**P.K. ANDY HONG, Ph.D., P.E.**

Founder, Heightened Technologies, Salt Lake City, UT, USA

Professor, Department of Civil and Environmental Engineering, University of Utah, USA

Visiting Professor, Graduate Institute of Environmental Engineering, National Taiwan University

Registered Professional Engineer (UT, USA)

**EDUCATION**

California Institute of Technology, Ph.D., 1988 Environmental Engineering Science

California Institute of Technology, M.S., 1982 Environmental Engineering Science

California Institute of Technology, B.S., 1981 Chemistry

**RESEARCH**

* Oil and Gas Process Waters Treatment and Reuse
* Sustainability of Water and energy; Renewable bioenergy
* Remediation of Contaminated Soil, sediment, and Groundwater – chemical & biological
* Interfacial processes for energy industry and the Environment
* Nanobubble technology in environmental applications
* Micro-nanobubble technologies for health sciences

# Services

Editor, Sustainable Environment Research, 2011 – present

Editorial Board, soil & Sediment Contamination – An Internal Journal, 2002 – present

Editorial Board, Advances in Environmental Research, 2012 – present

Editorial Board, Jacobs Journal of Civil Engineering, 2015 – present

Transactions International Advisor, HKIE Transactions, 2016 – present

Reviewer of Book Proposals and research publications for publishers and laboratories

Reviewer for Environmental Science & Technology, Water Research, Science Total Environment, Environmental Pollution, Chemosphere, and 15 other key technical journals

**INTERNATIONAL ACTIVITES**

Adjunct Professor, National Taiwan University, Taiwan, 2007 - 2019

Science Advisor, Utah-Taihu Institute of Environmental Research, Wuxi, China

Center Advisor, Emerging Contaminant Research Center, National Pingtung Univ. of Sci. & Tech., Taiwan

Advisors Board, HKIE Transactions International Advisors for HKIE Transactions

Field remediation project consultant, soil remediation, Honde Environmental, Shanghai, China

Pilot project consultant, Biogas from municipal sludge, Qianghai University, Qianghai, China

Engineers Without Boarders Student Chapter Advisor, University of Utah, 2006 – 2013

Chi Epsilon Student Chapter Faculty Advisor, University of Utah, 2017-

**Honor & Awards**

* Recipient of CVEEN Excellence in Research Award, 2009
* Recipient of 2007 John R. Park Teaching Fellowship
* Faculty Advisor on Engineers Without Borders student project - Mondialogo Engineering Award 2007.
* Team Advisor on Utah Entrepreneur Competition (2007)
* First place winner of 2007 Opportunity Quest competition
* Winner of Workman Nydegger Innovative Award
* 20 INFLUENTIAL ENVIRONMENTAL ENGINEERING PROFESSORS  
  <https://www.onlineengineeringprograms.com/civil/environmental/20-influential-environmental-engineering-profs>

**DISCLOSURES AND PATENTS**

D.1 Micro/nano Bubbles Aerator (MBA); number U-6852; 11/2019

D.2 Oscillating Bubbles Reactor (OBR); U-6853; 11/2019

D.3 Processing Concrete Debris into Desalination Membrane; U-6689; 4/2019

D.4 Concrete Debris Recycling into Cement; U-6625; 1/2019

1. P.K.A. Hong, “Pressure cycling wastewater treatment apparatus,” US9604863B2; 2017.
2. P.K.A. Hong, Z. Cha, “Ozonation Conversion of Heavy Heavy Hydrocarbons for Resource Recovery,” US9090834 B2; 2015
3. P.K.A. Hong, “Methods for deactivating biomass,” US9139460 B2; 2015
4. P.K.A. Hong, “Pressurizing-Depressurizing Cycles for Removal of Contaminants in Environmental Samples,” US 8709263, May 2014.
5. D. Wavrek, P.K.A. Hong, J.-C. Chao and Y. Zeng, “Degradation of polycyclic aromatic hydrocarbons to render them available for biodegradation,” US 20,080,242,875, 2013.
6. David Wavrek, P. K. Andy Hong, Jiun-Chi Chao, Yu Zeng, DEGRADATION OF POLYCYCLIC AROMATIC HYDROCARBONS TO RENDER THEM AVAILABLE FOR BIODEGRADATION. US 8,557,565 B2, 2013.
7. P. K. Andy Hong, David A. Wavrek, Jiun-Chi Chao, Yu Zeng, San Diego, “Degradation of polycyclic aromatic hydrocarbons. US 8,298,814 B1, 2012
8. P.K.A. Hong, “Pressurizing-Depressurizing Cycles for Removal of Contaminants in Environmental Samples,” HK Patent 1130728, 2012.
9. P.K.A. Hong, W. Duyvesteyn, “Fragmentation of heavy hydrocarbons,” US 7,909,985 B2, 2011.
10. P.K.A. Hong, D. Hayes, “In situ sediment ozonator for contaminants remediation,” US 7,115,203, 2006.
11. P.K.A. Hong, “Point-of-use removal of lead in drinking water,” US 6,106,725, 2000.
12. P.K.A. Hong, "Point of use removal of lead from drinking water.” US 5,665,240, 1997.

**Book Chapters**

1) P.K.A. Hong and W.M. Jiang, “Factors in the selection of chelating agents for extraction of lead from contaminated soil--effectiveness, selectivity, and recoverability,” in Biogeochemistry of Chelating Agents, B. Nowack and J.M. VanBriesen, Eds. ACS symposium Series 910, 2005, Ch. 25, pp. 421-432.

2) P.K.A. Hong, C. Li, W. Jiang, T.-C. Chen and R.W. Peters, “Chelating agents for extraction of heavy metals from soil—complexing power, selectivity, and recoverability,” In Emerging Technologies in Hazardous Waste Management, 8th ed. Tedder and Pohland,Eds. 2000, Ch. 2, pp. 9-20.

3) R.W. Okey, S. W. Lin and P.K.A. Hong, "Predicting stability constants of various chelating agents using QSAR Technology," in Emerging Technologies in Hazardous Waste Management, 7th ed. Tedder and Pohland, Eds. Plenum Press, New York, 1997, Ch. 5, pp. 49-68.

4) P.K.A. Hong, “Chelating extraction and recovery of heavy metals from contaminated soils,” in Advances in Environmental Engineering and Chemical Engineering, Y. Qian and H. Chen, Eds. South China University of Technology Press, Guangzhou, 1997.

5) C. H. Kuo, L. Zhong, M. Zappi and P.K.A. Hong, "The role of hydrogen peroxide ozone reaction in the advanced oxidation of hazardous pollutants," in Emerging Technologies in Hazardous Waste Management V, D.W. Tedder and F.G. Pohland, Eds. American Academy of Environmental Engineers, 1996, Ch. 12.

6) P.K.A. Hong, T. C. Chen and R. Okey, "Chelating extraction of zinc from soil with n (2 acetamido)iminodiacetic acid,” ACS Symposium Series 607, 1995, Ch. 17, pp. 210-223.

7) D. Bahnemann, M. Hoffmann, P.K.A. Hong, C. Korman, "Photocatalytic Formation of Hydrogen Peroxide," in The Chemistry of Acid Rain, R. Johnson and G, Gordon, Eds. ACS Symposium Series 349, 1987.

8) S. Boyce, M. Hoffmann, P.K.A. Hong and L. Moberly, "Catalysis of the autoxidation of aquated sulfur dioxide by homogeneous and heterogeneous transition metal complexes," in Acid Precipitation, J. Teasley, Ed. Ann Arbor Science, Ann Arbor, MI, 1984, Ch. 11.

**JOURNAL PUBLICATIONS**

1. Ming-Chi Chiu; Haon-Yao Chen; Chien-Hsien Lee; Andy Hong; Ping-Yi Yang. Immobilized Biological Method for Anaerobic Biodegradation of Carbohydrates and Co-metabolism of Protein in Wastewaters. Environmental Technology & Innovation, 2020, accepted for publication.
2. Haon-Yao Chen, Kok Kwang Ng, Chien-Hsien Lee, Tzu-Yang Chen, Pui-Kwan Andy Hong, Ping-Yi Yang, Cheng-Fang Lin. Entrapped biomass for removal of organics and total nitrogen from anaerobic reactor effluents. Bioresource Technology, 642-649 (2018). https://doi.org/10.1016/j.biortech.2018.07.091.
3. P.-H. Wu, K.K. Ng, P.K.A. Hong, P.-Y. Yang, C.-F. Lin, Treatment of low-strength wastewater at mesophilic and psychrophilic conditions using immobilized anaerobic biomass, Chemical Engineering Journal, 311, 46-54 (2017). (http://dx.doi.org/10.1016/j.cej.2016.11.077)
4. S.Y. Wang, Y.C. Kuo, A. Hong, C.C. Chen, C. M. Kao, Bioremediation of diesel and lubricant oil-contaminated soils using enhanced landfarming system, Chemosphere, 164, 558-567 (2016).
5. C.-S. Kuo, C. –F. Lin, P.K.A. Hong, Photocatalytic mineralization of codeine by UV-A/TiO2 - Kinetics, intermediates, and pathways, Journal of Hazardous Materials301, 137-144 (2016). (http://dx.doi.org/10.1016/j.jhazmat.2015.08.030)
6. K.-H. Yang, C.-J. Ruan, Y.-C. Lin, M.-D. Fang, C.-H. Wu, P.K.A. Hong, C.-F. Lin. Role of Dissolved Organic Matter in Sorption of Perfluorooctanoic Acid to Metal Oxides. Water Environment Research, 88, 779-784 (2016).
7. P.-H. Wu, C. –F. Lin, Y.-C. Lin, P.K.A. Hong “Metal Leaching from Road Base Incorporating Incineration Bottom Ash “, Journal of Chinese Institute of Civil and Hydraulic Engineering, 27(2), 125-137 (2015).
8. X. Zhao, P.K.A. Hong. Sequential treatments of oil sand tailings from green extraction by settling, ozonation, and sand filtration. Sustain. Environ. Res., 25(3), 151-157 (2015).
9. C.-S. Kuo, C.-F. Lin, P.-K.A. Hong, Photocatalytic degradation of methamphetamine by UV/TiO2 – Kinetics, intermediates, and products. Water Research 74 (2015) 1-9.
10. Haon-Yao Chen, Cheng-Fang Lin, Pui-Kwan Andy Hong, Ping-Yi Yang, Kok-Kwang Ng, Sheng-Fu Yang A Pilot Study on Suspended Activated Sludge Process Augmented with Immobilized Biomass for Simultaneous Nitrification and Denitrification, Journal of Water Reuse and Desalination, 2015, 5 (2) 157-165.
11. Chung-Hsin Wu, Chao-Yin Kuo, Jui-Tai Wu, Pui-Kwan Andy Hong, Chih-Hao Lai, Wei-Yang Chung. Effects of nitrogen and carbon doping on properties and photocatalytic activity of TiO2-In2O3 composite. Korean Journal of Chemical Engineering 32(5), 860-866 (2015).
12. Chung-Hsin Wu, Chao-Yin Kuo, Pui-Kwan Andy Hong, Meng-Jia Chen. Removal of copper by surface-modified celluloses: kinetics, equilibrium, and thermodynamics. Desalination and Water Treatment, 55 (2015). (DOI: 10.1080/19443994.2014.926461)
13. A.Y. Lin, J.H. Hsueh, P.K.A. Hong. Removal of antineoplastic drugs cyclophosphamide, ifosfamide, and 5-fluorouracil and a vasodilator drug pentoxifylline from wastewaters by ozonation. Environ. Sci. Pollut. Res. Int. 2015 Jan; 22(1):508-515.
14. Y.-N. Chao, J.-H. Lin, K.-K. Ng, C.-H. Wu, P.K.A. Hong and C.-F. Lin, “Improving total nitrogen removal in aeration basin retrofitted with entrapped biomass,” Water Science and Technology, 2014; 69(7): 1558-1564.
15. Y.-N. Chao, K.-K. Ng, C.-H. Wu, P.K.A Hong and C.-F. Lin, “Enhancing total nitrogen removal from wastewater of science and industrial park using entrapped biomass,” Environmental Technology, 2014, 35(9-12): 1401-1408.
16. Y. Huang, P.K.A. Hong, D. Zhang and L. Li, “Comparison of cell rupturing by ozonation and ultrasonication for algal lipid extraction from Chlorella vulgaris.” Environmental Technology, Environ Technol. 2014; 35(5-8): 931-937.
17. C.E. Lin, P.K.A. Hong, H.Y. Chiou, T.Y. Yeh and C.M. Kao, “Pressure-assisted Cyclic Washing of Heavy-metal Contaminated Sediments,” International Journal of Environmental Science and Technology, 2014, 11(4), 1017–1026.
18. H.Y. Chiu, P.K.A. Hong, R.Y. Surampalli, S.L. Lin and C.M. Kao, “Application of natural attenuation for the control of petroleum hydrocarbon plume: mechanisms and effectiveness evaluation,” Journal of Hydrology, vol. 505, pp. 126-137, Nov. 2013.
19. C.-F. Lin, Y.-J. Shiu, C.-S. Kuo, A. Y.-C. Lin, C.-H. Wu and P.K.A. Hong, “Photocatalytic Degradation of Morphine, Methamphetamine, and Ketamine by Illuminated TiO2 and ZnO,” Reac Kinet Mech Cat, vol. 110, pp. 559-574, 2013.
20. C.-C. Liu, K.-K. Ng, C.-J. Wu, C.-F. Lin, P.K.A. Hong and P.-Y. Yang, “Organics and Nitrogen Removal from Wastewater Across Plate of Entrapped Mixed Microbial Cells,” Journal of Environmental Science and Management, vol. 16, no. 1, pp. 29-35, 2013.
21. C.-C. Liu, K.-K. Ng, C.-J. Wu, C.-F. Lin, P.K.A. Hong and P.-Y. Yang, “Modelling Organics Biodegradation and Ammonia Nitrification by Entrapped Mixed Microbial Cell Carriers,” Desalination and Water Treatment, doi: 10.1080/19443994.2013.808407, 2013.
22. X. Li, C.-C. Lin, D. Sweeney, J. Earl and P.K.A. Hong, “Composting and trickling filter for treatment of olive mill waste,” Advances in Environmental Research, vol. 2, pp. 131-141, 2013.
23. C.-C. Lin, P.K.A. Hong, “A new processing scheme from algae suspension to collected lipid using sand filtration and ozonation,” Algal Research, 2 (2013) 378-384.
24. C.-J. Cheng and P.K.A. Hong, “Anaerobic of activated sludge after pressure-assisted ozonation digestion,” Bioresource Technology, vol. 142, pp. 69-76, 2013.
25. C.-H. Wang, K.-K. Ng, J.C.-W. Liu, C.-J. Wu, C.-F. Lin and P.K.A. Hong, “The performance of immobilized membrane bioreactor with different membrane operation modes,” Desalination and Water Treatment, vol. 51, pp. 3090-3096, 2013.
26. P.K.A. Hong and T. Xiao, “Treatment of oil spill water by ozonation and sand filtration,” Chemosphere, vol. 91, pp. 641-647, 2013.
27. K.-H. Yang, Y.-C. Lin, M.-D. Fang, C.-H. Wu, S.C. Panchangam, P.K.A. Hong and C.-F. Lin, “Sorption of perfluorooctanoic acid (PFOA) onto sediment in the presence of dissolved natural organics.” Separation Science and Technology, doi: 10.1080/01496395.2012.737887, in press.
28. K.-K. Ng, C.-J. Wu, L.-Y. You, C.-S. Kuo, C.-F. Lin, P.K.A. Hong and P.-Y. Yang, “Bio-entrapped membrane reactor for organic matter removal and membrane fouling reduction,” Desalination and Water Treatment, doi: 10.1080/19443994.2012.708538, in press.
29. P.K.A. Hong, Z. Cha, X. Zhao, C.-J. Cheng and W. Duyvesteyn, “Extraction of bitumen from oil sands with hot water and pressure cycles,” Fuel Processing Technology, vol. 106, pp. 460-467, 2013.
30. K.-K. Ng, C.-J. Wu, H.-L. Yang, S. C. Panchangam, Y.-C. Lin, P.K.A. Hong, C.-H. Wu and C.-F. Lin, “Effect of ultrasound on membrane filtration and cleaning operations,” Separation Science and Technology, vol. 48, pp. 215-222, 2012.
31. A.Y.C. Lin, S.C. Panchangam, C.-Y. Chang, P.K.A. Hong and H.-F. Hsueh, “Removal of perflurooctanoic acid perflurooctane sulfonate via ozonation under alkaline condition,” Journal of Hazardous Materials, vol. 243, pp. 272– 277, 2012.
32. C.-H. Wu, P.K.A. Hong and M.-Y. Jian, “Decolorization of Reactive Red 2 in Fenton and Fenton-like systems: effects of ultrasound and ultraviolet irradiation,” Reac Kinet Mech Cat, vol. 106, pp. 11-24, 2012.
33. C.-H. Wang, J.C.-W. Liu, K.-K. Ng, C.-F. Lin, P.K.A. Hong and P.-Y. Yang, “Immobilized bioprocess for organic carbon and nitrogen removal,” Desalination and Water Treatment, vol. 37, pp. 296-301, 2012.
34. C.-J. Cheng, P.K.A. Hong and C.-F. Lin, “Improved solubilization of activated sludge by ozonation in pressure cycles,” Chemosphere, vol. 87, pp. 637-643, 2012.
35. S.-F. Yang, C.-F. Lin, C.-J. Wu, K.-K. Ng, A.Y.-C. Lin P.K.A. Hong, “Fate of sulfonamide antibiotics in contact with activated sludge - Sorption and biodegradation.” Water Research, vol. 46, pp. 1301-1308, 2012.
36. C.-H. Wang, J.C.-W. Liu, K.-K. Ng, C.-F. Lin, P.K.A. Hong and P.Y. Yang, “Immobilized bioprocess for organic carbon and nitrogen removal,” Desalination and Water Treatment - Science and Engineering, vol. 37, pp. 296-301, 2012.
37. T.-H. Yu, A.Y.-C. Lin, S.C. Panchangam, P.K.A. Hong, P.-Y. Yang and C.-F. Lin, “Biodegradation and bio-sorption of antibiotics and non-steroidal anti-inflammatory drugs using immobilized cell process,” Chemosphere, vol. 84, pp. 1216-1222, 2011.
38. S.-F. Yang, C.-F. Lin, A.Y.-C. Lin, P.K.A. Hong, “Sorption and biodegradation of sulfonamide antibiotics by activated sludge: Experimental assessment using batch data obtained under aerobic conditions,” Water Research, vol. 45, pp. 3389-3397, 2011.
39. K.-K. Ng, C.-F. Lin, S.C. Panchangam, P.K.A. Hong and P.-Y. Yang, “Reduced membrane fouling in a novel bio-entrapped membrane reactor for treatment of food and beverage processing wastewater,” Water Research, vol. 45, pp. 4269-4278, 2011.
40. C.E. Lin, C.T. Chen, C.M. Kao, P.K.A. Hong and C.Y. Wu, “Development of the sediment and 2ater quality management strategies for the salt-water river, Taiwan,” Marine Pollution Bulletin, vol. 63, pp. 528-534, 2011.
41. C.H. Wu, C.Y. Kuo and P.K.A. Hong, “Effects of operational parameters on decolorization of C.I. Reactive Black 5 in UV/TiO2 system,” Water Science and Technology, vol. 63, pp. 1032-1036, 2011.
42. W.-I Wu, C.-H. Wu, P.K.A. Hong and C.-F. Lin, “Capture of metallic copper by high gradient magnetic separation system,” Environmental Technology, vol. 32, pp. 1427-1433, 2011.
43. Y.-C.g Lin, S.C. Panchangam, C.-H. Wu, P.K.A. Hong and C.-F. Lin, “Effects of water washing on removing organic residues in bottom ash of municipal solid waste incinerators,” Chemosphere, vol. 82, pp. 502-506, 2011.
44. W.-I. Wu, C.-F. Lin, S.C. Panchangam, C.-H. Wu and P.K.A. Hong, “Recovery of metallic copper by integrated chemical reduction and high gradient magnetic separation,” Environmental Technology, vol. 32, pp. 817-824, 2011.
45. C.-J.G. Jou, C.-L. Lee, C.-R. Wu, S.-C. Hsieh and P.K.A. Hong, “Enhanced dechlorination of chlorobenzene by microwave-induced zero-valent iron: particle effects and activation energy,” Environmental Chemistry Letters, doi:10.1007/s10311-010-0286-Y, 2010.
46. Y.-C. Lin, J.-H. Yen, S.K. Lateef, P.K.A. Hong and C.-F. Lin, “Characteristics of residual organics in municipal solid waste incinerator bottom ash,” Journal of Hazardous Materials, vol. 182, pp. 337-345, 2010.
47. Z.Cha, C.-F. Lin, C.-J. Cheng and P.K.A. Hong, “Removal of oil and oil sheen from produced water by pressure-assisted ozonation and sand filtration,” Chemosphere, vol. 78, pp. 583-590, 2010.
48. K.-K. Ng, C.-F. Lin, S.K. Lateef, P.K.A. Hong and P.-Y. Yang, “The effect of soluble microbial products on membrane fouling in fixed carrier biological system,” Separation and Purification Science, vol. 72, pp. 98-104, 2010.
49. C.-H. Yu, C.-H. Wu, T.-H. Ho and P.K.A. Hong, “Decolorization of C.I. reactive black 5 in UV/TiO2, UV/oxidant and UV/TiO2/oxidant systems: A comparative study,” Chemical Engineering Journal, vol. 158, pp. 578-583, 2010.
50. A.Y.C. Lin, C.-F. Lin, J.-M. Chiou and P.K.A. Hong, “O3 and O3/H2O2 treatment of sulfonamide and macrolide antibiotics in wastewater,” Journal of Hazardous Materials, vol. 171, pp. 452-458, 2009.
51. T.-T. Tsai, C.-M. Kao and P.K.A. Hong, “Treatment of tetrachloroethylene-contaminated groundwater by surfactant-enhanced persulfate/BOF slag oxidation-a laboratory feasibility study,” Journal of Hazardous Materials, vol. 171, pp 571-576, 2009.
52. T. Y. Chen, C. M. Kao, P.K.A. Hong, C. E. Lin and S. H. Liang, “Application of ozone on the decolorization of reactive dyes - Orange-13 and Blue-19,” Desalination, vol. 249, pp. 1238-1242, 2009.
53. P.K.A. Hong and S. Nakra, “Rapid extraction of sediment contaminants by pressure cycles,” Chemosphere, vol. 74, pp. 1360-1366, 2009.
54. P.K.A. Hong, S. Nakra, J. Kao and D. Hayes, “Pressure-assisted ozonation of PCB and PAH contaminated sediments,” Chemosphere, vol. 72, pp. 1757-1764, 2008.
55. P.K.A. Hong, Y. Huang, C.-F. Lin and A. Lin, "Pressure-assisted O3/H2O2 process for degradation of MTBE," Journal of Environmental Engineering and Management, vol. 18, pp. 239-247, 2008.
56. T.-T. Tsai, C.-M. Kao, P.K.A. Hong, S.-H. Liang and H.-Y. Chien, “Remediation of TCE-contaminated aquifer by an in situ three-stage treatment train system,” Colloids and Surfaces A: Physicochemical and Engineering Aspects, vol. 322, pp. 130-137, 2008.
57. P.K.A. Hong, X. Cai and Z. Cha, "Pressure-assisted chelation extraction of lead from contaminated soil," Environmental Pollution, vol. 153, pp. 14-21, 2008.
58. Y.-I. Choi and P.K.A. Andy, “Ozonation of polycyclic aromatic hydrocarbon in hexane and water: Identification of intermediates and pathway,” Korean Journal of Chemical Engineering, vol. 24, pp. 1003-1008, 2008.
59. P.K.A. Hong, J.C. Chao, “Polar-nonpolar, acetic acid/heptane, solvent medium for degradation of pyrene by ozone,” Industrial & Engineering Chemistry Research, vol. 43, pp. 7710-7715, 2004.
60. Y. Zeng and P.K.A. Hong, “Slurry-Phase Ozonation for Remediation of Sediments Contaminated by Polycyclic Aromatic Hydrocarbons,” Journal of the Air & Waste Management Association, vol. 52, pp. 174-185, 2002.
61. P.K.A. Hong and Y. Zeng, “Degradation of Pentachlorophenol by Ozonation and Biodegradability of Intermediates,” Water Research, vol. 36, pp. 4243-4254, 2002.
62. P.K.A. Hong, C. Li, S. Banerji and T. Regmi, “Extraction, recovery, and biostability of DTPA for remediation of heavy metal contaminated soil,” Journal of Hazardous Materials, vol. 94, pp. 253-272, 2002.
63. Y. Zeng, P.K.A. Hong and D. Wavrek, “Response to Comment on “Integrated chemical-biological treatment of benzo[a]pyrene”,” Environmental Science and Technology, vol. 34, pp. 4256-4257, 2000.
64. Y. Zeng, P.K.A. Hong and D. Wavrek, “Origin of phthalates and aliphatics in ozonation-response to comment on chemical-biological treatment of pyrene,” Water Research, vol. 35, pp. 250-252, 2001.
65. Y. Zeng, P.K.A. Hong and D. Wavrek, Integrated “Chemical-biological treatment of benzo[a]pyrene,” Environmental Science and Technology, vol. 34, pp. 854-862, 2000.
66. Y. Zeng, P.K.A. Hong and D. Wavrek, “Chemical-biological treatment of pyrene,” Water Research, vol. 34, pp. 1157-1172, 2000.
67. P.K.A. Hong, C. Li, S.K. Banerji and T. Regmi, “Extraction, recovery, and biostability of EDTA for remediation of heavy metal-contaminated soil,” Journal of Soil Contamination, vol. 8, pp. 81-103, 1999.
68. C.-H. Kuo, L. Zhong, M.E. Zappi and P.K.A. Hong, “Kinetics and mechanism of the reaction between ozone and hydrogen peroxide in aqueous solutions,” Canadian Journal of Chemical Engineering, vol. 77, pp. 473-482, 1999.
69. P.K.A. Hong and Y.-Y. Macauley, “Corrosion and leaching of copper tubing exposed to chlorinated drinking water,” Water, Air, and Soil Pollution, vol. 108, pp. 457-471, 1998.
70. Y. Y. Luo and P.K.A. Hong, "Oxidation and dissolution of lead in chlorinated drinking water," Advances in Environmental Research, vol. 1, pp. 84-97, 1997.
71. P.K.A. Hong and T. C. Chen, "Extractive recovery of cadmium from soil using pyridine 2,6 dicarboxylic acid,” Water, Air, And Soil Pollution, vol. 86, pp. 335-346, 1996.
72. P.K.A. Hong, M. Zappi, C. H. Kuo and D. Hill, "Modeling the kinetics of illuminated and dark advanced oxidation processes,” Journal of Environmental Engineering, vol. 122, pp. 58-62, 1996.
73. T. C. Chen, E. Macauley, P.K.A. Hong, "Selection and test of effective chelators for removal of heavy metals from contaminated soils," Canadian Journal of Civil Engineering, vol. 22, pp. 1185-1197, 1995.
74. Andrew Hong, Nan Min Wu, "TiO2 Photocatalyzed Degradation of CH2Cl2, CHCl3, CCl4, and CHClCCl2 Vapors," Ubamari, vol. 35, pp. 3-27, 1995.
75. T. C. Chen and P.K.A. Hong, "Chelating extraction of lead and copper from an authentic contaminated soil using N (2 acetamido)iminodiacetic acid and S carboxymethyl L cysteine," Journal of Hazardous Materials, vol. 41, pp. 147-160, 1995.
76. E. Macauley and P.K.A. Hong, "Chelation extraction of lead from soil using pyridine-2,6-dicarboxylic acid," Journal of Hazardous Materials, vol. 40, pp. 257-270, 1995.
77. P.K.A. Hong, T.-C. Chen, and R.W. Okey, "Chelating extraction of copper from soil using S Carboxymethylcysteine," Water Environment Research, vol. 67, pp. 971-978, 1995.
78. P.K.A. Hong and T.-C. Chen, "Catalyzed autoxidation of hydrazine by cobalt(II) tetrasulfophthalocyanine," Environmental Science and Technology, vol. 27, pp. 2404-2411, 1993.
79. P.K.A. Hong, S. Boyce and M. Hoffmann, "Catalytic autoxidation of chemical contaminants by hybrid complexes of cobalt(II) phthalocyanine," Environmental Science and Technology, vol. 23, pp. 533-540, 1989.
80. P.K.A. Hong, D. Bahnemann and M. Hoffmann, "Co(II)Tetrasulfophthalocyanine on titanium dioxide: A new efficient electron relay for the photocatalytic formation and depletion of hydrogen peroxide in aqueous suspension," Journal of Physical Chemistry, vol. 91, pp. 2109-2117, 1987.
81. P.K.A. Hong, D. Bahnemann and M. Hoffmann, "Co(II)Tetrasulfophthalocyanine on titanium dioxide: II. The kinetics and mechanisms of the photocatalytic autoxidation of aqueous sulfur dioxide." Journal of Physical Chemistry, vol. 91, pp. 6245-6251, 1987.
82. M. Hoffmann and P.K.A. Hong, "Catalytic oxidation of reduced sulfur compounds by homogeneous and hybrid Co(II) phthalocyanine complexes," Science of the Total Environment, vol. 64, pp. 99-115, 1987.
83. S. Boyce, M. Hoffmann, P.K.A. Hong and L. Moberly, "Catalysis of the autoxidation of aquated sulfur dioxide by homogeneous metal phthalocyanine complexes," Environmental Science and Technology, vol. 17, pp. 602-611, 1983.

**Conference Presentations**

1. Keynote presentation. Andy Hong. Interfacial Processes in Remediation of Contaminated Soil/Sediment and Water. Presented at ISNNE, Xi’an, China, 4/28/2019.
2. Keynote presentation. Andy Hong. Harvest and Conversion of Algal Biomass for Energy. Presented at the 8th Omics in the Ocean International Symposium, Taiwan, June 21, 2019.
3. Keynote presentation. Andy Hong. Interfacial Processes for Remediation of Environmental Media. Presented at 2019 KKNN Conference, Taiwan. July 3, 2019.
4. Hong. Expanding Ozone Microbubble – Sand Filtration Technology for Produced Water Management and Groundwater Remediation, Presented to Renewable Energy Initiatives, Dec. 28, 2017.
5. X. Zhao, A. Hong. Algal Lipid Harvesting by Rupturing with Pressure Cycles of Ozonation and Coalescing Filtration. Algae Biomass Summit, 10/29-11/1, 2017; Salt Lake City, UT.
6. Hong. Expanding Microbubble Technologies in Environmental & Energy Fields: Applications. Presented at Pingtung University of Science and Technology, July 9, 2017
7. Hong. PRESSURE CYLCES-ASSISTED OZONATION TREATMENT OF PRODUCED WATER BEFORE AND AFTER ALGAE CULTIVATION, Presented at Chemical Engineering Graduate Seminar, U of U, April 5, 2017.
8. X. Zhao, C.C. Lin, A. Hong, PRESSURE CYLCES-ASSISTED OZONATION TREATMENT OF PRODUCED WATER BEFORE AND AFTER ALGAE CULTIVATION. Presented at IBE 2017 Conference, 3/30-4/1, 2017, Salt Lake City, UT.
9. Hong. Expanding Ozone Microbubble - Sand Filtration Technology for Produced Water Management and Groundwater Remediation. Presented at Beijing Petrochemical Engineering Co., LTD. 1/1/2017, Beijing, China.
10. Hong. HOT Technologies in Environmental & Energy Applications. Presented at YCLT-EGI Conference, 11/23/2015; Salt Lake City, UT.
11. Hong. Harvest and Conversion of Cultivated Algae for Biodiesel. Seminar presented at Dept. Chem. Matl. Eng., National Kaohsiung University of Applied Sciences, Nov. 27, 2015.
12. Hong. Expanding Microbubble Technologies in Environmental and Energy Fields: Applications. Presented at Westminster College, Sept. 28, 2015. Invited talk at Sinotech Consultants, Inc., Taiwan: Expanding Microbubble Technologies in Environmental & Energy Fields: Applications. Invited Talk/Keynote, Presented, 08/02/2013.
13. Invited Workshop hosted by Environmental Protection Agency of New Taipei City. Government co-hosted by TESC, Inc., Taiwan on: Soil and Groundwater Protection in the US - Research, Management, and Development . Invited Talk/Keynote, Presented, 07/26/2013.
14. P.K.A. Hong, P.Romero, M. Vrtis and X. Zhao, “Green extraction of bitumen from tar sands for pavement binder,” 2012 UDOT Annual Conference Research & Innovation, Sandy, UT, 2012.
15. P.K.A. Hong, “Efficient reactor for algae collection and biofuel conversion,” invited talk/keynote to Taipower, Taiwan, 2012.
16. Kok-Kwang Ng, Li-Yuan You, Cheng-Fang Lin, Andy Pui-Kwan Hong, Ping-Yi Yang, Performance of Bio-Entrapped Membrane Reactor in the Removal of Organic Matters and Membrane Fouling, The 4th IWA-ASPIRE Conference, Oct. 2-6, 2011, Tokyo, Japan.
17. X. Zhao, Z. Cha, C.-J. C, P.K.A. Hong and W. Duyvesteyn, “HOSE: pressure assisted extraction of bitumen from oil sands for high yield and environmentally acceptable byproducts,” AlCHE 2011 Annual Meeting, Minneapolis, MI, 2011.
18. C.-C. Lin, C.-J. Cheng and P.K.A. Hong, “Concentrating and rupturing of algae for lipid,” 1st International Conference on Algal Biomass, Biofuels & Bioproducts, Saint Louis, MO, 2011.
19. C.-J. Cheng and P.K.A. Hong, “Pressure cycles of ozonation and aeration for activated sludge solubilization,” AIChE 2010 Annual Meeting, Salt Lake City, UT, 2011.
20. P.K.A. Hong, “Pressure-assisted ozonation of PCB and PAH contaminated sediments,” The 26th International Conference on Soils, Sediments, Water and Energy, Amherst, MA, 2010.
21. C.-H. Yu, C.-H. Wu, T.-H. Ho, P.K.A. Hong, “Effects of operational parameters on decolorization of C.I. Reactive Black 5 in UV/TiO2 system,” 2010 World Water Congress, Montreal, Canada, 2010.
22. C.-J. Cheng, P.K.A. Hong, C.-F. Lin and T. Palmgren, “Integrated treatment for removing oil and oil sheen in produced and flowback water,” 2010 Energy Resources Produced Water Conference, Laramie, WY, 2010.
23. C.-J.G. Jou, C.-L. Lee, C.-R. Wu, S.-C. Hsieh and P.K.A. Hong, “Enhanced degradation of chlorobenzene by microwave-induced through zerovalent Iron: particles effect and activation energy,” Industrial Symposium II on Microwave Processing of Materials. ICMAT, Singapore, 2009.
24. P.K.A. Hong and J.C.M. Kao, “Removal of PCB and PAH from sediment by ozonation in pressure cycles,” The Nineteenth Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2009.
25. P.K.A. Hong, “New ozonation process for water treatment toward sustainable energy development,” Water/Energy Sustainability Symposium, Ground Water Pollution Council Annual Forum, Salt Lake City, UT, 2009.
26. Y. Huang, J.-M. Chiou, A. Lin, C.-F. Lin and P.K.A. Hong, “Degradation of EDCs and PPCPs by ozone and hydrogen peroxide,” The Nineteenth Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2009.
27. P.K.A. Hong, Z. Cha, C.-F. Lin, A. Lin, “Pressure-assisted ozonation for rehabilitation of produced water,” 19th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2009.
28. S. Burian, E. Jones, P.K.A. Hong and R. Goel, “Water management for oil sands and oil shale development in Utah: challenges and solutions,” Western U.S. Oil Sands Conference, Salt Lake City, UT, 2009.
29. P.K.A. Hong, C.-F. Lin, Z. Cha and C.-J. Cheng, “Treatment of produced water by pressure-assisted ozonation and sand filtration,” Tailings and Mine Waste Conference 2009, Banff, AB, 2009.
30. P.K.A. Hong and Z. Cha, “Heightened oil sands extraction by pressure cycles,” Tailings and Mine Waste Conference 2009, Banff, AB, 2009.
31. P.K.A. Hong, “Chelation extraction of metal contaminants from soil - new contacting technique,” International Symposium of Heavy Metal Pollution of Soil and Remediation, National Pingtung University of Science and Technology, Pingtung County, Taiwan, 2008.
32. Z. Cha and P.K.A. Hong, “Pressurized ozone treatment of produced water and overheated water extraction of oil sands,” Oil Sands Conference, Salt Lake City, UT, 2008.
33. P.-S. Ciou, A.Y.-C. Lin, P.K.A. Hong, “Pressure-assisted ozonation for degradation of PFOA and PFOS,” 1st IWA Asia-Pacific Young Water Professionals Conference: "Meeting Water Challenges in Asia-Pacific Region", International Water Association Conference at Gwangju Institute of Science and Technology, Gwangju, Korea, 2008.
34. S.J. Burian, R. Goel, P.K.A. Hong, L. Li, E. Jones, Z. Cha, B. Dudley-Murphy and G. Nash, “Oil shale development in the western United States: Water Resources Challenges, Impacts and Solutions,” EWRI conference, April 2008.
35. R. Goel, S. Burian, P.K.A. Hong, G. Nash and D. Murphy, “New approaches to treat produced water and perform water availability impact assessments for U.S. oil sands and oil shale development,” 2007 AIChE Annual Meeting, Salt Lake City, UT.
36. P.K.A. Hong and Y. Huang "Pressure-assisted O3/H2O2 for degradation of MTBE," International Conference on Emerging Water Treatment and Groundwater Remediation Issues, Kaohsiung, Taiwan, 2007.
37. Z. Cha and P.K.A. Hong, "Heightened ozonation treatment of produced water," 2007 AIChE Annual Meeting, Salt Lake City, Utah, 2007.
38. Z. Cha, X. Cai, R. Levey and P.K.A. Hong, "Pressure-assisted ozonation of produced water and process water of oil shale," 27th Oil Shale Symposium, Colorado School of Mines, Golden, CO, 2007.
39. Z. Cha and P.K.A. Hong, "Heightened ozonation treatment of produced water for removal of hydrocarbons and prevention of oil sheen formation," ACS 62nd Northwest Regional Meeting, Boise, Idaho, 2007.
40. Z. Cha and P.K.A. Hong, "Treatment of produced water by heightened ozonation treatment for removal of hydrocarbons and prevention of oil sheen formation," 2007 AWWA Spring water Quality Symposium, Salt Lake City, Utah, 2007.
41. Y. Huang and P.K.A. Hong, "Degradation of MTBE by ozone and hydrogen peroxide in the presence of microbubbles," 2007 AWWA Spring water Quality Symposium, Salt Lake City, Utah, 2007.
42. S. Nakra and P.K.A. Hong, “Degradation of PCB and PAH in Waukegan Harbor sediment using heightened ozonation treatment,” 17th Annual AEHS West Coast Conference on Soils, Sediments and Water, San Diego, CA, 2007.
43. P.K.A. Hong and Y. Huang, "Degradation of MTBE by ozone and hydrogen peroxide in the presence of microbubbles," 17th Annual AEHS West Coast Conference on Soils, Sediments and Water, San Diego, CA, 2007.
44. P.K.A. Hong, “Heightened chelation extraction of metals from contaminated soil,” International Scientific Conference, Ascona, Switzerland, 2007.
45. P.K.A. Hong, S. Nakra and D. Hayes, “Degradation of PCB and PAH in contaminated sediments,” 2007 Battelle Conference, 2007.
46. D. Hayes and P.K.A. Hong, “Innovative Approach to In situ Sediment Remediation,” 2007 Battelle Conference, 2007.
47. Starr, D. Hayes and P.K.A. Hong, “Development and design of an in situ sediment ozonator for contaminants remediation,” the 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
48. Z. Cha, H. Xu, P.K.A. Hong and D. Hayes, “Degradation by ozonation of PCBs in spiked and Waukegan Harbor sediments,” The 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
49. H. Xu, P.K.A. Hong and D. Hayes, “Chemical-biological treatment of PCBs in contaminated sediments,” The 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
50. P.K.A. Hong, H. Xu and D. Hayes, “Reaction kinetics and products of arochlor congeners with ozone,” The 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
51. T. Datta, H. Xu, P.K.A. Hong and D. Hayes, “Chemical treatment of DDT in organic and aqueous phases and biological incubation,” the 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
52. S. Nakra, P.K.A. Hong and D. Hayes, “Degradation of PAH contaminants in St. Louis river sediment with chemical-biological treatment,” The 16th Annual AEHS Meeting & West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2006.
53. P.K.A. Hong, H. Xu and D. Hayes, “In situ chemical-biological treatment of PCB-contaminated sediment,” 15PPthPP Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2005.
54. Hayes and P.K.A. Hong, “Innovative concept for in situ contaminated sediment remediation,” Western Dredging Association (WEDA) 2004 conference, Orlando, Florida, 2004.
55. P.K.A. Hong, H. Xu, D. Hayes and S. Chaudhuri, “Degradation of DDT and PCP by ozone—kinetics and mechanisms,” 14PPthPP Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, San Diego, CA, 2004.
56. P.K.A. Hong and Y. Zeng “Degradation of pentachlorophenol by ozonation and biodegradability of intermediates,” The 3rd international conference, Monterey, CA, 2002.
57. P.K.A. Hong, J.C. Chao and D. Wavrek, “Ozonated bipolar solvent system for degradation of polycyclic aromatic hydrocarbons,” Multiphasic Chemical and Biochemical Reactions. ACS Award for Creative Advances in Environmental Science and Technology: Honoring Dr. Michael R. Hoffmann, American Chemical Society National Meeting, San Diego, CA, 2001.
58. J.C. Chao, P.K.A. Hong, V. Capps, M.E. Zappi and C.H. Kuo, “Optimizing the OBB3BB-HBB2BBOBB2BB process for water treatment,” Spring Water Quality Symposium, AWWA, Salt Lake City, UT, 2000.
59. J.C. Chao, P.K.A. Hong and D. Wavrek, “Degradation of benzo[a]pyrene by ozone in a homogeneous solvent system,” 2000 AWWA Spring Water Quality Symposium, Salt Lake City, UT,2000.
60. Y. Choi, P.K.A. Hong and D. Wavrek, “Ozonation of hazardous contaminants,” 2000 AWWA Spring Water Quality Symposium, Salt Lake City, UT, 2000.
61. Y. Zeng, P.K.A. Hong and D. Wavrek, “Slurry-phase ozonation for remediation of sediments contaminated by polycyclic aromatic hydrocarbons,” the 93PPrdPP Annual Conference & Exhibition, Air & Waste Management Association, Salt Lake City, UT, 2000.
62. J.C. Chao, P.K.A. Hong and D. Wavrek “Degradation of pyrene by ozone in a homogeneous solvent system,” the 93PPrdPP Annual Conference & Exhibition, Air & Waste Management Association, Salt Lake City, UT, 2000.
63. P.K.A. Hong, Y. Zeng and D. Wavrek, “Integrated chemical-biological treatment of benzo[a]pyrene,” 2000 AEHS conference, San Diego, CA, 2000.
64. R.W. Peters, M.C. Negri and P.K.A. Hong, “Chelating extraction for removal of radionuclides from contaminated soils,” 1999 Conference on Hazardous Waste Research-Gateways to Environmental Solutiions, St. Louis, MO, 1999.
65. P.K.A. Hong, J.C. Chao, R. Okey and R. Peters, “Selection and performance of chelating agents for remediation of radionuclide/heavy metal contaminated soil,” The Ninth Annual West Coast Conference on Contaminated Soils and Water, Oxnard, CA, 1999.
66. J.C. Chao, P.K.A. Hong, R. Okey and R. Peters, “Selection of chelating agents for remediation of radionuclide-contaminated soil,” 1998 Conference on Hazardous Waste Research, Bridging Gaps in Technology and Culture, Snowbird, Utah, 1998.
67. Y. Zeng, P.K.A. Hong and D. Wavrek, “Chemical-biological treatment of pyrene,” 1998 Conference on Hazardous Waste Research, Bridging Gaps in Technology and Culture, Snowbird, Utah, 1998.
68. P.K.A. Hong, V. Capps, M. Zappi and C.H. Kuo, “Modeling, validating, and optimizing OBB3BB/HBB2BBOBB2BB reactions for contaminant treatment,” 1998 Conference on Hazardous Waste Research, Bridging Gaps in Technology and Culture, Snowbird, Utah, 1998.
69. C.H. Kuo, L. Zhong, M.E. Zappi and P.K.A. Hong, “An analysis of the hydrogen peroxide-ozone reaction in aqueous solutions,” 13th Ozone World Congress, Kyoto, Japan, 1997.
70. P. Lo and P.K.A. Hong, “Regeneration of activated carbon Using advanced oxidation processes,” International Conference on Environmental Engineering and Chemical Engineering, Guangzhou, China,1997.
71. P.K.A. Hong, “Chelating extraction and recovery of heavy metals from contaminated soils,” International Conference on Environmental Engineering and Chemical Engineering, Guangzhou, China, 1997.
72. P.K.A. Hong, J.C. Chao, R. Okey and R. Peters, “Structure-activity relationship for selection and performance prediction of chelating agents,” the 9th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Pittsburgh, PA, 1997.
73. P.K.A. Hong, R. Okey, S. Banerji and R. Peters, “Application of chelating agents for removal of heavy metals from soils,” 12th Annual Conference on Hazardous Waste Research, EPA GP/RM HSRC, Kansas City, MO, 1997.
74. Y.M. Wang, S. Banerji and P.K.A. Hong, “Biodegradation of chelating agents used for metal removal from contaminated soils,” 12th Annual Conference on Hazardous Waste Research, EPA GP/RM HSRC, Kansas City, MO, 1997.
75. Li, W.M. Jiang, P.K.A. Hong, R. Okey and S. Banerji, “Improved recovery techniques for strong chelating agents following heavy metal extraction,” 12th Annual Conference on Hazardous Waste Research, EPA GP/RM HSRC, Kansas City, MO, 1997.
76. Li and P.K.A. Hong, “Recovery of chelating agents during remediation of heavy metals contaminated soil,” Water Environment Association of Utah (WEAU) Annual Conference and Exposition, St. George, Utah, 1997.
77. P. Lo and P.K.A. Hong, “Activated carbon regeneration using advanced oxidation processes,” Water Environment Association of Utah (WEAU) Annual Conference and Exposition, St. George, Utah, 1997.
78. Y. Zeng and P.K.A. Hong, “Ozonation of PAHs in a soil slurry,” Water Environment Association of Utah (WEAU) Annual Conference and Exposition, St. George, Utah, 1997.
79. P.K.A. Hong, V. Capps, M. Zappi and C.H. Kuo, “Reactions of OBB3BB and HBB2BBOBB2BB for contaminant degradation,” World Environmental Congress, Cincinnati, OH, 1996.
80. T.C. Chen, Y.C. Tsan, K.J. Yeh, Y.M. Wang, C.T. Wang and P.K.A. Hong, “Extraction and recovery of heavy metals from contaminated soils,” the 8th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Birmingham, AL, 1996.
81. Y.M. Wang, Y.C. Tsan, T.C. Chen, K.J. Yeh, C.T. Wang and P.K.A. Hong, “Mineral stabilization of heavy metals contaminated soils,” the 8th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Birmingham, AL, 1996.
82. P.K.A. Hong, C. Li, W.-M. Jiang and T.-C. Chen, “Chelating agents for extraction of heavy metals: complexing power, selectivity, and recoverability,” the 8th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Birmingham, AL, 1996.
83. T. Scholten, P.K.A. Hong, D. Wavrek, M. Zappi and C. Kuo, “Advanced oxidation pretreatment to enhance biological remediation of PAH-contaminated soils,” the 8th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Birmingham, AL, 1996.
84. P.K.A. Hong and C. Li, “Chelating extraction and recovery technique for remediation of contaminated media,” Water Environment Association of Utah (WEAU) Annual Conference and Exposition, St. George, Utah, 1996.
85. V. Capps and P.K.A. Hong, “Degradation of nitrophenol using advanced oxidation processes,” Water Environment Association of Utah (WEAU) Annual Conference and Exposition, St. George, Utah, 1996.
86. T. Regmi, S.K. Banerji, P.K.A. Hong, “Biodegradation of chelating agents used for metal removal from contaminated soils,” HSRC/WERC Joint Conference on the Environment, Albuquerque, NM, 1996.
87. V. Capps and P.K.A. Hong, “Kinetics and mechanism of degradation of hazardous contaminants using ozone and hydrogen peroxide,” HSRC/WERC Joint Conference on the Environment, Albuquerque, NM, 1996.
88. P.-S. Lo and P.K.A. Hong, “Contaminants mineralization using activated carbon-AOPs system,” HSRC/WERC Joint Conference on the Environment, Albuquerque, NM, 1996.
89. P.K.A. Hong and W.-M. Jiang, “Chelating extraction and recovery of heavy metals for remediation of contaminated soil,” HSRC/WERC Joint Conference on the Environment, Albuquerque, NM, 1996.
90. P.K.A. Hong and C. Li, “Improved recovery of heavy metals and chelating agents following extraction from contaminated soil,” HSRC/WERC Joint Conference on the Environment, Albuquerque, NM, 1996.
91. T. Scholten, P.K.A. Hong and M. Zappi, “Modeling biological treatment of AOPs-pretreated polynuclear aromatic hydrocarbons,” Engineering Foundation Conferences on Bioremediation of Surface & Subsurface Contamination, Palm Coast, FL, 1996.
92. P.K.A. Hong, M. Zappi and C.-H. Kuo, “Modeling and optimizing advanced oxidation processes for hazardous waste treatment,” the 7th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1995.
93. R. Okey, S.W. Lin, and P.K.A. Hong, "Predicting stability constants of various chelating agents using QSAR technology,” the 7th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1995.
94. P.K.A. Hong, “Chelating extraction of heavy metals from soil-a remediation technology from flasks to field test,” 1995 Five Centers Research Conference, Gleneden Beach, Oregon, 1995.
95. M. Zappi, M. Qasim, P.K.A. Hong and C. Kuo, “Treatment of explosives contaminated groundwater using UV irradiated, dark, and/or sonically enhanced advanced oxidation processes,” 1995 AIChE Summer National Meeting, Boston, MA, 1995.
96. P.K.A. Hong, R. Okey and University of Utah Center of Environmental Technologies, “Workshop on chelating agents design and application in heavy metals extraction from contaminated soil,” Conference on Hazardous Waste Research, Manhattan, KS, 1995.
97. P.K.A. Hong, R. Okey, S.W. Lin and T.C. Chen, "Structure-activity relationship of heavy metals extraction from soil by chelating agents," Conference on Hazardous Waste Research, Manhattan, KS, 1995.
98. P.K.A. Hong, K. Jakob, M. Zappi, C.H. Kuo, "Optimizing advanced oxidation processes for hazardous waste treatment," Conference on Hazardous Waste Research, Manhattan, KS, 1995.
99. Toro, P.K.A. Hong and M. Zappi, “Treatment of explosives contaminated groundwater using advanced oxidation processes,” the 1995 Global Demilitarization Symposium and Exhibition, St. Louis, MO, 1995.
100. C.H. Kuo, L. ZHong, M.E. Zappi and P.K.A. Hong, "The role of hydroxyl radical in the oxidation of hazardous pollutants by hydrogen peroxide ozone mixtures," Proceedings of the 12th World Congress of the International Ozone Association, Lille, France, 1995, vol. 1, pp. 291-302.
101. M.E. Zappi, P.K.A. Hong, C.H. Kuo, and D.O. Hill, “Treatment of TNT contaminated waters using peroxone with and without sonolytic catalyzation,” World Environmental Congress, London, Canada, 1995.
102. M.E. Zappi, R. Swindle, P.K.A. Hong and N. Francingues, “The AOP toolbox-a technique for selecting advanced oxidation processes for groundwater remediation,” the 18th Annual Army Environmental Technology Symposium, Williamsburg, VA, 1994.
103. P.K.A. Hong, M.E. Zappi and C.H. Kuo, "Peroxone for remediation of TNT contaminated groundwater," the 67th Annual Conference & Exposition, Water Environment Federation, Chicago, IL, 1994.
104. C.H. Kuo, L. ZHong, M.E. Zappi and P.K.A. Hong, "The role of hydrogen peroxide ozone reaction in the advanced oxidation of hazardous pollutants,” the 6th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1994.
105. P.K.A. Hong and E. Macauley, "Extraction and recovery of lead from soil using pyridine 2,6 dicarboxylic acid", the 6th ACS I&EC Division Special Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1994.
106. P.K.A. Hong, M.E. Zappi and C.H. Kuo "UV illuminated advanced oxidation processes for remediation of explosive contaminated groundwater", 1994 ASCE National Conference on Environmental Engineering, 1994.
107. M.E.Zappi, J. Cullinane, P.K.A. Hong and R. Cerar, "Treatment of groundwater contaminated with high levels of explosives using advanced oxidation processes," AOT 1, The First International Conference on Advanced Oxidation Technologies for Water and Air Remediation, London, Ontario, Canada, 1994.
108. P.K.A. Hong, M.E. Zappi, and C.H. Kuo, "Kinetics and mechanism of UV/H2O2/O3 treatments for explosive contaminated groundwater", the AOT 1, The First International Conference on Advanced Oxidation Technologies for Water and Air Remediation, London, Ontario, Canada, 1994.
109. P.K.A. Hong, "Removal of heavy metals from soil using chelates", the Conference on Hazardous Waste Remediation, Bozeman, MT, 1994.
110. T.C. Chen, P.K.A. Hong, "Removal and recovery of cadmium from soil using pyridine 2,6 dicarboxylic acid chelate", 1994 CSCE Environmental Engineering Conference, Winnipeg, Manitoba, 1994.
111. M.E. Zappi, P.K.A. Hong, and R. Cerar, "Treatment of groundwater contaminated with high levels of explosives using traditional and non traditional advanced oxidation processes", the 1993 HMCRI Superfund Conference, Washington, D.C, 1993.
112. P.K.A. Hong, T. Chen and R. Okey "Extraction of heavy metals from contaminated soils using selected chelates", the Water Environment Federation 66th Annual Conference & Exposition, Hazardous Wastes & Groundwater, Anaheim, CA, 1993, vol. 5, pp.171 182.P.K.A. Hong, T. Chen and R. Okey, "Chelating extraction of zinc from soils using n (2 acetamido)iminodiacetic acid", The 5th ACS Annual Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1993, 1993 Special Symposium, vol. 3, pp. 788 791.
113. P.K.A. Hong and Y. Luo, "The source and mechanisms of copper in drinking water," The 5th ACS Annual Symposium on Emerging Technologies in Hazardous Waste Management, Atlanta, GA, 1993, 1993 Special Symposium, vol. 2, pp. 586-589.
114. T. Chen and P.K.A. Hong, "The catalytic oxidation of hydrazine," the CSCE 1993 Annual Conference, Fredericton, Brunswick, Canada, 1993, vol. 3, pp. 393 402.
115. Y. Y. Luo and P.K.A. Hong, "How lead and copper get into drinking water", the Utah Academy of Sciences, Arts & Letters Spring Meetings, Cedar City, UT, 1993.
116. J.Y. Huang and P.K.A. Hong, "Control of copper in drinking water," the Utah Academy of Sciences, Arts & Letters Spring Meetings, Cedar City, UT, 1993.
117. Macauley, T. C. Chen, P.K.A. Hong and R. Okey, "Chelate extraction of lead from contaminated soils,” the Utah Academy of Sciences, Arts & Letters Spring Meetings, Cedar City, UT, 1993.

**Research Projects**

University of Utah New Faculty Start up Fund, $44,000. September, 1987.

"Groundwater and Geochemistry Evaluation for Sharon Steel/Midvale Tailings Site." Bureau of Environmental Response and Remediation, Department of Health, Utah, 11/90 – 7/ 92.

"Geochemical Evaluation of Bingham Creek Ground water Remediation." Division of Environmental Health, Department of Health, Utah, Principal Investigator, 1/91 7/92.

"Fellowship for Graduate Student." U.S. EPA, Sept. 93 Aug. 94.

"Treatment Performance and Evaluation of UV/OBB3BB/HBB2BBOBB2BB Systems for Remediation of TNT Contaminated Groundwaters." U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, Investigator of Summer Faculty Research and Engineering Program, June 93 Sept. 93.

"Advanced Oxidation Processes for Remediation of Contaminated Groundwater." U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, Intergovernmental Personnel Agreement, 9/93 9/94.

"Device for Point of Use Removal of Lead from Drinking Water." University of Utah Research Foundation Technology Innovation Grant, Principal Investigator, July 94 June 97.

"Optimization of Advanced Oxidation Processes for Hazardous Waste Treatment." USACE Waterways Experiment Station, P.I., Contract No. DACA39-95-K-0012, 2/95 - 1/97.

"Chelating Extraction of Heavy Metals from Contaminated Soils." EPA Great Plains Rocky Mountain Hazardous Substance Research Center, Regions 7 and 8, Kansas State University. 5/95 - 6/97. Principal Investigator with Robert Okey (Co PI, Univ. Utah) and Shranka Banerji (Co PI, Univ. Missouri).

“Drinking Water Quality in the U.S./Mexico Border Region: Assessment of Water Supplies, Treatment, and Distribution.” Southwest Center for Environmental Research and Policy, Co-PI with Donald Hayes (PI, Univ. Utah), 7/95 - 6/96.

“Modeling and Selection of Chelators for Remediation of Radionuclides-Contaminated Soil.” Department of Energy, Argonne National Laboratory, P.I., 7/97-7/98.

“AOP Pretreatments for PAHs-Contaminated Soil Prior to Bioremediation.” University of Utah Research Foundation, 11/96-10/97.

“Microbial disinfection using ultrasound,” UURC, 1998-99.

“Speciation and concentrations of Phosphates in Water and Sediment,” Bureau of Reclamation, 1999-2000.

“Novel Ozone-Bipolar Solvent Technologies for Mitigation of Organic Deposits in Well Bores and Pipelines” Co-PI (50%) with David A. Wavrek (PI), Shell Oil International, 2001-2002.

“In Situ Sediment Ozonator for remediation of PCB-Proof-of-Concept,” CICEET/NOAA, the University of New Hampshire, with Don Hayes (Co-PI), 5/2002-2003.

“Planning Grant for a Center of Excellence on In Situ Sediment Ozonator for remediation of PCB,” State of Utah Center of Excellence Program, with Don Hayes (Co-PI), 7/2002-2003.

“Center of Excellence on In Situ Sediment Ozonator for Remediation of PCB, PAH, and DDT,” State of Utah Center of Excellence Program, Center Director with Don Hayes (Co-PI), 7/2003-6/2005.

“In Situ Sediment Ozonator (ISO) for Remediation of PCB, PAH, DDT, and Other Recalcitrant Chemicals—Technology Demonstration with NERR Sediments,” CICEET/NOAA, the University of New Hampshire, with Don Hayes (Co-PI), 9/2004-8/2006.

“Treatment of Asphaltene in Petroleum Byproducts for Recovery of Values,” Western Oil Sands, Canada. With Don Hayes (Co-PI); 2005-2006.

Proof-of-Concept using Augmented Supercritical Fluid for Sediment Contaminants Degradation. CICEET/NOAA, University of New Hampshire, with Don Hayes (Co-PI) and Milind Deo (Co-PI), 2005-06.

“Selenium Speciation and Partitioning in Wetlands of the Great Salt Lake,” Utah Department of Environmental Quality, Division of Water Quality, Co-PI with Don Hayes (PI), 2005-2006.

“Technologies for Conversion of Petroleum Byproducts into Biodiesel Compounds,” Western Oil Sands, Canada. 2006-2008.

“Treatment and Recycle of Produced Water during Oil and Gas Production,” Department of Energy/Utah Heavy Oil Center. 4/07-5/09.

“O3 Nanobubble ReactorTM for remediation PCBs and PAHs in soil” University of Utah Research Foundation, Technology Commercialization Project. 8/2007 – 5/2009.

HOT TREATMENT FOR PRODUCED WATER. Utah Governor Office of Economic Development, Nov 2010 – Nov 2015.

“Interaction of Microbubbles with Heavy Hydrocarbons in Multiphase Environment.” American Chemical Society Petroleum Research Foundation. Feb. 2009 – Jan. 2011.

Sludge rupture for energy, UURF, 5/2010 – 4/2012

Treatment of olive mill wastes, USEPA, 8/2012 – 8/2013

Pilot test system for produced water treatment, UURF 11/2012 – 10/2013

HOT Engine Development, UURF 5/2013 – 2/2014

HOT Treatment Feasibility for YCLT Water. YCLT Nov 2015 – May 2016.

BIO-OIL FROM PRODUCED WATER IN THE UINTAH BASIN for USU, UU, BYU. Utah Triangle Research Program. Sept. 2015 – Aug. 2016

Disruptive Transport and Coalescing Filtration of Lipid from Cultivated Algae for Biofuel Production. USDA SBIR Project for Heightened Technologies, PLLC. Oct 2016 – Jan 2018.

Complete treatment train for produced water management. Utah Energy Research Triangle Student program. Aug 2017 – May 2018.

Disruptive Transport/Sand Filtration Pretreatment System for Uninterrupted Desalination Water Supply during Harmful Algal Blooms; as PI with Co-PI Ramesh Goel; submitted 6/2019 to Bureau of Reclamation of the Department of the Interior; May 2020 – Nov. 2021

Disinfecting nanobubble shield against COVID-19 in hospital ER/ICU environments, as PI with Co-PIs Ling Zang, PhD and Giavonni Lewis, MD; U internal seed program; 4/2020 – 4/2021

**Funded Grants/Gifts for Laboratory/Equipment Upgrades**

Equipment grant for a HPLC (with RI detector), 2 GCs (with FID, ECD, FPD, TCD detectors), along with integrators, autosamplers, and computer storage and interfaces. 1989.

Equipment Grant for an Atomic Absorption Spectrometer equipped with Graphite Furnace (Civil Engineering as Co-PI with other Departments). University of Utah, 1994.

“DataSonde Multiprobe Water Quality Measurement Instrument.” Vice President’s Research Equipment Support Funds, Co-PI with Don Hayes (PI), 1997.

“Faculty Computing Grant,” College of Engineering, 2000.

Gas Chromatograph/Mass Spectrometer/Electron Capture Detector System (GC/MS/ECD). Purchased with project funds from Honeywell, Utah COEP, Civil Engineering Department. With Don Hayes. 5/2004.

Thermogravimetric analyzer with 100 g sample capacity for asphaltene study; acquired from University property distribution

Research instrumentation Fund Award 2005. Enhancing Research Capability on Media of Environmental and Energy Interests. Vice President’s Office, Univ. of Utah. With Co-PI’s Don Hayes, Milind Deo, Bill Johnson

**Teaching**

Classes Taught 1987 -

Introduction to Environmental Engineering

Water Chemistry

Water Quality and Laboratory Analysis

Biological Treatment

Physical & Chemical Methods for Water/Wastewater Treatment

Solid and Hazardous Waste Management

Special Topics in Environmental Engineering

Environmental Engineering Graduate Seminar

Probability and Statistics

Engineering Economics

Teaching Recognitions 1987 -

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 2014

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 2000

Dean’s 1998-99 “Students as Clients” Special Commendation on excellent teaching

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 1998

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 1993

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 1991

Dean’s Commendation Letter for excellent teaching in the college (top 15%) – 1988

PhD Students Graduated:

* Ting C. Chen (November 94)
* Yu Zeng (April, 2000)
* J.C. Chao (December 2000)
* Hua Xu (December 2005)
* Shamit Nakra (June 2007)
* Zhixiong Cha (Dec. 2008)
* Yuanxing Huang (Dec. 2010)
* Chia-Jung Cheng (Ph.D.) 2012
* Ching-Chieh Lin (Ph.D.) 2014
* Xinyue Zhao (Ph.D.) 2015

MS Students graduated with theses from 1987: 17

Undergraduates and Other Students Advised

Karina Thorpe, undergraduate, 1995

John Zimmerman, undergraduate, 1995

Phyllis Roberge, undergraduate, 1996

Wei-Min Jiang, Research Associate (9/94 - 12/96)

J.C. Chao, Postdoctoral Fellow, 2001-2002

Jack Reneo, J. Wyrick and S. Ryan (U Business students - MBA and Doctoral)

- 1st place winner of 2007 Opportunity Quest competition

- Winner of Workman Nydegger Innovative Award

**SERVICES**

Service to the Scientific Community

* Editor, Sustainable Environment Research, 2011 – present
* Editorial Board, soil & Sediment Contamination – An Internal Journal, 2002 – present
* Editorial Board, Advances in Environmental Research, 2012 – present
* Editorial Board, Jacobs Journal of Civil Engineering, 2015 – present
* Transactions International Advisor, HKIE Transactions, 2016 – present
* Reviewer of research proposals (EPA, NIH) 2001-
* Reviewer of technical articles for journals 1987-

Academic Committees

* Executive Committee Chair (2002-2014), Environmental Engineering Graduate Program (EEGP) – A multidisciplinary graduate degrees-granting program consisting of faculty from 6 academic departments of the College of Engineering and the College of Mines and Earth Sciences
* Department Retention, Promotion, Tenure Committee, Chair; 2010-
* Committee Member, Environmental Engineering Graduate Program (founded 1996-2014)
* College Council representative, 1991-94; 2003-2006
* College of Engineering Safety Committee, 2004-2011
* University Committee on the Physical, Life, and Applied Sciences Areas, 2005-2007
* Academic Policy Advisory Committee (University Senate), 2004-2005
* Team Leader of Environmental/Water Group for 2004 ABET visit (2003-04); accredited.
* Chair/Member of Graduate Supervisory Committees 1987-
* Director of Graduate Studies, 1998-2002
* Department Retention/Promotion/Tenure Committee Chair, 1995-97; 2010-2012
* College of Engineering Retention/Promotion/Tenure Committee, 1995-97
* Graduate Committee (Chair, 9/88 8/91), 1988 93, 1995-98
* College Teaching Excellence Committee, 1988-91
* Department Admission and Graduation Committee, 9/88 95 (Chair, 95-97)
* Department Curriculum Committee, 1997-2002
* Department Scholarship Committee, 1996-97; 1999-2000; 2014-present
* Department Undergraduate Study Committee, 2008-
* Faculty Search Committees for environmental and nuclear engineering : 1989-91, 2000, 2003, 2004, 2007 (Co-Chair); 2008-09 (Chair); 2014-2016
* University Health and Safety Committee, 1998-2001
* University Discrimination Complaints Hearing Panel, 1998-2001
* University Library Policy Advisory Committee, 1998-99
* Engineers Without Boarders Student Chapter Advisor, University of Utah, 2006 – 2013
* Chi Epsilon Student Advisor, 12/2017-
* Department Safety Committee, 2019-
* Faculty Search Committees (Digital Engineering, Geotechnical engineering), 2019-

External Activities and Services

* Utah-Taihu Institute of Environmental Research, Scientific Advisor, 2009-2014
* Student supervisory committee member at National Taiwan University, Taiwan. 2007-
* Student supervisory committee member at National Sun Yat Sen University, Taiwan. 2007-
* Student supervisory committee member at National Cheng Kung University, Taiwan 2007-
* Student supervisory committee member at Tung Hai University, Taiwan 2007-
* Student supervisory committee member at National Ping-Tung University of Science and Technolgoy, Taiwan 2007-
* Student supervisory committee member at National Kaohsiung First University of Science and Technology, Taiwan 2007-
* Supervised and published with over 20 PhD students in Taiwan
* Consultant to TESC Environmental Engineering Co., Taiwan 2012
* Consultant to Yu-Shan Consulting Co., Taiwan 2017-
* Consultant to US Oil Sands on groundwater legal case, 2012

Led U of U student team on various projects in Engineers Without Boarders Chapter since founding -- One project “Treatment/Recycling of Olive Oil Mills Wastewater” by U students in collaboration with Birzeit University students in Palestine won the Mondialogo Engineering Award and 20,000 euros in Dec. 2007.

Faculty Advisor on the University of Utah Student Chapter of Engineers Without Borders (EWB) 2006-2014

2005 Expert Panelist, Invited by the Secretary of The United Front Work Department of CPC Central Committee of China and the Chair of The Chinese People’s Consultative National Committee on Revitalization of the Industrial Base of the Northeast Area of China; August 18-26, 2005

Exchange Faculty/Student Program, 8/2005 –8/2007

Worked with Dean Richard Brown and the International Center on establishing engineering student exchange programs with leading Universities of China. Exchange agreements established with Tsinghua University, Beijing, China and Shanghai Jiaotong University, Shanghai, China.

International Advisory Committee of the 2000 Conference on AOTs-6 and TiO2-5, June 26-30, 2000, London, Ontario, Canada.

Program Committee of the 1997 International Conference on Environmental Engineering and Chemical Engineering, October 7-11, 1997, Guangzhou, China.

US EPA SBIR Panel (about 2 meetings per year), 1991-

US EPA STAR Panel, 2000-

US EPA Fellowship/Grant Program Panel 1996-

NIH review panel 2014

AWWA Intermountain Section Research and Student Affairs Committee, 1999-2004

Conference Session Chair for the 6th, 7th, 8th Annual ACS Conferences on "Emerging Technologies in Hazardous Waste Management", Atlanta, Georgia, 1994-96.

US Army Summer Faculty Research Program, Faculty Participant, 6/94-8/93, 7/95-8/95.

US Army Corps of Engineers Waterways Experiment Station (WES). Intergovernmental Personnel Agreement (IPA), Autumn '93, Spring and Summer '94.

State of Utah, Consultant on local groundwater contamination litigation issues, 1990 92.

RCRA program, Utah Department of Environmental Quality, Consultant, 1991.

State of Utah, Abandoned mines and safety in Utah, 1989.

Hatfield Township Municipal Authority, PA. Consultant with C.R.M., Inc., 1989.