presented by Vincenzo Naddeo, planned for June 2021).

Prediction of the formation of bromate in ozonated wastewaters with variable bromide concentrations using UV absorbance and fluorescence indicators. 11th International Symposium on Environmental Engineering (SIDISA 2020), Turin, Italy (to be presented by Barbara Ruffino, planned for June 2021).

Reductive degradation of dimethylarsinic acid and formation of its reaction products. 11th International Symposium on Environmental Engineering (SIDISA 2020), Turin, Italy (planned for June 2021).

Spectroscopic Study of Interactions of Lanthanide Ions with Soil and Aquatic NOM. NOM 7 IWA Specialist Conference on Natural Organic Matter in Water, Tokyo, Japan (October 2019)

Differential Spectroscopy of the Formation of Unstable Disinfection By-Products at Varying Temperatures. NOM 7 IWA Specialist Conference on Natural Organic Matter in Water, Tokyo, Japan (October 2019, presented by Paolo Roccaro)

Comparison of the Yields of Mono-, Di- and Tri-Chlorinated HAAs and THMs in Chlorination and Chloramination Based on Experimental and Quantum-Chemical Data. NOM 7 IWA Specialist Conference on Natural Organic Matter in Water, Tokyo, Japan (October 2019, to be Chengyang Zhang)

In-situ Characterization of the Reactivity of NOM Using Absorbance Spectroscopy. NOM 7 IWA Specialist Conference on Natural Organic Matter in Water, Tokyo, Japan (October 2019, presented by Mingquan Yan)

Predicting the Effect of Temperature on the Formation of Unstable Disinfection By-Products by Differential Spectroscopy. 16th International Conference on Environmental Science and Technology CEST2019, Rhodes, Greece (September 2019, presented by Paolo Roccaro).

Monitoring Emerging Contaminants in Wastewater Reuse Systems by Fluorescence EEM. 12th IWA International Conference on Water Reclamation and Reuse, Berlin, Germany (June 2019, presented by Paolo Roccaro).

ATR Spectroscopy of Membrane Fouling: Deconvolution of ATR Spectra of the Substrate and Fouling Films and Interpretation of Their Properties. 9th IWA Specialist Conference on Membrane Technology for Water and Wastewater Treatment, Toulouse, France (June 2019)

Membrane Fouling Probing Using Metachromatic Dye: Spectroscopic Study and Modeling. 9th IWA Specialist Conference on Membrane Technology for Water and Wastewater Treatment, Toulouse, France (June 2019).

Development of a Solid State Substrate Fluorescence Approach for the Apportionment of Sources of Particulate Matter from Combustion Sources. 37th Annual Conference of American Association of Aerosol Science, September 2018 (presented by Gaurav Mahamuni).

Rotating ring-disk electrode study of the electrochemical dehalogenation of iodine-containing organic contaminants. 233rd Meeting of the Electrochemical Society, Seattle May 2018.

Transient changes of corrosion potentials and their correlations with metal release during stagnation and flow episodes in drinking water systems. 233rd Meeting of the Electrochemical Society, Seattle, May 2018.

Distribution of corrosion potentials across galvanically coupled interfaces exposed in drinking water. 233rd Meeting of the Electrochemical Society, Seattle May 2018.

Characterization of Changes in Dissolved Organic Matter Properties and Disinfection Byproduct Formation during Solar Photolysis of Aqueous Free Chlorine, American Chemical Society Meeting, New Orleans LA, March 2018 (presented by Tess Young).

Application of UV and Fluorescence Indices for Assessing the Performance of Ozonation Process: Towards Smart Water Treatment. Annual European Geophysical Union Meeting, Vienna April 2017 (presented by Wentao Li).

A ternary model to quantitate the speciation of chlorine, bromine and iodine containing trihalomethanes. American Chemical Society Meeting, Philadelphia, PA, August 2016.

Major characteristics and challenges of treatment of high pH, high Si groundwater at a contaminated site in Western Washington. American Chemical Society Meeting, Philadelphia, PA, August 2016.

Use of an online LED UV fluorescence sensor for high time resolution DOM monitoring and predicting DBPs formation potential during water treatment. American Chemical Society Meeting, Philadelphia, PA, August 2016. (Presented by Wentao Li).

Specific Features of Formation of Disinfection By-Products in Surface Waters Chlorinated at Low Temperatures. Water Management in Cold Climates, Spitzbergen, Norway June 2016.

Occurrence and fate of emerging trace organic contaminants in two semi-urbanized catchment basin in Sicily (Italy): From Source to sink. 14th International Conference on Environmental Science and Technology. Rhodes, Greece, September 2015 (Presented by Massimiliano Sgroi).

Novel Approaches to Characterize the Reactivity of Dissolved Organic Matter in Water via Interpretation of Its Absorbance Spectra. AMFR 2015 -1st International Conference on All Material Fluxes in River Eco-Systems, Beijing China, 2015 (presented by Mingquan Yan).

Online Monitoring-Based Examination of the Efficiency of Removal of Polycyclic Synthetic Musks and Antineoplastic Drugs by Wastewater Ozonation. 3rd Specialized Water Research Conference on Catalytic Processes in Water Treatment. Shenzhen, China January 2015.

Occurrence and fate of organic compounds of emerging concern in a catchment basin in Southern Italy. Water Quality and Technology Conference, November 2014 New Orleans (presented by Massimiliano Sgroi).

On-line monitoring of disinfection by-products in chlorinated or chloraminated drinking waters by using absorbance and fluorescence indices. DBP 2014: Disinfection By-Products in Drinking Water. October 2014, Mülheim an der Ruhr, Germany (presented by Paolo Roccaro).

In Situ Characterization of Interactions or Rare Earth Ions with Humic Substances. American Chemical Society Meeting, San Francisco, CA (August 2014).

Interactions between Dissolved Organic Matter and Iodine Species: Examination Based on the Differential Absorbance Approach. American Chemical Society Meeting, San Francisco, CA (August 2014).

Effects of Ionic Strength and Complexation with Hardness Cations of the Properties of Dissolved Organic Matter: Comparison of NICA-Donnan Data and Changes of In Situ Parameters. American Chemical Society Meeting, San Francisco, CA (presented by Yuan Gao, August 2014).

Effects of pH on the Speciation Coefficients in Formal Models of Formation of Brominated Disinfection By-Products: Case of Australian Surface Waters. American Chemical Society Meeting, San Francisco, CA (August 2014).

Occurrence and fate of contaminant of emerging concern in two semi-urbanized catchment basins in Sicily, Italy. American Chemical Society Meeting, San Francisco, CA (presented by Paolo Roccaro, August 2014).

Prediction of trihalomethanes in drinking water. 20th International Congress on Modelling and Simulation (MODSIM2013), December 2013 (presented by John Van Leeuwen).

Examination of Properties of Algogenic NOM Using Differential Spectroscopy. NOM 2013 IWA Natural Organic Matter Specialist Conference, Perth, Australia, October 2013 (presented by Sabir Hussein).

Online Trial of Surrogate Water Quality Parameters at a Conventional Water Treatment Plant. OzWater 2013 Conference, Perth, Australia, March 2013 (presented by Amanda Byrne).

Inorganic Contaminant Accumulation – Occurrence, Implications, and Mitigation Strategies. AWWA Conference on Inorganic Contaminants, Sacramento, CA (February 2013, presented by Andrew Hill).

Quantitation of Interactions of Suwannee River Fulvic Acid with Based on Numerical Deconvolution of Differential Absorbance and Fluorescence spectra. 16th Conference of International Humic Substances Society, Hangzhou, China, July 2012 (presented by Mingquan Yan)

Relationships between disinfection by-products formed by the chlorination of raw, treated and fractionated surface waters. IWA World Congress and Exhibition, Busan, Korea (September 2012, presented by Paolo Roccaro)

Modeling of the Speciation of Trihalomethanes and Dihaloacetonitries in Chlorinated Drinking Water. 9th International Symposium on Environmental Engineering, Milan, Italy (June 2012, presented by Paolo Roccaro)

Online monitoring of process performance for indirect potable water reuse trains. WateReuse California Annual Conference, Sacramento, CA (March 2012, presented by Dan Gerrity).

Identification and spectroscopy of degradation products from fluoroquinolone antibiotics in ozonated wastewater, 242nd American Chemical Society National Meeting, San Diego, California (March 2012, presented by Chen Liu).

Development and validation of online surrogate parameters for water quality monitoring at a conventional water treatment plant using UV absorbance spectrolyser. 7th International Conference on Intelligent Sensors, Sensor Networks and Information Processing, Adelaide, Australia (December 2011, presented by Amanda Byrn).

Reactivity of iodine tablets with natural waters: SUVA and iodoform formation kinetics. Micropollutants and Ecohazards IWA Conference, Sydney, Australia (July 2011, presented by Gretchen Onstad).

Spectroscopic and SEC study of effects of ozonation on effluent organic matter and transformation of antibiotics. IWA Conference on Natural Organic Matter, Santa Cruz, CA (July 2011, presented by Chen Liu).

Effect of natural organic matter on the accumulation of inorganic contaminants in drinking water distribution systems. IWA Conference on Natural Organic Matter, Santa Cruz, CA (July 2011, presented by Ching-Yu Peng).

Components' testing –effects of changing disinfectants and other water quality parameters on lead and copper release. 2011 Annual Conference and Exhibition of American Water Works Association, Washington DC (June 2011, presented by Glen Boyd)

Use of Organic Characterization Techniques to Develop Predictive Tools for Water Reuse Applications. 15th Annual Water Reuse & Desalination Research Conference, Las Vegas 2011 (May 2011, presented by Alex Pisarenko)

Degradation of Trace-Level Polycyclic Synthetic Musk Fragrances by Ozone and Evolution of Absorbance Spectra of Ozonated Wastewater. 241st American Chemical Society National Meeting, Anaheim, California (March 2011, presented by V.Nanaboina)

Changes of emission and absorbance as surrogates for contaminant degradation in ozone/H_2O_2 and UV/H_2O_2 advanced oxidation processes. 241st American Chemical Society National Meeting, Anaheim, California (March 2011)

Changes of fluorescence of wastewater caused by ozonation and their association with the degradation of trace-level pharmaceuticals and personal care products (PPCPs). 241st American Chemical Society National Meeting, Anaheim, California (March 2011).

Speciation of Inorganic contaminants in corrosion scales formed in drinking water distribution

systems. 241st American Chemical Society National Meeting, Anaheim, California (March 2011, presented by Chin-Yu Peng)

Desalination and Sustainability of Drinking Water Distribution Systems: Effects of Natural Organic Matter on Copper Corrosion and Release. 241st American Chemical Society National Meeting, Anaheim, California (March 2011, presented by Yuan Gao)

Galvanic Couples: Effects of Changing Water Quality on Open-Circuit Potential Profiles and Lead and Copper Release. 2010 Water Quality and Technology Conference, Savannah, SC (November 2010, presented by Glen Boyd)

Impacts of blending desalinated water into the drinking water distribution system on iron corrosion and colloidal iron release. 5th International Water Association Young Water Professional Conference, Sydney, Australia (July 2010, given by Haizhou Liu, ***honorable mention for best platform presentation***).

Modelling Differential Absorbance Spectra of SRFA during Complexation with Copper and Lead. 15th Conference of International Humic Substances Society, Tenerife, Spain (June 2010, presented by Debra Dryer)

Colloidal Lead Release in Drinking Water Distribution Systems: An Ignored and Difficult Aspect of Lead Release Control. PNWS-AWWA 2010 Annual Conference, Tacoma, WA (May 2010).

Blending of Desalinated and Surface Water into a Distribution System: Effects on Lead and Copper Corrosion. PNWS-AWWA 2010 Annual Conference, Tacoma, WA (May 2010).

Quantum-chemical simulation of the formation of As (IV) during the oxidation of arsenite. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010)

Investigation of the protonation behavior of natural organic matter from the Rio Negro region by in situ spectroscopic methods. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010)

Characterizing NOM reactivity at environmental concentrations using spectrophotometric titrations . 2010 American Chemical Society Meeting, San Francisco, CA (March 2010, presented by Noemie Janot)

Roles of Pb(III) Intermediates and Hydroxyl Radicals in the Formation of PbO_2 in Pb(II) Oxidation by Chlorine 2010 American Chemical Society Meeting, San Francisco, CA (March 2010, presented by Haizhou Liu, ***student presentation award***)

Inorganic contaminants in scales formed in drinking water distribution systems: Examination of occurrence and release. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010, presented by Ching-Yu Peng)

Desalination and Sustainability of Drinking Water Distribution Systems: Effects of Blending of Desalinated and Conventionally Treated Surface Water on Iron Corrosion and Release. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010, presented by Haizhou Liu)

Differential absorbance spectroscopy in the analysis of metal complexation to dissolved organic matter. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010, presented by D. Dryer)

Correlations between the degradation of pharmaceuticals and personal care products and changes of the absorbance spectra of wastewater and surface water in ozonation. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010)

Interpretation of the Evolution of Fluorescence Spectra of Dissolved Organic Matter During Metal Complexation. 2010 American Chemical Society Meeting, San Francisco, CA (March 2010,presented by D.Dryer)

Interactions of Dissolved Organic Matter with Copper: Comparison of Results of Differential Absorbance and Fluorescence Quenching Spectroscopy. 2009 Annual Conference of American Geophysical Union (December 2009, presented by D.Dryer)

Effects of Desalinated Water and Its Blends with Conventionally Treated Surface Water on Copper and Lead Release. 2009 Water Quality and Technology Conference, Seattle, WA (November 2009)

Colloidal mobilization of PbO_2 by Chloramine and NOM and Effects of Phosphate Corrosion Inhibitors. 2009 Water Quality and Technology Conference, Seattle, WA (November 2009, presented by Haizhou Liu)

Spectrophotometric detection of hydrogen peroxide. 2009 Water Quality and Technology Conference, Seattle, WA (November 2009, presented by P. Branhuber)

Effects of organic matter–aluminium oxide interactions on Eu(III) speciation. 189th Goldschmidt Conference, Davos, Switzerland (June 2009, presented by N.Janot)

Initial Study of the Occurrence of Pharmaceuticals and Endocrine Disrupters in Water Bodies in and around Seattle. PNWS-AWWA 2009 Annual Conference, Salem, OR (May 2009).

Examination of the Occurrence of Heavy Metals in Corrosion Scales and Sediments formed in Drinking Water Distribution Systems. PNWS-AWWA 2009 Annual Conference, Salem, OR (May 2009).

Effects of Phosphate Corrosion Inhibitors on Lead Leaching in the Presence of Chlorine and Chloramine. PNWS-AWWA 2009 Annual Conference, Salem, OR (May 2009).

Real Time Monitoring of Chlorine Demand and Disinfection By-Products Using UV Absorption Spectroscopy. OzWater 2009 Conference, Melbourne, Australia (March 2009)

Leaching of Heavy Metals Due to Changing Disinfectants in Drinking Water Distribution Systems. Disinfection 2009, Atlanta (February 2009, presented by Matthew McFadden)

Drinking Water Quality: The Significance of Emerging Contaminants and Disinfection By-Products. 14th Scientific Convention on Environmental Engineering and Architecture, Havana, Cuba (December 2008, presented by Prof. Federico Vagliasindi).

Occurrence of Inorganic Contaminants in Scales Formed in Drinking Water Distribution Systems. 2008 Water Quality and Technology Conference, Cincinnati, OH (November 2008)

Colloidal Mobilization of Lead by Chlorine in Drinking Water Distribution System. 2008 Water Quality and Technology Conference, Cincinnati, OH (November 2008, presented by Haizhou Liu)

Fractionation and Characterization of Natural Organic Matter Found in Municipal Wastewater. NOM2008 Natural Organic Matter: from Source to Tap. 4th IWA Specialist Conference, Bath, UK (September 2008)

HP SEC Data for Coagulated Drinking Water: Interpretation Based on Absorbance Spectra. NOM2008 Natural Organic Matter: from Source to Tap. 4th IWA Specialist Conference, Bath, UK (September 2008).

Protonation of NOM from the Rio Negro Basin: Comparison of Results of Potentiometric and Differential Absorbance Titrations. NOM2008 Natural Organic Matter: from Source to Tap. 4th

IWA Specialist Conference, Bath, UK (September 2008).

Characterization of proton and copper binding properties of NOM from an Australian drinking water source by differential absorbance spectroscopy. NOM2008 Natural Organic Matter: from Source to Tap. 4th IWA Specialist Conference, Bath, UK (September 2008).

Fluorescence of NOM and its Use to Predict DBP Formation. NOM2008 Natural Organic Matter: from Source to Tap. 4th IWA Specialist Conference, Bath, UK (September 2008, presented by Paolo Roccaro).

Using Differential Absorbance for Quantifying Removal of Organic Precursors for DBP Formation. Leading Edge Technologies IWA Conference., Zurich, Switzerland (June 2008, presented by Paolo Roccaro)

Modelling NOM Halogenation in Bromide Containing Waters. International Symposium on Sanitary and Environmental Engineering, Florence, Italy (June 2008, presented by Massimiliano Fabbricino).

Effect of Changing Disinfectants on Distribution System Lead and Copper Release. PNWS-AWWA 2008 Annual Conference, Vancouver, WA (May 2008, presented by Glen Boyd).

Effect of Changing Disinfectants on Distribution System Lead and Copper Release: Next Phase of Experiments, AWWA 2008 Annual Conference, Atlanta, GA (June 2008, presented by Glen Boyd).

Formation of Chlorinated and Brominated DBPs in Chlorinated Surface Water from Ancipa Reservoir (Sicily, Italy). 10th International Conference on the Environmental Science and Technology (CEST2007) Kos island, Greece (September 2007, presented by Paolo Roccaro).

Cryogenic Laser-Induced Time-Resolved Fluorescence Spectroscopy Studies of Uranium Adsorbed at Minerals and Soil sediments. Annual Conference of American Chemical Society, Boston, MA, August 2007 (presented by Zheming Wang).

Inorganics Accumulation and Release in Drinking Water Distribution Systems. Annual Conference of American Water Works Association, Toronto, Canada, June 2007 (presented by Melinda Friedman).

Impact of the Change in Disinfectant on Lead, Brass, and Copper Components in the Distribution Systems. Annual Conference of American Water Works Association, Toronto, Canada, June 2007 (presented by Glen Boyd).

Effects of Chlorine/Chloramine Change on Copper and Lead Release from Lead, Brass, and Copper Components in the Distribution Systems. American Water Works Association Conference on Distribution Systems, Reno, Nevada, March 2007 (presented by Kylee Dewis).

High-pH Permanganate Oxidation of Complexes of EDTA with Nickel and Other Metals. Conference on Complexing Agents between Science, Industry, Authorities and Users, Ascona, Switzerland, March 2007.

Studies of the Degradation of the Endocrine Disruptor Ethynyl Estradiol (EE2) in a Flow-Through Electrochemical Reactor. Annual Conference of American Chemical Society, Chicago, IL, March 2007 (presented by Jaeshin Kim).

Examination of Mechanisms and Yields of *In Situ* Generation of Hydroxyl Radicals and Ozone in a Flow-Through Electrochemical Reactor. Annual Conference of American Chemical Society, Chicago, IL, March 2007 (presented by Jaeshin Kim).

Unusual Interactions in the NOM/Chlorine/PbO_2 System and Their Relationships to Controls of

Disinfection By-Products and Lead Release. Annual Conference of American Chemical Society, Chicago, IL, March 2007.

Comparison of the Performance of Absorbance-Based Indices Developed to Quantify the Halogenation of Natural Organic Matter at Varying Chlorine Concentrations. Annual Conference of American Chemical Society, Chicago, IL, March 2007 (presented by Paolo Roccaro).

Probing the Formation of Individual Chlorinated and Brominated Disinfection By-Products using Fluorescence Indices. Annual Conference of American Chemical Society, Chicago, IL, March 2007 (presented by Paolo Roccaro)

Contributions of Kinetically Distinct Chromophores in NOM Chlorination Reactions: Results of Conventional and Stopped-Flow Absorbance Spectroscopy. Annual Conference of American Chemical Society, Chicago, IL, March 2007. Modeling of the EC Generation of Mixed Oxidants in an *In Situ* EC Reactor. International Water Association World Water Congress, Beijing, China, September 2006.

Key parameters and Kinetics of Oxidation of Lead (II) Solid phases by Chlorine in Drinking Water. 5th International Water Association Water Congress, Beijing, September 2006 (presented by Haizhou Liu).

Interactions of Natural Organic Matter with Lead Dioxide and Their Significance for Lead Release in Drinking Water. 13th Meeting of the International Humic Substances Society, Karlsruhe, August 2006.

Monitoring of Properties of Natural Organic Matter in the Potomac River: Fractionation, Halogenation and Spectroscopic Approaches. 13th Meeting of the International Humic Substances Society, Karlsruhe, August 2006.

Speciation of Uranyl Adsorbed on Gibbsite: A Time-Resolved Laser-Induced Fluorescence Spectroscopic Study. 15th Annual Goldschmidt Conference, Moscow, Idaho, May 2005.

Evaluation of Lead Leaching Rates During Stagnation Using Real-Time Corrosion Potential Monitoring and Modeling Methods. Annual Water Quality and Technology Conference, San Antonio, TX November 2004.

Applications of Differential Spectroscopy for Monitoring DBPs in Distribution Systems. Annual Water Quality and Technology Conference, San Antonio, TX November 2004.

Disinfection By-Products Formation and Use of Differential Spectroscopy to Monitor Halogenation in Coastal and Deep Ocean Seawater. NATO Seminar on the Evaluation of Alternative Treatment Systems to Obtain Safe Water, Salerno, Italy, September 2004.

Differential Spectroscopy: A Simple and Under-utilized Tool for Analyzing and Modeling DBP Formation. Annual American Water Works Association, June 2004.

Post-Optimization Lead and Copper Control: Alternative In-Home Monitoring Strategies. Annual Water Quality and Technology Conference, Seattle, WA, November 2002.

Carbonate Effects in the Electrochemical Oxidation of Arsenite. 224th National Meeting of the American Chemical Society, Boston, MA, August 2002.

Examination of the Performance of Metal Oxide Electrodes in Anodic Oxidations of Environmentally Important Organic Species. 224th National Meeting of the American Chemical Society, Boston, MA, August 2002.

Comparative Study of Electrochemical Reduction of Halogenated Natural Organic Matter and

Resorcinol. 224th National Meeting of the American Chemical Society, Boston, MA, August 2002.

Study of Rapid Reactions between Chlorine and Natural Organic Matter by Stopped-Flow Method. Humic Substances Seminar VI, Boston, MA, July 2002.

Interactions of Terbium with Humic Species and Examination of the Fluorophore-Metal Energy Transfer Processes. 11th Conference of International Humic Substances Society, Boston, MA, July 2002.

Identifying and Implementing the Optimal Corrosion Inhibitor for Your System. Annual American Water Works Association, New Orleans, LA, June 2002.

Development of an On-Line System to Monitor Corrosion in Drinking Water. Annual American Water Works Association, New Orleans, LA, June 2002.

Further Development of Differential Spectroscopy to Predict the Formation of Disinfection By-Products. Annual American Water Works Association, New Orleans, LA, June 2002.

Monitoring of Chlorinated Disinfection By-products in Drinking Water: Approach Based in Differential Spectroscopy. National Water Quality Monitoring Conference, Madison, WI, May 2002.

Use of Differential Spectroscopy to Study DBP Formation Reactions. Environmental Protection Agency STAR Drinking Water Workshop, Washington, DC, February 2001.

Theory and Applications of Differential Spectroscopy in the Studies and Transformations of Humic Species. Humic Substances Seminar V, Boston, MA, March 2001.

Studies of Combined Effects of ClO_2 and Chlorine/Chloramine on the Formation of Disinfection By-Products. Water Quality and Technology Conference, Salt Lake City, UT, November 2000.

Exploration of Correlations between NOM Fluorescence and Molecular Weight, 10th Conference of International Humic Substances Society, Toulouse, France, July 2000.

Electrochemical Reactions of Halogenated By-Products and Their Precursors in Potable Water. 8th International Fischer Symposium on Electrochemistry and Environment, Karlsruhe, Germany, June 2000.EXAFS Studies and Quantum-Chemical Simulations of Interactions of Metal Ions with Humic Substances: Effects of pH. Humic Substances Seminar IV, Boston, March 2000.

Study of Halogen Incorporation into Reactive Sites in Humic Species by Stopped-Flow Method. Humic Substances Seminar IV, Boston, March 2000.

Comprehensive Study of UV Absorption and Fluorescence Spectra of Suwannee River NOM Fractions. Humic Substances Seminar III, Boston, March 1999.

EXAFS Studies of the Chemical state of Lead and Copper in Corrosion Products on the Brass Surface. International XAFS Conference, Chicago, IL, August 1998. Coagulation of natural organic matter studied by UV absorbance and time-resolved fluorescence spectroscopy. Annual Water Quality and Technology Conference, Denver, CO, November 1997.

Change of UV absorbance as the master parameter for monitoring the DBP formation. Annual Conference of the American Water Works Association, Atlanta, GA, June 1997.

Oxidation of humic substances in chlorination reactions and its monitoring by a combination of UV and fluorescence spectroscopy. 8th Meeting of International Humic Substances Society, Wroclaw, Poland, September 1996.

Interaction of humic substances with lanthanides: study by time-resolved fluorescence spectroscopy. Workshop on Natural Organic Matter, Poitiers, France, September 1996.

UV spectra of natural organic matter: a consistent description and practical application. Workshop on Natural Organic Matter, Poitiers, France, September 1996.

Effects of humic substances on the corrosion of lead-containing material. Implications for metal release and speciation. Annual Conference of the American Water Works Association, Toronto, June 1996.

Application of UV spectroscopy to the studies of chlorination by-products formation. Annual Water Quality and Technology Conference, New Orleans, LA, November 1995.

A consistent theory of UV spectra of natural organic matter and its applications to chlorination studies. 210th National Meeting of the American Chemical Society, Chicago, IL, August 1995.

Effects of NOM on the corrosion and formation of pits on copper. Annual Conference of the American Water Works Association, New York, NY, June 1994.

Investigation of water treatment options to reduce corrosion of metals in Portland water. Annual Water Quality and Technology Conference, Miami, FL, November 1993.

Professional Society Membership

American Geophysical Union (2006-present)

American Chemical Society (1995-present)

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

American Water Works Association (1996-2014)

Electrochemical Society (2018-2019)

European Membrane Society (2018-present)

International Desalination Association (2010-2013)

International Humic Substances Society (1996-2019)

International Water Association (2004-present)

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

International Society of Electrochemistry (1999-2003)

European Association of Organic Geochemistry (2000-2001)