

CURRICULUM VITAE

Keisuke Ikehata, Ph.D., P.E., P.Eng.

CURRENT ACADEMIC POSITIONS HELD:

Assistant Professor

Ingram School of Engineering
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Adjunct Professor

Department of Chemical and Environmental Engineering
University of California, Riverside
A220 Bourns Hall
Riverside, California 92521
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EDUCATION:

- Special Engineering Student, University of Alberta, 2007-2008: Toward Professional Engineer Registration in the Province of Alberta, Canada (12 courses taken, GPA = 3.8/4.0)
- Ph. D. (Civil & Environmental Engineering, November 20, 2003), University of Alberta, 1999-2003: Dissertation title “Production, Characterisation and Evaluation of *Coprinus* Peroxidase for Phenolic Wastewater Treatment”, Advisers: Drs. Ian D. Buchanan and Daniel W. Smith
- M. Eng. (Civil Engineering, Thesis Option, June 7, 1999), McGill University, 1997-1999: Thesis title “Characterisation of Tyrosinase for the Treatment of Aqueous Phenols”, Adviser: Dr. James A. Nicell
- B. Eng. (Applied Chemistry, March 21, 1996), Doshisha University, 1992-1996: Thesis title “Synthesis of Phenanthridine Terminated Poly(L-Glutamic Acid) as a DNA Intercalating Polypeptide” (in Japanese), Advisers: Drs. Masazo Niwa and Nobuyuki Higashi

RESEARCH INTERESTS & AREAS OF EXPERTISE:

- Advanced Water and Wastewater Treatment, Desalination and Water Reuse
 - Ozone, ultraviolet, and advanced oxidation processes (AOPs)
 - Disinfection and disinfection by-product
 - Taste & odor control
 - Brackish groundwater desalination
 - Water reclamation and reuse (non-potable and potable reuse)
 - Novel biological treatment using algae and fungi
 - Novel analytical techniques for potable reuse
 - Industrial and agricultural wastewater management

- Environmental Biochemistry, Microbiology and Toxicology
 - Novel biocatalysts for environmental applications (waste treatment, bioremediation, and waste bioconversion, energy production, and reuse)
 - Xenobiotics toxicology and human and environmental health risk assessment
 - Toxicology of carcinogenic disinfection byproducts (e.g., bromate)
- Environmental Chemistry and Geochemistry
 - River, lake, and reservoir water quality management
 - Contaminated site and groundwater remediation
 - Fate and transport of trace organic and inorganic contaminants
 - Irrigation water quality improvement
 - Stormwater quality management

PROFESSIONAL AFFILIATIONS:

- Member, American Chemical Society, 1999 (Orange County Section, 2009)
- Member, American Water Works Association, 2006 (Western Canada Section 2006-2009, California-Nevada Section, 2009)
- Member, Chemical Society of Japan, 1995
- Member, International Ozone Association – Pan American Group, 2006
- Member, International Water Association, 2018
- Member, Japan Ozone Association, 2014
- Member, Japanese Society of Environmental Toxicology, 1998
- Member, Japanese Society of Phycology, 2017
- Member, Mycological Society of Japan, 2006
- Member, Water Environment Federation, 2006 (Western Canada Section 2006-2009, California Water Environment Association, 2009)

PROFESSIONAL REGISTRATIONS:

- Professional Engineer (Environmental), Association of Professional Engineers, Geologists and Geophysicists of Alberta, August 24, 2011, License # 87949
- Professional Engineer (Environmental), Arizona Board of Technical Registration, January 22, 2013, License # 54466

PROFESSIONAL ACTIVITIES:

- Chair (2019-2020), Chair Elect (2017-2018), Alternate Councilor (2016-present), and Executive Committee Member (2014-present), Environmental Committee Member (2013-present), Orange County Local Section, American Chemical Society
- Associate, Committee on Environmental Improvement, American Chemical Society, 2017-present.
- Vice President, Executive Operating Committee and Board Member, International Ozone Association-Pan American Group, 2017-present.
- Chair, Technical Program Committee, International Ozone Association-Pan American Group, 2018-present.
- Member, Editorial Board, *Ozone: Science and Engineering*, 2017-present.
- Chair (2018-present), Vice chair (2017-2018), Joint Section Research Committee, American Water Works Association (Committee member since 2014).

- Chair (2017-present), Vice chair (2015-2017), Secretary (2013-2015), Research Committee, California-Nevada Section of the American Water Works Association, 2015-2017 (Committee member since 2012).
- Member, Water Quality Subcommittee, Promotion of Ozone Technologies in Drinking Water Treatment in Japan, Japan Ozone Association, 2014-present.
- Co-chair, Technical Program Committee, International Ozone Association World Congress in Washington, DC, August 13-17, 2017.
- Co-chair, Technical Program Committee, International Ozone Association-Pan American Group 2016 Annual Conference in Las Vegas, Nevada, August 28-31, 2016.
- Program Co-chair (with Dr. Michael Kleinman, University of California, Irvine), 2015 Western Regional Meeting of the American Chemical Society in San Marcos, California, November 6-8, 2015.
- Member, Technical Program Committee, International Ozone Association-Pan American Group 2015 Annual Conference in Dallas, Texas, September 19-22, 2015.
- Member, Technical Program Committee, International Ozone Association-Pan American Group 2014 Annual Conference in Montreal, Quebec, August 24-27, 2014.
- Member, Technical Program Committee, 3rd Joint International Ozone Association and International Ultraviolet Association World Congress in Las Vegas, Nevada, September 22-25, 2013.
- Member, Technical Program Committee, International Ozone Association – Pan American Group 2012 Annual Conference in Milwaukee, Wisconsin, September 23-26, 2012.
- Co-Chair (with Mr. Eric C. Wert, Southern Nevada Water Authority), Technical Program Committee, International Ozone Association – Pan American Group 2010 Annual Conference in Seattle, Washington, September 19-22, 2010.
- Member, Technical Program Committee, 19th Ozone World Congress & Exhibition in Tokyo, Japan, August 31-September 3, 2009.
- Co-Organizer (with Dr. Tadao Mizuno, Kyoto University) and Modulator, Emerging Contaminants Pre-Conference Workshop, 19th Ozone World Congress & Exhibition in Tokyo, Japan, August 31, 2009.
- Co-Chair (with Dr. Daniel W. Smith, University of Alberta), Technical Program Committee, International Ozone Association – Pan American Group 2008 Annual Conference in Orlando, Florida, August 24-27, 2008.
- Vice Chair, Technical Program Committee, International Ozone Association-International Ultraviolet Association Joint World Congress in Los Angeles, California, August 27-29, 2007.
- Mini-symposium Co-Organizer and Co-Chair (with Dr. Shane A. Snyder, Southern Nevada Water Authority), International Ozone Association-International Ultraviolet Association Joint World Congress in Los Angeles, California, August 27-29, 2007.
- Member, Technical Program Committee, International Ozone Association – Pan American Group Annual Conference in Arlington, Texas, September 17-20, 2006.
- Member, Water Environment Federation Technical Review Committee – Health Effects Associated with Wastewater Treatment, Disposal, and Reuse, 2006-2010, 2011-2015.
- Peer reviewer:
 - Journals: *AICHE Journal*, *Applied Catalysis B: Environmental*, *Applied Engineering in Agriculture*, *Applied Water Science*, *Bioresource Technology*, *Biotechnology and Bioengineering*, *Biotechnology Progress*, *Canadian Journal of Microbiology*, *CAB Reviews*, *Chemical Engineering Journal*, *Chemosphere*, *Enzyme and Microbial Technology*, *Environment International*, *Environmental Chemistry Letters*, *Environmental Research*, *Environmental Science & Technology*, *Environmental Toxicology and Chemistry*, *International Journal of Environmental Analytical Chemistry*, *International Journal of Quantum Chemistry*, *Journal of Advanced Oxidation*

Technologies, Journal of Chemical Technology and Biotechnology, Journal of Environmental Engineering, Journal of Environmental Engineering and Science, Journal of Environmental Management, Journal of Water and Environment Technology, Ozone: Science and Engineering, Process Biochemistry, Recent Patents on Engineering, Science of the Total Environment, Transactions of the ASABE, Water Research

- Conferences: 2017 IOA World Congress (Washington, DC), IOA-PAG Annual Conferences (2008, 2010, 2012, 2014, 2015, 2016), 2013 IOA-IUVA Joint World Congress (Las Vegas, Nevada), 2010 IWA World Water Congress (Montreal, Quebec), IOA-IUVA Joint World Congress 2007 (Los Angeles, California)
- Grants: Australian Antarctic Science Program (Australia), Environment and Water Industry Programme Office, PUB (Singapore), National Research Foundation (Singapore), Swiss National Science Foundation (Switzerland)

SCHOLARSHIPS & AWARDS:

- Professional Development Fund Award for UCR Unit 18 Members, the University of California, Riverside – June 2019
- Professional Development Fund Award for UCR Unit 18 Members, the University of California, Riverside – June 2018
- Service Recognition Award, Western Regional Meeting, American Chemical Society – November 2015
- Certificate of Appreciation, Japan Ozone Association, August 2014
- Service Recognition Award, International Ozone Association-Pan American Group – August 2008 and September 2010
- Service Recognition Award, International Ozone Association-International Ultraviolet Association – August 2007
- Certificate of Merit Award, Division of Environmental Chemistry, American Chemical Society – August 2002
- Graduate Intern Tuition Supplement, University of Alberta, Edmonton, AB, Canada – 2000-2003
- Nihon Ikueikai Graduate Scholarship, Japan – 1996-1997

AWARDED RESEARCH GRANT APPLICATIONS:

- Development of Novel Photobiological Process to Improve Water Recovery in Brackish Groundwater Desalination, National Science Foundation, Small Business Innovation Research, Phase I, US\$225,000, PI: Keisuke Ikehata – 2016
- Development of Novel Photobiological Process to Improve Water Recovery in Brackish Groundwater Desalination, U.S. Bureau of Reclamation, Pitch-to-Pilot Program, US\$100,000, PI: Keisuke Ikehata – 2016
- Comparison of Deionization Technologies for the Treatment of Basal Depressurization Water and Oil Sands Process-Affected Water, CONRAD Bitumen Production Fundamental Research Group, Can\$80,500, PI: Y. Liu, K. Ikehata, M. Gamal El-Din and H. Li – 2009
- Development of COD removal process for oil sands process affected waters, Hitachi Plant Technologies, Ltd., Can\$45,000, PI: I.D. Buchanan – 2009
- Mechanisms of prion destruction by ozonation and advanced oxidation processes, NSERC Discovery, Can\$261,000, PI: M. Gamal El-Din – 2008
- Rapid scanning stopped flow spectrometer circular dichroism capability tool and gel electrophoresis-transblot system, NSERC Research Tools and Instruments – Category 1, Can\$36,539, PI: M. Gamal El-Din – 2008

- Liquid chromatography/mass spectrometer, NSERC Research Tools and Instruments – Category 1, Can\$150,000, PI: M. Gamal El-Din and two others – 2007
- Water treatment options and their applicability to oil sands operations for recycle and safe discharge, Oil Sands Tailings Research Facility (OSTRF), Can\$174,375, P.I.: M. Gamal El-Din – 2006
- Advanced oxidation treatment for the degradation of cyanobacterial toxins in drinking water supplies, Alberta Ingenuity Centre for Water Research, Can\$98,000, PI: M. Gamal El-Din and D.W. Smith – 2004

EMPLOYMENT HISTORY:

July 2019 – Present

Assistant Professor, Ingram School of Engineering, Texas State University, San Marcos, TX

October 2018 – Present

Adjunct Professor, Department of Chemical and Environmental Engineering, University of California, Riverside, Riverside, CA

- Teaching undergraduate environmental engineering courses
 - ENVE 142 Water Quality Engineering in Winter 2019
 - ENVE 146 Water Quality Systems Design in Spring 2019
- Participating in multiple collaborative research projects on water quality, water treatment, and water reuse with researchers at the University of California, Riverside, California State University, Fullerton, Fukui Prefectural University, Orange County Water District, California State University, Dominguez Hills, Nagasaki University, and Kagoshima University

August 2018 – May 2019

Lecturer, Department of Chemistry and Biochemistry, California State University, Fullerton, Fullerton, CA

- Teaching undergraduate a general chemistry course for engineering students
 - Chem 123 Chemistry for Engineers in Fall 2018 and Spring 2019

April 2018 – October 2018

Lecturer, Department of Chemical and Environmental Engineering, University of California, Riverside, Riverside, CA

- Taught undergraduate environmental engineering course
 - ENVE 146 Water Quality Systems Design in Spring 2018

December 2009 – March 2018

Advanced Water R&D Manager, Technical Specialist II, Pacific Advanced Civil Engineering, Fountain Valley, CA

- Established and managed an R&D group and PACE Environmental Water Laboratory that consisted of a wet chemistry lab and a bench- and pilot-scale treatment lab with two full-time Ph.D. research scientists, two full-time MS/BS research engineer, one R&D technician, and one/two interns
- Established a federally funded R&D program to develop a novel photobiological treatment process for potable reuse and brackish water desalination
 - NSF Small Business Innovation Research (SBIR) Phase I
 - US Bureau of Reclamation Pitch to Pilot Program

- Provided professional consultation for >120 clients and partners world-wide in the areas of water quality (surface water, groundwater, recycled water, and stormwater), drinking water treatment, reservoir management, municipal, agricultural, and industrial wastewater treatment, treatment facility conceptual design, color, taste & odor control, disinfection and disinfection by-product control, trace contaminant removal, desalination, and water reuse facility design
- Conducted bench-, pilot-, and full-scale tests for >30 water treatment, wastewater treatment, contaminated site remediation, and water reuse projects
- Developed novel water and wastewater treatment technologies
 - RO concentrate management for potable water reuse and brackish groundwater desalination (one U.S. patent)
 - Agricultural water reuse
 - Oil and gas wastewater treatment
- Supervised and mentored two Ph.D. research scientists, five master's research engineers/scientists, four bachelor's engineers/scientists, one associate degree laboratory technician, four graduate interns (three Ph.D. and one master's), and one undergraduate student intern.

April 2009 – October 2009

Research Associate, Department of Civil & Environmental Engineering, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Yang Liu

- Investigated the toxicity of aqueous suspension of buckyball fullerene (C₆₀) in *Escherichia coli* using molecular and proteomic techniques
- Supervised one undergraduate summer student

January 2009 – October 2009

Research Associate, Department of Civil & Environmental Engineering, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Ian D. Buchanan

- Developed a novel water treatment system for oil sands process affected water in collaboration with Hitachi Plant Technologies, Ltd. and Suncor Energy Ltd.
- Supervised one M.Sc. student and one undergraduate summer student

August 2008 – December 2008

Research Associate (Casual), Department of Civil & Environmental Engineering, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Daniel W. Smith

- Investigated the reductions of nutrients and emerging contaminants in wastewater lagoons

July 2008 – August 2008

Research Associate (Casual), Department of Civil & Environmental Engineering, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Ian D. Buchanan

- Supervised two M.Sc. students' research projects at Gold Bar Wastewater Treatment Plant, Edmonton, Alberta

December 2006 – December 2007

Research Associate, Department of Civil & Environmental Engineering, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Mohamed Gamal El-Din

- Investigated chemical destruction methods for the treatment of prion proteins in water and wastewater by ozone and advanced oxidation
- Comprehensive literature review

- Advanced oxidation reactor design
- Preliminary experiments on engineered non-infectious prion model proteins by ozone and advanced oxidation (e.g., ozone/hydrogen peroxide, ozone/UV, and hydrogen peroxide/UV)
- Supervised research activities of a research group composed of seven M.Sc. students, one NSERC summer student, two WISEST summer students and one research assistant
- Advanced oxidation treatment of organic pollutants in water and wastewater (naphthenic acids, cyanotoxins, estrogens, and pesticides)
- Oil sands tailings pond water and oil sands bitumen upgrader wastewater treatment (in collaboration with Syncrude Canada and Suncor Energy)
- Petroleum refinery wastewater treatment and contaminant removal (in collaboration with Petro Canada)
- Optimization of secondary clarifier and aerated grit chambers in municipal wastewater treatment plant

January 2006 – April 2007

Sessional Lecturer/Laboratory Instructor, University of Alberta, Edmonton, AB, Canada

- Environmental Engineering Fundamentals Laboratories (CivE 221, Undergraduate Level)
- Environmental Engineering Measurement I (Civ E 620, Graduate Level)
- Environmental Engineering Measurement II (Civ E 627, Graduate Level)

August 2005 – November 2006

Postdoctoral Research Associate, University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Mohamed Gamal El-Din

- Investigated the destruction of cyanobacterial toxins by ozonation and advanced oxidation
- Conducted comprehensive literature surveys on advanced oxidation treatment of pharmaceuticals in water and wastewater
- Participated in the following research projects:
- Chlorination of cyanobacterial toxins in water
- Physical-chemical, ultraviolet irradiation, and soil-based treatment of liquid swine manure and reuse of treated liquid manure
- Advanced wastewater treatment of petroleum refinery wastewater, oil sands tailings water, and biologically treated municipal wastewater for reclamation and reuse
- Degradation of naphthenic acids in oil sands process waters (in collaboration with Syncrude Canada)
- Advanced oxidation treatment of estrogenic endocrine disrupting compounds in municipal wastewater
- Supervised research activities of a group consisting of three Ph.D. and five M.Sc. students

June 2004 – June 2005

Postdoctoral Research Associate, Department of Medicinal Chemistry, University of Kansas, Lawrence, KS, USA, Advisor: Dr. Robert P. Hanzlik

- Conducted research on cytotoxic reactive metabolites of xenobiotics, including thiobenzamide and halothane, identified hepatic target proteins of reactive metabolites
- Syntheses of ¹⁴C- and ¹³C-labelled thiobenzamide for dosing
- Syntheses and characterisation of haptenised proteins for polyclonal antibody production

- Production and characterisation of polyclonal antibodies specific to trifluoroacetylated and benzoylated proteins by enzyme-linked immunosorbent assay (ELISA) and western blotting with synthesised competitive inhibitors
- Analysis and identification of rat liver proteins modified by reactive metabolites of thiobenzamide using ELISA, 2-D electrophoresis, western blotting, and phosphor image
- Hands-on experience with radio synthesis, rabbit immunization, rat liver protein preparation, ¹H-, ¹³C-, and ¹⁹F-NMR, electrophoresis, HPLC, and LC-ESI-MS

December 2003 – May 2004

Postdoctoral Research Associate, Department of Civil & Environmental Engineering,
University of Alberta, Edmonton, AB, Canada, Advisor: Dr. Mohamed Gamal El-Din

- Investigated the degradation of toxic and persistent organic compounds such as resin and fatty acids, and cyanotoxins by ozonation and advanced oxidation
- Conducted comprehensive literature surveys on advanced oxidation treatment of synthetic surfactants and pesticides in water and wastewater

BIBLIOGRAPHY:

Refereed journal articles (including research papers and invited reviews):

1. Ikehata, K., Nakamura, N., Kulkarni, H.V., Zhao, Y., Maleky, N., and Sato, S. (2018) Isolation and evaluation of brackish water diatoms from evaporation ponds for the treatment of silica- and nutrient-rich brackish wastewater. (submitted)
2. Ikehata, K., Zhao, Y., Kulkarni, H. V., Li, Y. (2019) Treatment of RO concentrate from six potable reuse facilities in the southwestern U.S. with a new photobiological process. *Water Supply* **19**, (accepted).
3. Kulkarni, H., Zhao, Y., and Ikehata, K. (2019) Factors influencing photobiological treatment process to remove reactive silica from brackish groundwater reverse osmosis concentrate. *Desalination* **452**, 114-122, DOI: 10.1016/j.desal.2018.11.009.
4. Ikehata, K., Zhao, Y., Kulkarni, H.V., Li, Y., Snyder, S.A., Ishida, K.P., Anderson, M.A. (2018) Water recovery from advanced water purification facility reverse osmosis concentrate by photobiological treatment followed by secondary reverse osmosis. *Environmental Science & Technology* **52**:12, 8588-8595, DOI: 10.1021/acs.est.8b00951.
5. Ikehata, K., Li, Y., Komor, A.T., and Gibson, G.W. (2018) Free chlorine disinfection of full-scale MBR effluent to achieve 5-log virus inactivation. *Water Environment Research* **90**:7, 623-633, DOI: 10.2175/106143017X15131012153103.
6. Ikehata, K., Zhao, Y., Ma, J., Komor, A.T., Maleky, N., and Anderson, M.A. (2018) A novel photobiological process for reverse osmosis concentrate treatment using brackish water diatoms. *Water Science and Technology: Water Supply* **18**:2, 594-602, DOI: 10.2166/ws.2017.142.
7. Fujioka, T., Masaki, S., Kodamatani, H., and Ikehata, K. (2017) Degradation of *N*-nitrosodimethylamine by UV-based advanced oxidation processes for potable reuse: A short review. *Current Pollution Report*, **3**:2, 79-87, DOI 10.1007/s40726-017-0052-x.
8. Ikehata, K., Zhao, Y., Maleky, N., Komor, A.T., and Anderson, M.A. (2017) Aqueous silica removal from agricultural drainage water and reverse osmosis concentrate by brackish water diatoms in semi-batch photobioreactors. *Journal of Applied Phycology* **29**:1, 223-233, DOI 10.1007/s10811-016-0907-3.
9. Ikehata, K., Wang-Staley, L., Qu, X., and Li, Y. (2016) Treatment of groundwater contaminated with 1,4-dioxane, tetrahydrofuran, and chlorinated volatile organic compounds using advanced oxidation processes. *Ozone: Science and Engineering* **38**:6, 413-424, DOI 10.1080/01919512.2016.1198686.

10. Anderson, M.A., Komor, A.K., and Ikehata, K. (2014) Flow routing with bottom withdrawal to improve water quality. *Lake and Reservoir Management* **30**:2, 131-142.
11. Ikehata, K., Wang, L., Nessler, M.B., Komor, A.T., Cooper, W.J., and McVicker R.R. (2013) Effect of ammonia and chloramine pretreatment during the ozonation of a colored groundwater with elevated bromide. *Ozone: Science and Engineering* **35**:6, 438-447.
12. Ikehata, K., Duzhak, T.G., Galeva, N.A., Ji, T., Koen, Y.M., and Hanzlik, R.P. (2008) Protein targets of reactive metabolites of thiobenzamide in rat liver *in vivo*. *Chemical Research in Toxicology* **21**:7, 1432-1442.
13. Nakonechny, M., Ikehata, K., and Gamal El-Din, M. (2008) Kinetics of estrone ozone/hydrogen peroxide advanced oxidation treatment. *Ozone: Science and Engineering* **30**:4 249-255.
14. Ikehata, K., Gamal El-Din, M., and Snyder, S.A. (2008) Ozonation and advanced oxidation treatment of emerging organic pollutants in water and wastewater. *Ozone: Science and Engineering* **30**:1, 21-26.
15. Ji, T., Ikehata, K., Koen, Y.M., Esch, S.W., Williams, T.D., and Hanzlik, R.P. (2007) Covalent modification of microsomal lipids by thiobenzamide metabolites *in vivo*. *Chemical Research in Toxicology* **20**:4, 701-708.
16. Yang, H., Xiao, J., Gamal El-Din, M., Buchanan, I.D., Bromley, D. and Ikehata, K. (2007) Soil-based treatment of partially treated liquid swine manure. *Environmental Technology* **28**:1, 59-70.
17. Ikehata, K., Naghashkar, N.J., and Gamal El-Din, M. (2006) Degradation of aqueous pharmaceuticals by ozonation and advanced oxidation processes: A review. *Ozone: Science and Engineering* **28**:6, 353-414.
18. Gamal El-Din, M., Smith, D.W., Al Momani, F., and Ikehata, K. (2006) Ozone treatment for the degradation of resin and unsaturated fatty acids at low temperatures. *Journal of Environmental Engineering and Science* **5**:S1, S95-S102.
19. Singh, P., Gamal El-Din, M., Ikehata, K., Bromley, D., and Craik, S.A. (2006) UV inactivation of bacteria in raw and pre-treated liquid swine manure. *Environmental Technology* **27**:11, 1261-1270.
20. Singh, P., Gamal El-Din, M., Bromley, D., and Ikehata, K. (2006) Alum settling and filtration treatment of liquid swine manure. *Transactions of the ASABE* **49**:5, 1487-1494.
21. Ikehata, K. and Gamal El-Din, M. (2006) Aqueous pesticide degradation by hydrogen peroxide/ultraviolet irradiation and Fenton-type advanced oxidation processes: A review. *Journal of Environmental Engineering and Science* **5**:2, 81-135.
22. Ikehata, K., Buchanan, I.D., Pickard, M.A., and Smith, D.W. (2005) Purification, characterization and evaluation of extracellular peroxidase from two *Coprinus* species for aqueous phenol treatment. *Bioresource Technology* **96**:16, 1758-1770.
23. Ikehata, K. and Gamal El-Din, M. (2005) Aqueous pesticide degradation by ozonation and ozone-based advanced oxidation processes: A review (Part II). *Ozone: Science and Engineering* **27**:3, 173-202.
24. Ikehata, K. and Gamal El-Din, M. (2005) Aqueous pesticide degradation by ozonation and ozone-based advanced oxidation processes: A review (Part I). *Ozone: Science and Engineering* **27**:2, 83-114.
25. Ikehata, K., Pickard, M.A., Buchanan, I.D., and Smith, D.W. (2004) Optimization of extracellular fungal peroxidase production by two *Coprinus* species. *Canadian Journal of Microbiology* **50**:12, 1033-1040.
26. Ikehata, K. and Gamal El-Din, M. (2004) Degradation of recalcitrant surfactants in wastewater by ozonation and advanced oxidation processes: A review. *Ozone: Science and Engineering* **26**:4, 327-343.

27. Ikehata, K., Buchanan, I.D., and Smith, D.W. (2004) Recent developments in the production of extracellular fungal peroxidases and laccases for waste treatment. *Journal of Environmental Engineering and Science* **3**:1, 1-19.
28. Ikehata, K., Buchanan, I.D., and Smith, D.W. (2004) Extracellular peroxidase production by *Coprinus* species from urea treated soil. *Canadian Journal of Microbiology* **50**:1, 57-60.
29. Ikehata, K., Buchanan, I.D., and Smith, D.W. (2003) Treatment of oil refinery wastewater using crude *Coprinus cinereus* peroxidase and hydrogen peroxide. *Journal of Environmental Engineering and Science* **2**:6, 463-472.
30. Ikehata, K. and Buchanan, I.D. (2002) Screening of *Coprinus* species for the production of extracellular peroxidase and evaluation of the enzyme for the treatment of aqueous phenol. *Environmental Technology* **23**:12, 1355-1368.
31. Ikehata, K. and Nicell, J.A. (2000) Color and toxicity removal following tyrosinase-catalyzed oxidation of phenols. *Biotechnology Progress* **16**:4, 533-540.
32. Ikehata, K. and Nicell, J.A. (2000) Characterization of tyrosinase for the treatment of aqueous phenols. *Bioresource Technology* **74**:3, 191-199.

Invited book chapters and articles:

33. Ikehata, K. (2018) Chapter 9: Recent research on ozonation by-products in water and wastewater treatment: Formation, control, mitigation, and other relevant topics. in *Recent Advances in Water and Wastewater Treatment*, Thanh, B.X, Chiemchaisri, C., Fujioka, T., and Varjani, S. (Eds.), Springer Publishing Company, pp. 117-144.
34. Ikehata, K. and Li, Y. (2018) Chapter 5: Ozone-based Processes. in *Advanced Oxidation Processes for Wastewater Treatment – Emerging Green Chemical Technology*, Ameta, S. and Ameta, R. (Eds.), Elsevier S&T Book, Academic Press, Cambridge, MA, ISBN: 978-0-128104996, pp. 115-134.
35. Ikehata, K. (2016) Chapter 2: Applications of ozone technologies in North America (in Japanese). in *Ozone Handbook*, 2nd Edition, Japan Ozone Association (Ed.), Sanyu Publishing, Yokohama, Japan, ISBN 978-4-9909233-0-3, pp. 17-36.
36. Ikehata, K. (2015) Enzymatic treatment of wastewater containing synthetic dyes using fungal laccases and peroxidases. in *Dyes Removal from Waste Water Using Green Technologies*. Sharma, S.K. (Ed.) Wiley-Scrivener Publishing, Beverly, Massachusetts, ISBN 978-1-118-72099-8, pp. 203-260.
37. Ikehata, K., Komor, A.T., and Jin, Y. (2015) Removal of iron and manganese from water – Chemistry and engineering considerations. in *Heavy Metals in Water: Presence, Removal and Safety*. Sharma, S.K. (Ed.) Royal Society of Chemistry, London, UK, ISBN 978-1-84973-885-9, pp. 122-140.
38. Ikehata, K., Jin, Y., Maleky, N., and Lin, A. (2015) Heavy metal pollution in water resources in China – Occurrence and public health implications. in *Heavy Metals in Water: Presence, Removal and Safety*. Sharma, S.K. (Ed.) Royal Society of Chemistry, London, UK, ISBN 978-1-84973-885-9, pp. 141-167.
39. Ikehata, K. (2013) Wastewater treatment using a fungal peroxidase from *Coprinopsis* species (in Japanese). in *Kinrui no Jiten (Encyclopedia of Fungi)*, Mycological Society of Japan (Ed.) Asakura Publishing, Tokyo, Japan, ISBN 978-4-254-17147-1 C3545, pp. 544-545.
40. Ikehata, K. (2013) Hazardous agents in wastewater: Public health impacts and treatment options for safe disposal and reuse. In *Wastewater Reuse and Management*, Sharma, S.K. and Sanghi (Eds.) Springer, Dordrecht, the Netherlands, ISBN 978-94-007-4942-9 (eBook), 978-94-007-4941-2 (Hardcover), pp. 165-191.
41. Ikehata, K. and Liu, Y. (2011) Land disposal of wastes. in *Encyclopedia of Environmental Health*, Nriagu, J. (Ed.) Elsevier B.V., Amsterdam, Netherlands, ISBN 978-0444522733, pp. 353-361.

42. Ikehata, K., Buchanan, I.D., and Smith, D.W. (2003) Production of enzymes for environmental applications. A review. in *Wastewater Treatment Using Enzymes*, A. Sakurai (Ed.) Research Signpost, Kerala, India, ISBN 81-7736-172-4, pp. 1-40.

Project reports:

43. Ikehata, K. and Kulkarni, H.V. (2018) Development of a Novel Photobiological System to Improve Water Recovery in Brackish Groundwater Desalination. Desalination and Water Purification Research and Development Program Report Prepared for the Bureau of Reclamation under Agreement No. R17AC00036, March 23, 2018, U.S. Department of the Interior, Bureau of Reclamation, Technical Service Center, Denver, Colorado.
44. Yamamura, S., Ikehata, K., Isa, T., Kato, Y., Kakinuma, M., Kawachi, T., Sasaki, T., Nagashio, D., Yao, M., Yamaguchi, T., Tanaka, K. (2015) Ozone Drinking Water Treatment Water Quality Subcommittee Report (in Japanese). Japan Ozone Association, Tokyo, Japan.
45. Ikehata, K. and Buchanan, I.D. (2000) Colour and chloride removal from pulp mill effluent using ion-exchange resins. Sustainable Forest Management Network Project Report 2000-18, University of Alberta, Edmonton, Alberta.

Books (Edited proceedings):

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13. Ikehata, K., Komor, A.T., Li, Y., Qu, X., Kleinheinz, J., Lee, D.S., Trussell, C.B., Hokanson, D.R. (2015) Removal of hydrogen sulfide from groundwater by granular activated carbon. 2015 CA-NV AWWA Annual Fall Conference, October 26-29, 2015, Las Vegas, Nevada.
14. Ikehata, K., Wang-Staley, L., Qu, X., and Li, Y. (2015) Advanced oxidation treatment of groundwater contaminated with 1,4-dioxane, tetrahydrofuran, and chlorinated volatile organic compounds. The International Ozone Association-Pan American Group Annual Conference & Expo – Dallas, Texas 2015, September 20-23, 2015, Dallas, Texas.
15. Ikehata, K. (2015) Remediation of contaminated groundwater with advanced oxidation processes (in Japanese), The 24th Annual Conference on Ozone Science and Technology in Japan, May 28-29, 2015, Tokyo, Japan.
16. Ikehata, K., Jin, Y., Yamamura, S., Cotruvo, J.A. (2014) Recent progress on bromate control in water treatment. The International Ozone Association-Pan American Group Annual Conference & Expo – Montreal 2014, August 24-27, 2014, Montreal, Quebec.
17. Ikehata, K. (2014) Applications of advanced oxidation processes in water reuse (Invited Speech in Japanese), The 23rd Annual Conference on Ozone Science and Technology in Japan, August 7 and 8, 2014, Tokyo, Japan.
18. Ikehata, K., Jin, Y., Yamamura, S., Cotruvo, J.A. (2014) Recent progress on bromate control during ozone water treatment (in Japanese), The 23rd Annual Conference on Ozone Science and Technology in Japan, August 7 and 8, 2014, Tokyo, Japan.
19. Ikehata, K., Jin, Y., Komor, A.T. (2014) Iron and manganese removal by chemical oxidation and filtration. 2014 CA-NV AWWA Annual Spring Conference, March 24-27, 2014, Anaheim, California.

20. Ikehata, K., Komor, A.T., Jin, Y., Peterson, J.D., Camarena, E., and Maleky, N. (2013) Ozone applications in golf course irrigation water treatment, 2013 World Congress & Exhibition, International Ozone Association & International Ultraviolet Association, September 22-26, 2013, Las Vegas, Nevada.
21. Ikehata, K. and Komor, A.T. (2013) Ozone treatment of surface water in Anaheim, California (in Japanese), 22nd Annual Conference on Ozone Science and Technology in Japan, August 8 and 9, 2013, Tokyo, Japan.
22. Ikehata, K. (2013) New toxicological data on low dose bromate carcinogenicity (in Japanese), 22nd Annual Conference on Ozone Science and Technology in Japan, August 8 and 9, 2013, Tokyo, Japan.
23. Ikehata, K. (2013) Low dose risks from bromate: Chemistry and modes of action – Introduction to the Water Research Foundation report # 4042 by Joseph Cotruvo et al. – American Chemical Society Orange County Section Environmental Group Monthly Presentation, April 25, 2013, Irvine, California.
24. Ikehata, K. (2013) [on behalf of Dr. Joseph A. Cotruvo] Bromate risk at high and low doses from drinking water. AMERICANA 2013 International Environmental Technology Trade Show and Conference, March 19-21, 2013, Montreal, Quebec.
25. Ikehata, K., Komor, A.T., Anderson, M.A., and Bogdanoff, P. (2013) Year-round bottom water withdrawal and treatment for minimizing the impact of anoxia and algal blooms. 2013 CA-NV AWWA Annual Spring Conference, March 25-28, 2013, Las Vegas, Nevada.
26. Ikehata, K., Wang, L., Nessler, M.B., Komor, A.T., Cooper, W.J., and McVicker, R.R. (2012) Revisiting ozonation for colored groundwater treatment – The impact of the ammonia-free chlorine process for bromate control. 2012 International Ozone Association Pan American Group Annual Conference and Exposition, September 23-26, 2012, Milwaukee, Wisconsin.
27. Ikehata, K. and Komor, A.T. (2012). Applications of ozone oxidation in groundwater treatment in Southern California (in Japanese), 21st Annual Conference on Ozone Science and Technology in Japan, June 21 and 22, 2012, Hiroshima, Japan.
28. Ikehata, K., Komor, A., and Anderson, M. (2011) Mitigation of anoxic hypolimnetic water in a drinking water reservoir by bottom water withdrawal and treatment – Bench-scale ozone test and full-scale water treatment. 2nd North American Conference on Ozone, Ultraviolet & Advanced Oxidation Technologies, September 19-20, 2011, Toronto, Ontario.
29. Ikehata, K. and Gamal El-Din, M. (2007) Water treatment and reclamation for oil sands process-affected waters. 2007 Canadian Oil Sands Network for Research and Development (CONRAD) Water Usage Workshop and Seminar, November 21-22, 2007, Calgary, Alberta.
30. Wang, Y., Sadek, A., Ikehata, K., and Gamal El-Din, M. (2007) Water treatment options and their applicability to oil sands operations for reuse and safe discharge. OSTRF 3rd Graduate Student – Industry Interaction Day Workshop, September 27, 2007, Edmonton, Alberta.
31. Ikehata, K., Gamal El-Din, M., and Snyder, S.A. (2007) Ozonation and advanced oxidation treatment of emerging organic pollutants in water and wastewater. International Ozone Association-International Ultraviolet Association Joint World Congress, August 27-29, 2007, Los Angeles, California [Keynote Paper].
32. Yang, H., Xiao, J., Gamal El-Din, M., Buchanan, I., Bromley, D., and Ikehata, K. (2006) Land application of pre-treated liquid swine manure. Alberta Ingenuity Centre for Water Research, 3rd Annual AICWR Research Conference, November 3-4, 2006, Edmonton, Alberta.
33. Ikehata, K. and Gamal El-Din, M. (2006) Water treatment options and their applicability to oil sands operations for reuse and safe discharge. OSTRF 2nd Graduate Student – Industry Interaction Day Workshop, September 28, 2006, Edmonton, Alberta.
34. Gamal El-Din, M., Smith, D.W., Wang, W., and Ikehata, K. (2006) Destruction of cyanobacteria toxin by ozone. American Water Works Association Annual Conference and Exposition (ACE06). June 10-15, 2006, San Antonio, Texas.

35. Gamal El-Din, M. and Ikehata, K. (2006) Treatment of estrogenic endocrine disrupting compounds in wastewater by advanced oxidation processes. Pharmaceuticals and Endocrine Disruptors Workshop at the Edmonton Waste Management Centre of Excellence. May 18, 2006, Edmonton, Alberta.
36. Ikehata, K., Buchanan, I.D., and Smith, D.W. (2003) Enzymatic treatment of phenol with crude fungal peroxidase from *Coprinus* species. 225th the American Chemical Society National Meeting, Biochemical Technology Division Symposia, March 23-27, 2003, New Orleans, Louisiana.
37. Ikehata, K. and Buchanan, I.D. (2002) Screening of *Coprinus* species for the production of extracellular peroxidase and evaluation of its applicability to the treatment of aqueous phenol. Joint CSCE/EWRI of ASCE International Conference on Environmental Engineering, July 21-24, 2002, Niagara Falls, Ontario.
38. Ikehata, K. and Nicell, J.A. (1999) Characterisation of tyrosinase enzyme for the treatment of aqueous phenols. 34th Central Canadian Symposium on Water Pollution Research, February 8-9, 1999, Burlington, Ontario.

Poster presentations:

39. Ikehata, K., Kulkarni, H.V., Zhao, Y., and Li, Y. (2018) Enhanced fresh water recovery from brackish groundwater RO concentrate by a photobiological process and secondary RO, IWA World Water Congress & Exhibition 2018, 16-21 September 2018, Tokyo, Japan.
40. Ikehata, K., Komor, A.T., Trussell, C.B., Hokanson, D.R., Lee, D.S., Kleinhenz, J.A. (2015) Biological hydrogen sulfide removal by granular activated carbon filtration Pilot- and full-scale studies. 2015 American Water Works Association Annual Conference and Exposition (ACE15). June 7-10, 2015, Anaheim, California.
41. Ikehata, K., Sheng, Z., Sun, R.N., Liang, J., Fayant, P., Stuart, D.T., and Liu, Y. (2010) Biochemical investigation on the antibacterial activity of aqueous nano-C₆₀ against *Escherichia coli*. The International Water Association- World Water Congress and Exhibition, September 19-24, 2010, Montreal, Quebec.
42. Gamal El-Din, M., Smith, D.W., Al Momani, F., Wang, D.W., and Ikehata, K. (2005) Application of ozone treatment for the destruction of two cyanobacteria toxins: MC-LR and –RR. Alberta Ingenuity Centre for Water Research, 2nd Annual AICWR Research Conference, October 29-30, 2005, Calgary, Alberta.
43. Ikehata, K. and Buchanan, I.D. (2002) Removal of phenols from oil refinery wastewater with extracellular fungal peroxidase and hydrogen peroxide. Environmental Chemistry Division Symposia, 224th the American Chemical Society National Meeting, August 18-22, 2002, Boston, Massachusetts.

Invited Seminars:

44. Ikehata, K. (2019) Journey to IPR/DPR 2009-2019, University of California, Los Angeles, UCLA Chapter American Water Works Association, January 31, 2019, Los Angeles, California.
45. Ikehata, K. (2018) Developing a Novel Photobiological Water Treatment Process Using Brackish Water Diatoms, California State University, Stanislaus, Chemistry Career Club Seminar, October 12, 2018, Turlock, California.
46. Ikehata, K. (2018) Recovering More Usable Water and Reducing Concentrate with Photobiological Treatment Followed by Secondary Reverse Osmosis, University of California, Riverside, CEE Seminar, June 1, 2018, Riverside, California.
47. Ikehata, K. (2017) Development of a Novel Water Treatment Technology Using Brackish Water Diatoms, Fukui Prefectural University, Faculty of Marine Bioscience, June 8, 2017, Obama, Fukui, Japan.

48. Ikehata, K. (2017) Innovative Water Projects – From Ozone Water Treatment to Water Reuse, June 7, 2017, Mitsubishi Electric Corporation, Amagasaki, Hyogo, Japan.
49. Ikehata, K. (2017) 20 Years of Research in Chemistry – From Polymer Synthesis to Water Reuse, California State University Fullerton, Chemistry and Biochemistry Careers Class, April 7, 2017, Fullerton, California.
50. Ikehata, K. (2016) 20 Years of Research in Chemistry – From Polymer Synthesis to Water Reuse, California State University Fullerton, Chemistry and Biochemistry Careers Class, November 4, 2016, Fullerton, California.
51. Ikehata, K. (2016) 20 Years of Research in Chemistry – From Polymer Synthesis to Water Reuse, California State University Fullerton, 2nd Annual Department of Chemistry and Biochemistry Alumni Day, April 8, 2016, Fullerton, California.
52. Ikehata, K. (2015) Living as a Global Researcher – From Japan to North America & Beyond, Swing Corporation, May 26, 2015, Tokyo, Japan.
53. Ikehata, K. (2015) Water Resources Management in Southern California – Drought and Water Reuse, Research Seminar at the Research Center for Environmental Quality Management, Kyoto University, May 23, 2015, Otsu, Shiga, Japan.
54. Ikehata, K. (2012) Introduction to Environmental Engineering Careers. For the Society of Environmental Engineers Meeting, California State University Fullerton, November 7, 2012, Fullerton, California.
55. Ikehata, K. (2011) Being Abroad for 14 Years. For the Department of Civil & Environmental Engineering Student Society, University of California, Irvine, March 25, 2011, Irvine, California.

REFERENCES:

Available upon request