

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.

Editor, member of the Editorial Board, *Water Research*, January 2010-present.

Chair of the Council on Promotion and Tenure, University of Washington, College of Engineering, 2016-2017, 2021-2022

Member of the Academic Committee, the International Joint Laboratory of Regional Pollution Control, Peking University, Beijing, China, 2019-2021.

Visiting Professor (Distinguished Foreign Experts Program of the Chinese Government), Peking University, Beijing, China August 2013 – 2018.

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.

Refereed Archival Journal Publications

Baccini L., Vagliasindi F., Korshin G.V., Roccaro P. (2026). Simultaneous Control of Microbial Inactivation and DBPs Formation Using Differential Absorbance as a Surrogate Performance Parameter. Submitted to *Journal of Environment Chemical Engineering*, 14 (3): 122666 <https://doi.org/10.1016/j.jece.2026.122666>.

Yang Deng, Hanzhe Wang, Lei Zheng, Zhongli Liu, Gregory Korshin and Mingquan Yan (2025) A universal model to predict DOC removal by coagulation based on UV-Visible absorption spectrum. *Water Research*, 286: 124160, <http://dx.doi.org/10.1016/j.watres.2025.124160>.

Saurabh Shukla, Ramsha Khan, Federico G.A. Vagliasindi, Gregory V. Korshin, Paolo Roccaro (2025) Effects of microplastics on water disinfection and formation of disinfection by-products. *Current Opinion in Environmental Science & Health*, 46: 100632, <https://doi.org/10.1016/j.coesh.2025.100632>.

Mingquan Yan, Zhongli Liu, Shansheng Mo, Gregory Korshin (2025) Unveiling ongoing biogeochemical dynamics of CDOM from surface to deep ocean. *Nature Communications*, 16: 5202, <https://doi.org/10.1038/s41467-025-60510-0>.

Mingquan Yan, Shansheng Mo, Zhongli Liu, Gregory Korshin (2025) Absorptivity is Inversely Proportional to the Spectral Slope in the Absorbance spectra of CDOM. *Environmental Science & Technology*, 59: 7156-7164, <https://doi.org/10.1021/acs.est.5c01019>.

Filippo Fazzino, Paolo Roccaro, Antonino Di Bella, Erica Gagliano, Federico Vagliasindi, Gregory Korshin (2025) Use of Fluorescence for Real-Time Monitoring of Contaminants of Emerging Concern in (Waste)water: Perspectives for Sensors Implementation and Process Control. *Journal of Environmental Chemical Engineering* 13: 115916, <https://doi.org/10.1016/j.jece.2025.115916>

Chenyang Zhang, Po-An Chen, Gregory V. Korshin, Andrey M. Kuznetsov, Alexey Masliy and Mingquan Yan (2025) Differential Absorbance and EXAFS Examination of pH Effects on the

Inner Coordination Shell of Copper Complexes with Humic Substances. *Chemosphere*, 370: 143949, <https://doi.org/10.1016/j.chemosphere.2024.143949>.

Stefano Cairone, Shadi W. Hasan, Kwang-Ho Choo, Mohammad Reza Nikoo, Gregory V. Korshin, Tiziano Zarra, Vincenzo Belgiorno, Vincenzo Naddeo (2024) Revolutionizing Wastewater Treatment with Smart and Cutting-Edge Technologies: Pioneering Sustainable and Efficient Solutions within Circular Economy and Carbon Neutrality Goals. *Journal of Water Process Engineering*, 63: 105486, <https://doi.org/10.1016/j.jwpe.2024.105486>.

Alessia Giannattasio, Veronica Iuliano, Domenico Giaquinto, Giuseppiuna Oliva, Antonio Buonerba, Alfonso Grassi, Carmine Capacchione, Cuomo Mara Teresa, Vincenzo Belgiorno, Shadi Hasan, Gregory V. Korshin, Damia Barselò, Kwang-Ho Choo, Vincenzo Naddeo (2024) Micro(nano)plastics from synthetic oligomers persisting in Mediterranean seawater: comprehensive NMR analysis, concerns and origins. *Environment International*, 190: 108839, <https://doi.org/10.1016/j.envint.2024.108839>.

Zhongli Liu, Shansheng Mo, Fei Liu, Gregory Korshin, Mingquan Yan (2024) A Novel Algorithm to Extrapolate Ultraviolet Absorption of Chromophoric Dissolved Organic Matter from Remote Sensing Ocean Color Data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 214: 104-118, <https://doi.org/10.1016/j.isprsjprs.2024.05.026>.

Mary Vermi Aizza Corpuz, Laura Borea, Tiziano Zarra, Shadi W. Hasan, Gregory V. Korshin, Antonio Buonerba, Vincenzo Belgiorno, and Vincenzo Naddeo (2024) Electro living membrane bioreactor for highly efficient wastewater treatment and fouling mitigation: influence of current density on process performances. *Science of the Total Environment*, 931, 172896, <https://doi.org/10.1016/j.scitotenv.2024.172896>.

Giuseppina Oliva, Antonio Buonerba, Alfonso Grassi, Shadi W. Hasan, Gregory V. Korshin, Vincenzo Belgiorno, Vincenzo Naddeo, Tiziano Zarra (2024) Microalgae to biodiesel: a novel method for high-quality lipids recovery and in-situ transesterification to fatty acid methyl esters. *Journal of Environmental Management*, 357, 120830, <https://doi.org/10.1016/j.jenvman.2024.120830>.

Yang Deng, Shansheng Mo, Gregory V. Korshin, Mingquan Yan (2024) A universal model to predict yields of THMs and HAAs based on UV-Visible absorption spectra. *Water Research*, 254: 121367, <https://doi.org/10.1016/j.watres.2024.121367>.

Peizeng Yang, Jiayue Dong, Gregory V. Korshin, Haiyan Wang, Junhe Lu (2024). Formation of N-Nitrosodimethylamine by Sunlight Irradiation of Dimethylamine Compounds in the Presence of Nitrite. DOI *ES&T Water* 24 (1): 208-216, <https://doi.org/10.1021/acsestwater.3c00536>.

Lei Zheng, Feng Xiao, Xinyi Zhang, Yang Deng, Shansheng Mo, Zhongli Liu, Xin Gu, Gregory V. Korshin, Norbert Hertkorn, Mingquan Yan (2023). Evaluation of the Fate of Wastewater Effluent Organic Matter in a Receiving River. *Journal of Hazardous Materials*, 463: 132873, <https://doi.org/10.1016/j.jhazmat.2023.132873>.

Xin Gu, Chenyang Zhang, Shansheng Mo, Gregory V. Korshin, Mingquan Yan (2023) Insights into the Nature of Molecules of Natural Organic Matter Binding with Copper (II) Cation: Interpretation based on FT-ICR-MS and Differential UV-Vis Absorbance Spectra. *ES&T Water*, 3 (10): 3315-3322, <https://doi.org/10.1021/acsestwater.3c00296>.

Zizhuo Wei, Na Li, Xinyi Zhang, Lei Zheng, Shansheng Mo, G.V.Korshin, Mingquan Yan (2023) Characterizing Photochemical Production Carboxyl Content of Dissolved Organic Matters Using Absorbance Spectroscopy Combined with FT-ICR MS. *Chemosphere*, 344: 140352, <https://doi.org/10.1016/j.chemosphere.2023.140352>.

Jiayue Dong, Peizeng Yan, Gregory V. Korshin, Junhe Lu (2023) Bromide Catalyzes the Transformation of Nitrite by Sulfate Radical Oxidation. *ES&T Water*, 3 (9): 3105-3112, <https://doi.org/10.1021/acsestwater.3c00257>.

Mingquan Yan, Zhongli Liu, Gregory V. Korshin, Shansheng Mo, Chenyang Zhang (2023) Identification of Protonation-active Chromophores in Natural Organic Matter. *Water Research*, 244:120522, <https://doi.org/10.1016/j.watres.2023.120522>.

Carlos R. Cattaneo, Vincenzo Naddeo, Gregory V. Korshin, Raul Muñoz, Vincenzo Belgiorno, Tiziano Zarra (2023) Biological desulfurization of biogas: a comprehensive review on microbial sulfide metabolism and related biotechnologies. *Science of the Total Environment*, 893: 164689, <https://doi.org/10.1016/j.scitotenv.2023.164689>.

Carlo Cabrereros, Mary Vermi Aizza Corpuz, Fabiano Castrogiovanni, Laura Borea, Anna Sandionigi, Giovanni Vigliotta, Florencio Jr. Ballesteros, Sebastià Puig, Shadi W. Hasan, Gregory V. Korshin, Vincenzo Belgiorno, Antonio Buonerba, and Vincenzo Naddeo (2023) Unravelling Microbial Community by Next-Generation Sequencing in Living Membrane Bioreactors for Wastewater Treatment. *Science of the Total Environment*, 163965, <https://doi.org/10.1016/j.scitotenv.2023.163965>.

Bi-Cun Jiang, Ye-Chao Tian, Ai-Min Li, Ze-Tao Wu, Chang Lu, Hai-Ou Song, Rong Ji, Wen-Tao Li, Gregory V. Korshin (2023). Changes of the Properties of Dissolved Organic Matter, Formation of Chlorate and Perchlorate in Electrochemically Treated Landfill Leachate, and Development of Spectroscopic Indicators for Process Optimization. *Water Research*, 232: 19702, <https://doi.org/10.1016/j.watres.2023.119702>.

Park, Hyeona, S.S.A.Shah, G.V.Korshin, I.Angelidaki, Kwang-Ho Choo (2023) The impact of sunlight irradiation on fouling behaviors and microbial communities in membrane bioreactors. *Journal of Membrane Science*, 672: 121443, <https://doi.org/10.1016/j.memsci.2023.121443>.

Po-An Chen, H. Paul Wang, An.M.Kuznetsov, A.N.Masliy, Siqi Liu and G.V.Korshin (2023) XANES/EXAFS and Quantum Chemical Study of the Speciation of Arsenic in the Condensate Formed in Landfill Gas Processing: Evidence of the Dominance of As-S Species. *Journal of Hazardous Materials*, 445, 130522, <https://doi.org/10.1016/j.jhazmat.2022.130522>.

Yang, Peizeng; Liu, Jiating; Korshin, Gregory V.; Ji, Yuefei; Lu, Junhe (2022). New insights into the role of nitrite during the degradation of tetrabromobisphenol S by sulfate radical oxidation. *Environmental Science & Technology*, 56 (24): 17743-17752, <https://doi.org/10.1021/acs.est.2c06821>.

Wei Li, Zhongfang Min, Kai Liu, Jiping Li, Zhang Meng, Gregory V. Korshin, Pingping Li, Jiangang (2022) Transformation of macrolide antibiotics during chlorination process: kinetics, degradation products, and comprehensive toxicity evaluation. *Science of the Total Environment*, 159800, <https://doi.org/10.1016/j.scitotenv.2022.159800>.

Christoph Gatz, Vincenzo Belgiorno, Tiziano Zarra, Gregory V. Korshin, Vincenzo Naddeo (2022). Sewage Sludge-Derived Biochar for Micropollutant Removal: A Brief Overview with Emphasis on European Water Policy. *Environmental Sciences Proceedings*, 21(1), 77, <https://doi.org/10.3390/environsciproc2022021077>.

Liu, Siqi, Jaeshin Kim, G.V.Korshin (2022) Comparison of the Formation of By-Products Produced by the Oxidation of Natural Organic Matter in Ozonation and Electrochemical Treatment of Surface Water. *Chemosphere*, 307: 135664, <https://doi.org/10.1016/j.chemosphere.2022.135664>.

Millanar-Marfa, J.M.J., F.Castrogiovanni, M.J.A.Corpuz, L.Borea, C.Cabreros, M.G.G. De Luna,

F.Ballesteros, G.Vigliotta, S.W.Hasan, G.V.Korshin, A.Buonerba, V.Belgiorno, and V.Naddeo (2022). Electro-encapsulated self-forming dynamic membrane bioreactor (e-ESFDMBR): A new concept of efficient wastewater treatment and membrane fouling control. *NPJ Clean Water*, 5 (1): 1-13, <https://doi.org/10.1038/s41545-022-00184-z>.

Mary Vermi Aizza Corpuz; Tiziano Professor Zarra; Shadi W. Hasan; Gregory V. Korshin; Vincenzo Belgiorno; Vincenzo Naddeo (2022). Advances in Virus Detection Methods for Wastewater-Based Epidemiological Applications. *Case Studies in Chemical and Environmental Engineering* 6 (22), 100238, <https://doi.org/10.1016/j.cscee.2022.100238>.

Yang, Peizeng, G.V.Korshin, Yuefei Ji, Junhe Lu (2022) Identification of the Pathways of the Generation of Nitrated Byproducts Formed from Ammonium and Nitrite Substrates During Sulfate Radical Oxidation. *Environmental Science & Technology*, 56 (12): 7935-7944, <https://doi.org/10.1021/acs.est.2c00702>.

Ruiqian Liu; Lu Wang; Siqi Liu*; Yonghao Zhang; Gregory V. Korshin; Weiqing Han (2022) Active chlorine-mediated oxidation of 5-Fluorouracil on a hierarchically ordered macroporous RuO₂ electrode. *Chemosphere*, 134728, <https://doi.org/10.1016/j.chemosphere.2022.134728>.

Siqi Liu, Andrey M. Kuznetsov, Weiqing Han, Alexei N. Masliy, Gregory V. Korshin (2022). Removal of Dimethylarsinic Acid (DMA) in the Fe/C system: Roles of Fe(II) Release, DMA/Fe(II) and DMA/Fe(III) Complexation. *Water Research*, 118093, <https://doi.org/10.1016/j.watres.2022.118093>.

Millanar-Marfa, J.M.J., F.Castrogiovanni, M.J.A.Corpuz, L.Borea, C.Cabreros, M.G.G. De Luna, F.Ballesteros, G.Vigliotta, S.W.Hasan, G.V.Korshin, A.Buonerba, V.Belgiorno, and V.Naddeo (2022). Electro-encapsulated self-forming dynamic membrane bioreactor (e-ESFDMBR): A new concept of efficient wastewater treatment and membrane fouling control. *NPJ Clean Water*, 5 (1): 1-13 (<https://doi.org/10.1038/s41545-022-00184-z>).

Mary Vermi Aizza Corpuz; Tiziano Professor Zarra; Shadi W. Hasan; Gregory V. Korshin; Vincenzo Belgiorno; Vincenzo Naddeo (2022). Advances in Virus Detection Methods for Wastewater-Based Epidemiological Applications. *Case Studies in Chemical and Environmental Engineering* 6 (22), 100238.

Yang, Peizeng, G.V.Korshin, Yuefei Ji, Junhe Lu (2022) Identification of the Pathways of the Generation of Nitrated Byproducts Formed from Ammonium and Nitrite Substrates During Sulfate Radical Oxidation. *Environmental Science & Technology*, 56 (12): 7935-7944 (<https://doi.org/10.1021/acs.est.2c00702>).

Ruiqian Liu; Lu Wang; Siqi Liu*; Yonghao Zhang; Gregory V. Korshin; Weiqing Han (2022) Active chlorine-mediated oxidation of 5-Fluorouracil on a hierarchically ordered macroporous RuO₂ electrode. *Chemosphere*, 134728, <https://doi.org/10.1016/j.chemosphere.2022.134728>.

Siqi Liu, Andrey M. Kuznetsov, Weiqing Han, Alexei N. Masliy, Gregory V. Korshin (2022). Removal of Dimethylarsinic Acid (DMA) in the Fe/C system: Roles of Fe(II) Release, DMA/Fe(II) and DMA/Fe(III) Complexation. *Water Research*, 118093 (<https://doi.org/10.1016/j.watres.2022.118093>).

Wei Li, Chun Ding, Gregory V. Korshin, Jiping Li, Feng Cai, Hu Cheng, Meng Zhang; Jiangang Han (2021). Effect of chlorination on the characteristics of effluent organic matter and the phototransformation of sulfamethoxazole. *Chemosphere*, 133193 (<https://doi.org/10.1016/j.chemosphere.2021.133193>).

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 (2022) Identification of pterins as the

characteristic fluorophores in dissolved organic matter: a contribution from cyanobacteria. *Chemical Engineering Journal*, 428: 131154.

Bo Yang, Chengjin Wang, Xin Cheng, Yongli Zhang, Wei Li, Jingquan Wang, Zixin Tian, Wenhai Chu, Gregory V. Korshin, Hongguang Guo (2021) Interactions Between the Antibiotic Tetracycline and Humic Acid: Examination of the Binding Sites, and Effects of Complexation on the Oxidation of Tetracycline. *Water Research*, 202: 117239.

Gaurav Mahamuni; He, Jiayang; Rutherford, J.; Ockerman, B.; Seto, E.; Majumdar, A.; Korshin, G.V., Novosselov, I. (2021) Solid Phase Excitation-Emission Matrix Spectroscopy for Chemical Analysis of Combustion Aerosols. *PLOS One*, 16 (5): e025 1664, <https://doi.org/10.1371/journal.pone.0251664>.

Antonio Buonerba, Mary Vermi Aizza Corpuz, Florencio Ballesteros, Kwang-Ho Choo, Shadi W. Hasan, Gregory V. Korshin, Vincenzo Belgiorno, Damià Barceló and Vincenzo Naddeo (2021). Coronavirus in Water Media: Analysis, Fate, Disinfection and Epidemiological Applications. *Journal of Hazardous Materials*, 415: 125580.

Jessa Marie J. Millanar-Marfa, Laura Borea, Shadi Wajih Hasan, Kwang-Ho Choo, Gregory V. Korshin, Mark Daniel G. de Luna, Florencio C. Ballesteros Jr., Vincenzo Belgiorno, Vincenzo Naddeo (2021). A comprehensive review of self-forming dynamic membranes for wastewater treatment. *Separation and Purification Review*, 1-17 (<https://doi.org/10.1080/15422119.2021.1887223>).

Vincenzo Senatore, Tiziano Zarra, Kwang-Ho Choo, Shadi W. Hasan, Gregory Korshin, Vincenzo Belgiorno, Vincenzo Naddeo (2021). Environmental spread factors and underestimated risks factors of SARS-CoV-2: Indoor vs. outdoor transmission. *Euro-Mediterranean Journal for Environmental Integration*, 6 (1):1-9.

Chenyang Zhang, Xuze Han, G.V.Korshin, An.M.Kuznetsov, Mingquan Yan (2021) Interpretation of the differential spectra of metal/DOM complexes based on the quantum chemical simulations for the model compound esculetin. *Chemosphere*, 276, 130043 (<https://doi.org/10.1016/j.chemosphere.2021.130043>).

Yan, Mingquan, Chengyang Zhang, Paolo Roccaro, G.V.Korshin (2021) Quantitation of the Formation of Unstable Disinfection By-Products Based on the Differential Spectroscopy Approach. *Chemosphere*, 268: 129241.

Naddeo, V, Gregory V. Korshin (2020) Water, Energy and Waste: the great European deal for the environment. *Science of the Total Environment*, 142911. (<https://doi.org/10.1016/j.scitotenv.2020.142911>).

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. *Chemosphere*, 261: 128189.

Naddeo, V., M.A. Corpuz, J. Ballesteros, T. Zarra, G.V.Korshin, V. Belgiorno (2020). Viruses in Wastewater: occurrence, abundance and detection methods. *Science of the Total Environment*, 745: 140910.

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. *Water Research*, 185: 116206.

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*, 181: 116151 (<https://doi.org/10.1016/j.watres.2020.116151>).

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.

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*, 54 (13): 8198-8209.

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 PbO₂ 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 H₃AsO₃-CO₃²⁻/HCO₃⁻-H₂O 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 (<https://doi.org/10.1016/j.chemosphere.2019.07.003>).

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 (<https://doi.org/10.1016/j.watres.2019.05.086>).

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Luigi Marino, Erica Gagliano, Massimiliano Sgroi, Tarun Anumol, Shane A. Snyder, Gregory Korshin & Paolo Roccaro (2024) Fluorescence-Based Approach for Monitoring Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) During Granular Activated Carbon (GAC) Adsorption. In: Mannina, G., Cosenza, A., Mineo, A. (eds) *Resource Recovery from Wastewater Treatment. ICWRR 2024. Lecture Notes in Civil Engineering*, vol

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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

Sources, Sinks and Accumulation of Arsenic and Antimony in Engineered Systems: Do We Know Enough? Tamkang University, Taipei, Taiwan (planned for June 2026).

Cycles of Arsenic and Antimony in Biomethane/Landfill Gas Operations. National Cheng Kung University, Tainan, Taiwan (planned for June 2026).

Geogenic Contaminants in the Environment. Xian University of Architecture and Technology, (March 2026).

Cycles of arsenic and antimony in biomethane/landfill gas operations. Hong Kong University of Science and Technology, Tsinghua Shenzhen International School, Xian University of Architecture and Technology, Xi'an Jiaotong University (March 2026).

Unexpected Behavior of Arsenic and Antimony in Renewable Natural Gas Systems: Volatilization, Interception and Cycling in Landfills. Peking University, Tongji University, Southwest University, Beijing Normal University, China (September 2025).

Enhanced Cycling of Arsenic and Antimony in Engineered Systems: Volatilization and Interception in Landfills. University of Catania, Italy (June 2025).

Mobility of Arsenic and Antimony in Engineered Systems: Complex Effects of Volatilization and Interception in Landfills. Karlsruhe Institute of Technology, Germany (February 2025).

Emerging Contaminants and Heavy Metals in Water Media: Increasing Loads and Control Options, Urban Water Security Academy, University of Salerno (June 2024, **keynote presentation**).

Effects of Ambient Temperature and Other Parameters on the Variability of DBP Concentrations in a Large Drinking Water Distribution System: Data of Online Monitoring. Water Management in Changing Conditions (WMCC) Conference, Munich, Germany (May 2024).

Halogenation of natural organic matter and formation of disinfection by-products: quantitation of reaction pathways and yields based on in situ spectroscopy. Hong Kong University of Science and Technology Forum on Innovative Disinfection and Emerging Disinfection Byproducts. (March 2023, **keynote presentation**, online).

Interactions of Alginate/Toluidine Blue Complexes with PES Membrane and Examination of Fouling Development Mechanisms. Nanofiltration 2022: Principles, Applications and New Materials, Achalm, Germany (June 2022).

Increased Mobility of Heavy Metals in Landfill Leachate. Xi'an University of Architecture and Technology (May 2022, online seminar).

Emerging Contaminants and Heavy Metals in Landfill Leachate: University of Salerno, Italy (April 2022).

Unexpected Environmental Challenges in Green Energy: Arsenic in Landfill Gas: University of Catania, Italy (April 2022).

Green Energy and an Unexpected Environmental Challenge: Arsenic in Landfill Gas. Tianjin University (January 2021, online seminar).

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, **keynote 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

Occurrence and Removal of PFAS in Landfill-Related Matrices. Pacific Northwest Clean Water Association Conference, Spokane, WA (September 2026, to be presented by Yage Li).

Removal of Arsenic from Landfill Leachate by Coagulation: Effects of As Speciation. Pacific Northwest Clean Water Association Conference, Spokane, WA (September 2026, to be presented by Yage Li).

Removal of Arsenic and Antimony from Landfill Gas Condensate via Micro-electrolysis. Pacific Northwest Clean Water Association Conference, Spokane, WA (September 2026, to be presented by Annapaola Panico).

Beyond Removal: Fate, Mechanisms, and Risks of Arsenic and Antimony during Micro-Electrolysis Treatment of Landfill Gas Condensate. American Chemical Society Conference, Chicago (August 2026, to be presented by Annapaola Panico).

Landfill gas treatment solids as sinks and sources of arsenic and antimony in renewable biomethane operations: Release of As/Sb under disposal-relevant conditions. American Chemical Society Conference, Chicago (August 2026, to be presented by Yage Li).

Exploring the applicability of differential absorbance to simultaneously quantify and control microbial inactivation and DBPs formation. 19th International Conference on Environmental Science and Technology CEST2025, Cos, Greece (September 2025, presented by Paolo Roccaro).

Fundamentals of DBP Formation from the Standpoint of Differential Spectroscopy: Step-Wise Halogen Incorporation and Its Phase Domain Interpretation. 4th IWA Disinfection/Disinfection By-Products (DDBP) Conference, Almeria, Spain (October 2024, presented by Paolo Roccaro)

Fluorescence-based approach for monitoring perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) during granular activated carbon (GAC) adsorption, International Conference on Wider-Uptake of Water Resource Recovery from Wastewater Treatment (ICWRR2024), Palermo, Italy (June 2024, presented by Paolo Roccaro).

Changes of Fluorescence Excitation-Emission Matrices during Wastewater Treatment in a Granular Sludge Reactor and the Correlations with Nutrient Removal, International Conference on Wider-Uptake of Water Resource Recovery from Wastewater Treatment (ICWRR2024), Palermo, Italy (June 2024).

Examination of Fouling Layer Development Based on In Situ and Ex Situ Measurements of the Absorbance of Feed, Filtrate and PES Membrane. IWA Membrane Technology Conference 2023, St. Louis (July 2023).

Highly efficient wastewater treatment and fouling mitigation by living membrane® in electro-encapsulated self-forming membrane bioreactor. IWA Membrane Technology Conference 2023, St. Louis (July 2023), presented by Vincenzo Naddeo.

Removal of the organo-arsenic compound dimethylarsinic acid by zero valence iron/activated carbon treatment. 5th Efficient Water Systems (EWaS5) International Conference, Naples, Italy (July 2022).

Sewage sludge-derived biochar for the removal of micropollutants from wastewater: a review with special emphasis on the priority substances of the EU water framework directive. 5th Efficient Water Systems (EWaS5) International Conference, Naples, Italy (presented by Vincenzo Naddeo, July 2022).

Prediction of the formation of bromate in ozonated wastewaters with variable bromide concentrations using UV absorbance and fluorescence indicators. 5th Efficient Water Systems (EWaS5) International Conference, Naples, Italy (presented by Barbara Ruffino, July 2022).

On-line Monitoring of Disinfection By-Products in Chlorinated Waters by Fluorescence Measurements. 3rd IWA Conference on Disinfection and DBPs. Milan, Italy (presented by Paolo Roccaro, June 2022).

Comparison of the formation of aldehydes and carboxylic acid in electrochemically treated and ozonated surface water. 3rd IWA Conference on Disinfection and DBPs. Milan, Italy (June 2022).

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

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

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

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, presented by 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 of 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 Dihaloacetonitriles 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. WaterReuse 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 spectrophotometer. 7th International Conference on Intelligent Sensors, Sensor Networks and Information Processing, Adelaide, Australia (December 2011, presented by Amanda Byrnes).

Reactivity of iodine tablets with natural waters: SUVA and iodoform formation kinetics. Micropollutants and Ecotoxicology 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/H₂O₂ and UV/H₂O₂ 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 PbO₂ 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 Fabbicino).

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/PbO₂ 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 ClO₂ 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 Memberships

American Geophysical Union (2006-2020)

American Chemical Society (1995-2025)

Association of Environmental Engineering and Science Professors (2000-2025)

American Water Works Association (1996-2014)

Electrochemical Society (2018-2019)

European Membrane Society (2018-2021)

International Desalination Association (2010-2013)

International Humic Substances Society (1996-2020)

International Water Association (2004-present)

International X-Ray Absorption Spectroscopy Society (1998-2018)

International Society of Electrochemistry (1999-2003)

European Association of Organic Geochemistry (2000-2001)