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EDUCATION

2008/09–2013/09 Ph.D. Institute of Environmental Engineering,
National Sun Yat-Sen University, Taiwan

EMPLOYMENT

2020/09 — Present	Postdoctoral Research Fellow	CSS, Academia Sinica, Taiwan
2018/05 — 2019/05	Chief Science Officer	Surface Bioadvances, Inc., USA
2015/04 — 2016/04	Postdoctoral Research Fellow	Civil and Environmental Engineering, University of Delaware, USA

RESEARCH INTEREST

Human Microbiome
Soil and groundwater investigation and remediation system design
Monitored natural attenuation of petroleum hydrocarbons and chloride
Development of selective membranes and chemical reduction of perchlorate
Functionalized activated carbon for the adsorptive removal of fluoride

RESEARCH HIGHLIGHTS

Human Microbiome

- Identifying skin probiotic bacteria or environmental microorganism as well as developing novel drugs, vaccines, probiotics and diagnostics derived from the human skin microbiome.
- Isolating fermenting bacteria from human skin and mediating fermentation to counteract the pathogens that are involved in skin disorders.

Soil and Groundwater Investigation and Remediation System Design

- Designing aerobic/anaerobic bioremediation systems.
- Applying chemical oxidation remediation technologies.
- Applying physical treatment technologies.

Monitored Natural Attenuation of petroleum hydrocarbons and Chloride

- Monitoring the effects of naturally occurring physical, chemical, and biological processes or any combination of these processes to reduce the load, concentration, flux or toxicity of polluting substances in groundwater in order to obtain a sustainable remediation objective.

Development of selective membranes and chemical reduction of perchlorate

- Studying the chemical reduction of perchlorate in dilute aqueous solutions.
- Synthesizing, characterizing, and testing perchlorate selective membranes.

Functionalized activated carbon for the adsorptive removal of Fluoride

- Improving the performance of current treatment process in fluoride removal.
- Synthesizing and testing functionalized activated carbon for fluoride removal.

REPRESENTATIVE PUBLICATIONS (*: corresponding author)

1. **Chiu, H.Y.**, Verpoort, F., Liu, J.K., Chang, Y.M., Kao, C.M. (2017). “Using intrinsic bioremediation for petroleum–hydrocarbon contaminated groundwater cleanup and migration containment: Effectiveness and mechanism evaluation.” *JOURNAL OF THE TAIWAN INSTITUTE OF CHEMICAL ENGINEERS*. 72, 53-61. IF 4.04. SCI.
2. Lin, C.E., Hong, P.K.A., **Chiu, H.Y.**, Surampalli, R.Y., Lin, C.T., Kao, C.M. (2014). “Pressure-assisted cyclic washing of heavy-metal-contaminated sediments.” *INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY* 11(4), 1017-1026. IF 2.396. SCI.
3. **Chiu, H.Y.**, Hong, A., Lin, S.L., Surampalli, R.Y., Kao, C.M. (2013). “Application of natural attenuation for the control of petroleum hydrocarbon plume: Mechanism and effectiveness evaluation.” *JOURNAL OF HYDROLOGY*. 505, 126-137. IF 4.5. SCI
4. **Chiu, H.Y.**, Liu, J.K., Chien, H.Y., Surampalli, R.Y., Kao, C.M. (2013). “Evaluation of enhanced reductive dechlorination of tce using gene analysis: a Pilot-scale Study.” *JOURNAL OF GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERING*. 139, 428-437. IF 3.07. SCI.
5. Chen, T.Y., Kao, C.M., **Chiu, H.Y.**, Yu, Y.T., Sung, W.P. (2012). “Application of oxygen-releasing material to enhance in situ aerobic bioremediation.” *ADVANCED MATERIALS RESEARCH*. 430, 1401-1404. IF 0.39. EI.
6. Kuo, Y.C., Cheng, S.F., Liu, P.W.G., **Chiu, H.Y.**, Kao, C.M. (2012). “Application of enhanced bioremediation for TCE-contaminated groundwater: a pilot-scale study.” *DESALINATION AND WATER TREATMENT*. 41, 364-371. IF 1.32. SCI.
7. Lin, S.L., **Chiu, H.Y.**, Huang D.K., Kao, C.M., Liang, H.S., Chen, D.L., Guo, J.L. (2012). “Assessing sustainable and green remediation strategies tool of contaminated soil and groundwater.” *INDUSTRIAL POLLUTION PREVENTION AND CONTROL*. 124, 103-131.
8. Chien, H.Y., Liu, J.K., **Chiu, H.Y.**, Kao, C.M. (2011). “Application of in situ enhanced bioremediation to treat Trichloroethylene-contaminated groundwater.” *DESALINATION AND WATER TREATMENT*. 118, 55-87. IF 1.32. SCI.

HONORS AND AWARDS

1. The 2017 Learn, Explore, Aspire, Pioneer (LEAP) program enterprise group in United States, Ministry of Science and Technology (MOST), Taiwan, 2018-19. 50,000 USD (PI)
2. Postdoctoral research in the United States, Ministry of Science and Technology, Taiwan, 2015-16. 43,100 USD (PI)
3. Raise the wind for charity, Kaohsiung Red Cross Nursery Center, Taiwan, 2013. 10,000 USD (PI)
4. Awarded to attend the international conference, IWA World Water Congress & Exhibition 2013 in South Korea, Ministry of Science and Technology, Taiwan, 2013. 1,100 USD (PI)
5. Best Paper Award, “Control of membrane technology on semiconductor wastewater reclamation.” Sanitary Sewer and Environmental Wastewater Reclamation Conference, Taiwan, 2013. 1,000 USD (PI)
6. Best Paper Award, “Application of membrane technology on semiconductor wastewater reclamation in the industry park.” Taiwan Wastewater Reclamation Association, Taiwan, 2012
7. Gold medal, National Sun Yat-sen University Dragon Boat International Team at The Kaohsiung Love River Dragon Boat Festival, Kaohsiung, 2012
8. Best Paper Award, “Enhance bioremediation of in situ emulsified substrate biobarrier containing slow hydrogen releasing material to remediate Trichloroethylene-contaminated groundwater.” The Annual Soil and Groundwater Pollution Control Conference, Taiwan, 2011
9. Best Paper Award, “Application of in situ enhanced bioremediation to treat Trichloroethylene-contaminated groundwater.” The Annual Soil and Groundwater Pollution Control Conference, Taiwan, 2010
10. Best Paper Award, “Application of oxidant-release to remediation in situ Trichloroethylene-contaminated groundwater.” The Annual Soil and Groundwater Pollution Control Conference, Taiwan, 2010
11. Awarded Scholarship of Chung Hwa Rotary Cub, Taiwan, 2009-10. 5,300 USD (PI)

OTHERS (Invited Talks · Keynote speech et al.)

1. “Explore the human microbiome and, the effect of environmental pollution on biodiversity”, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan. 16 June 2020.
2. “The function of healthy human microbiome: at the interface of health and disease”, 3th Learn, Explore, Aspire, Pioneer (LEAP) x SoCal Taiwan (SCT) Angels, San Diego, USA. 9 Mar 2019.
3. “Diversity and structure of the root microbiome, a field pilot studies of bioremediation”, Spring Salon Talks, University of California San Diego, San Diego, USA. 2 Mar 2019.
4. “Skin Electric, SVAdvantage (SVA)”, San Francisco, USA. 15 Jan 2019.
5. “An Evolutional Way for Healthy Skin, Chamber of Commerce Taiwan's San Francisco dinner”, San Francisco, USA. 2 Aug 2018.

6. Medal Project: “Proposes recycled medals for 2019 East Asian Youth Games”, 7th East Asian Youth Games Preparation Committee meeting, Taichung City Government, Taiwan. 14 Nov 2017.
7. Medal Project: “Medals to be produced using recycled mobile phones”, 4th East Asian Youth Games Executive Committee meeting, Taichung City Government, Taiwan. 20 Oct 2017.
8. “Progress Report of 2019 Taichung East Asian Youth Games”, 35th East Asian Games Association (EAOC) coordination commission meeting, 27 July 2017.
9. “Green remediation strategy for the monitored natural attenuation (MNA) on petroleum-hydrocarbon contamination site remediation”. Department of Civil Engineering, National Chi Nan University, Taiwan. 17 Nov 2016.
10. “Taiwan VCM corporation Toufen plant-case study”. Remediation Briefing for the pollution Control Sites located at Toufen and Zhunan. Environmental Protection Administration, Taiwan. 21 Aug 2014.
11. “Control of petroleum-hydrocarbon contaminated groundwater by monitored natural attenuation”. Department of Civil & Environmental Engineering, Seoul National University, Korea. 5 Sept 2013.
12. “Effectiveness of MNA on petroleum-hydrocarbon contaminated site remediation”. 5th IWA-ASPIRE Conference & Exhibition, 11 Sept Korea. 2013.
13. “Assessing of monitored natural attenuation and intrinsic bioremediation processes at a petroleum-hydrocarbon spill site”. International Conference on Environmental Quality Concern, Control and Conservation, Taiwan. 25 May 2012.