Huimin Chang (常慧敏), PhD

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Sex Female | Date of birth 28/05/1995 | Nationality Chinese

Summary

Ph.D with 5+ years of experience in solid waste management and waste LCA research, with special interest in sewage sludge and municipal solid waste management technology, Life Cycle assessment of solid waste management systems, and sensitivity analysis. I am self-motivated, communicative, adaptable, and highly admire collaboration and teamwork.

Research Project	- Life cycle environmental assessment of sewage sludge treatment and disposal technologies based on the uncertainty analysis - Life Cycle Assessment (LCA) modelling and analysis of waste management systems for two cities in China - Source intensity model and dispersion probability of landfill odor emission based on artificial neural network
Skills	Life Cycle Assessment; Incineration, Pyrolysis and Gasification technology modeling; Anaerobic digestion and Composting modeling; Odor emission intensity; Diffusion and Dispersion modelling; Artificial Neural network; Uncertainty analysis
Software	Microsoft office, Origin, R language, Python, EASETECH

Education

Integrated M.Sc. and Ph. D in Environmental Engineering | Beijing Normal University (BNU) | 2017.9 – 2023.01

- **Thesis title:** *Life cycle environmental assessment of sewage sludge treatment and disposal technologies based on the uncertainty analysis*
- **Collaborative Project:**
  - *Life Cycle Assessment (LCA) modelling and analysis of waste management systems for two cities in China*
  - *Source intensity model and dispersion probability of landfill odor emission based on artificial neural network*
- **Supervisor:** Associate Prof. Yan Zhao
- **Related coursework:** Extensively trained in sewage sludge and municipal solid waste treatment and disposal technology, Data Analytics, life cycle assessment modeling and analysis.

Guest Ph.D | Department of Environmental and Resource Engineering, Technical University of Denmark (DTU), Demark| 2021.6 – 2022.10

- **Research Project**

  Life cycle environmental assessment of sewage sludge treatment and disposal technology
  - data collection and analysis for sewage sludge inventory parameter.
  - LCA modeling for biotreatment and thermal treatment technologies.
  - Global sensitivity analysis and uncertainty analysis.
- **Supervisor:** Thomas H. Christensen
- **Co-Supervisor:** Anders Damgaard; Valentina Bisinella

B.Sc. in Environmental Science | Hunan University (HNU) | 2013.9-2017.7

- Bachelor thesis title: Amphiphilic dendrimer engineered nano-carrier systems for co-delivery of siRNA and paclitaxel to matrix metalloproteinase-rich tumors for synergistic therapy

Teaching

Teaching assistant for the training course ``LCA modelling of waste management system´´| Tsinghua University (THU) & Beijing Normal University (BNU) & Technical University of Denmark (DTU) | 2019

- Assist students for LCA modeling and using LCA software
- Organize and prepare the course facilities.

Teaching assistant for the bachelor course `` Environmental Pollution and Engineering´´| Beijing Normal University | 2018

- Organize and prepare the course facilities
- Evaluate students' performance and grade course assignments.

Person Skills

Language

- Chinese – Native language
- English – Professional Working

Communication skill

Good communication skills gained through my experience as guest Ph.D working and living in several European countries over 1 year.

- Have collaborated with DTU partners in waste LCA.
- Have presented in international academic conferences 3 times.
- Have visited or communicated with European universities.

Job-related skills

- Strong academic background in environmental engineering, waste management, and sustainability assessment
- Previous experimental experience
- Previous teaching experience
- Communication and collaboration with private and public partners
- Experience in documenting my research with scientific articles and presentations

Digital skill

- EASETECH (LCA-based modelling tool for solid waste)
- STAN (Material flow analysis)
- Minitab (Statistic analysis)
- OriginLab (Academic data processing and statistic analysis)
- R (Data Managing & Statistic)
- Python (Artificial Intelligence & Deep Learning)

Publications

- **Chang, H.**; Zhao, Y.; Zhao, S.; Damgaard, A.; Christensen, T. H., Review of inventory data for the thermal treatment of sewage sludge. ***Waste Management*** **2022,** *146*, 106-118.
- **Chang, H.**; Tan, H.; Zhao, Y.; Wang, Y.; Wang, X.; Li, Y.; Lu, W.; Wang, H., Statistical correlations on the emissions of volatile odorous compounds from the transfer stage of municipal solid waste. ***Waste Management*** **2019,** *87*, 701-708.
- **Chang, H.**; Zhao, Y.; Tan, H.; Liu, Y.; Lu, W.; Wang, H., Parameter sensitivity to concentrations and transport distance of odorous compounds from solid waste facilities. ***Science of the Total Environment*** **2019,** *651*, 2158-2165.
- Zhao, Y.; **Chang, H.**; Liu, X.; Bisinella, V.; Christensen, T. H., Climate Change Impact of the Development in Household Waste Management in China. ***Environmental Science and Technology*** **2022,** *56*, (12), 8993-9002.
- **Chang, H.**; Zhao, Y.; Damgaard, A.; Christensen, T. H., "Life Cycle Environmental Impact Assessment of Sludge Treatment Technologies Based on Uncertainty Analysis" in "WasteLCA_3: Life Cycle Sustainability Assessment For Waste Management And Resource Optimization", Umberto Arena, University of Campania “Luigi Vanvitelli”, Italy; Thomas Astrup, University of Denmark, Denmark Eds, ECI Symposium Series, (2022).
  https://dc.engconfintl.org/lca_waste_3/68 （Conference Abstract）
- Lin, G.; **Chang, H.**; Li, X.; Li, R.; Zhao, Y., Integrated environmental impacts and C-footprint reduction potential in treatment and recycling of express delivery packaging waste. ***Resources, Conservation and Recycling*** **2022,** *179*.
- Xu, A.; **Chang, H.**; Xu, Y.; Li, R.; Li, X.; Zhao, Y., Applying artificial neural networks (ANNs) to solve solid waste-related issues: A critical review. ***Waste Management*** **2021,** *124*, 385-402.
- Xu, A.; **Chang, H.**; Zhao, Y.; Tan, H.; Wang, Y.; Zhang, Y.; Lu, W.; Wang, H., Dispersion simulation of odorous compounds from waste collection vehicles: Mobile point source simulation with ModOdor. ***Sci Total Environ*** **2020,** *711*.
- Xu, A.; Li, R.; **Chang, H.**; Xu, Y.; Li, X.; Lin, G.; Zhao, Y., Artificial neural network (ANN) modeling for the prediction of odor emission rates from landfill working surface. ***Waste Management*** **2022,** *138*, 158-171.
- Xu, Y.; Xu, A.; **Chang, H.**; Tan, H.; Wang, Y.; Zhao, Y., Releasing characteristics of odor pollution from collection and transportation vehicles for municipal solid waste based on monitoring and statistics. ***China Environmental Science*** **2020,** *40*, (4), 1444-1452.

- Li, R.; Xu, A.; Zhao, Y.; **Chang, H.**; Li, X.; Lin, G., Genetic algorithm (GA) - Artificial neural network (ANN) modeling for the emission rates of toxic volatile organic compounds (VOCs) emitted from landfill working surface. ***Journal of Environmental Management*** **2022,** *305*.
- Zhao, Y.; Yuan, J.; Zhao, S.; **Chang, H.**; Li, R.; Lin, G.; Li, X., Is pyrolysis technology an advisable choice for municipal solid waste treatment from a low carbon perspective? ***Chemical Engineering Journal*** **2022,** *449*.
- Li, X.; Zhao, Y.; Xu, A.; **Chang, H.**; Lin, G.; Li, R., Conductive biochar promotes oxygen utilization to inhibit greenhouse gas emissions during electric field-assisted aerobic composting. ***Science of the Total Environment*** **2022,** *842*, 156929.
- Zhao, Y.; Damgaard, A.; Liu, S.; **Chang, H.**; Christensen, T. H., Bioethanol from corn stover – Integrated environmental impacts of alternative biotechnologies. ***Resources, Conservation and Recycling*** **2020,** *155*.

Conferences

- **Oral & Poster presentation,** WasteLCA_3 Life Cycle Assessment for Waste Management and Resource Optimization, Calabria, Italy, June 5th – 10th, 2022
- **Oral & Poster presentation,** 14th International Conference on Waste Management and Technology (2019 Global Waste Forum), Beijing, China, March 21st – 24th, 2019

Grants

- Award of Oral Presentation, 14th International Conference on Waste Management and Technology (2019 Global Waste Forum), Beijing, China

Projects

- 2020-2021 Life Cycle Assessment (LCA) modelling and analysis of waste management systems for two cities (Suzhou and Xi'an, China), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Junior Waste Management expert.
- 2017-2020 Suzhou Regional Water Quality Enhancement and Ecological Security Protection Technology and Comprehensive Demonstration Project, Funded by Program of National major science and technology, Major Participate.
- 2019-2021 Source intensity estimation and dispersion probability analysis of landfill odor emissions based on artificial neural network model, funded by the State Environmental Protection Key Laboratory of Odor Pollution Control, Major Participate.
- 2017-2019 Evaluation of odor pollution from transfer stations of municipal solid waste, funded by the Open Fund of Key Laboratory for Solid Waste Management and Environment Safety, Ministry of Education of China, Major Participate.