

# Ming-Chien Su (蘇銘千)

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## Professor

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### **Degree:**

Ph.D., Department of Civil Engineering and Mechanics, University of Wisconsin-Milwaukee, USA

M.S., Department of Environmental Engineering, Illinois Institute of Technology

B.S., Department of Environmental Engineering, National Cheng Kung University, Taiwan, R.O.C.



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## *Visiting Professor in Spring of 2015 and 2016*

Field Science Center for Northern Biosphere, Hokkaido University, Japan.

## **Research Interests:**

- **Environmental Fate Study, Risk Assessment and Management (環境宿命與風險評估)**
- **Environmental Quality Measuring and Monitoring (環境品質監測與)**
- **Agri-Environmental Policy (農業環境政策)**
- **Sustainable Material management and Resource Efficiency (永續物質管理與資源效率)**

## **Publication List**

### **Journal (Peer Reviewed Articles):**

1. Hideaki Shibata, James N. Galloway, Allison M. Leach, Lia R. Cattaneo, Laura Cattell Noll, Jan Willem Erisman, Baojing Gu, Xia Liang, Kentaro Hayashi, Lin Ma, Tommy Dalgaard, Morten Graversgaard, Deli Chen, Keisuke Nansai, Junko Shindo, Kazuyo Matsubae, Azusa Oita, **Ming-Chien Su**, Shin-Ichiro Mishima, Albert Bleeker (2016, Sep). Nitrogen footprints: Regional realities and options to reduce nitrogen loss to the environment. *Ambio*.
2. Nien-Hsin Kao, **Ming-Chien Su**, Jheng-Rong Fan, Chih-Chun Yen. Investigation of polycyclic aromatic hydrocarbons (PAHs) and cyclic terpenoid biomarkers in the sediments of fishing harbors in Taiwan. *Marine Pollution Bulletin*. 97, 319-332 (2015). (SCI).
3. Nien-Hsin Kao, **Ming-Chien Su**, Jheng-Rong Fan, Ying-Yung Chung. Identification and quantification of biomarkers and polycyclic aromatic hydrocarbons (PAHs) in an aged mixed

contaminated site: from source to soil. *Environmental Science and Pollution Research*. Vol 22 (10) 7529-7546, May, 2015 (SCI).

4. Nien-Hsin Kao, **Ming-Chien Su** and Wen-Chun Huang. Study and engineering application of an MBR in treating cold-rolled steel wastewater. *Desalination and Water Treatment*. 2014, 1-9 On-line July 14, 2014. doi: 10.1080/19443994.2014.940392 (SCI).
5. **Ming-Chien Su**, Nien-Hsin Kao, Chia-Ying Tsai and Yi-Zih Chen. Distribution of Polycyclic Aromatic Hydrocarbons in Soil and Sediment in Taroko National Park and High Altitude Mountain. (ISSN 10158413, *Journal of National Park*). December 2013, Vol. 21(4), p.p.10-21.
6. **Ming-Chien Su**, Nien-Hsin Kao, and Wen-Chun Huang. Engineering application of MBR in treating the fiberglass wastewater. *Desalination and Water Treatment*. 51(25-27), July 2013, 4825-4828(SCI).
7. **Ming-Chien Su**, Nien-Hsin Kao, and Wen-Jar Huang. Potential Assessment of Establishing a Renewable Energy Plant in a Rural Agricultural Area. *Journal of the Air & Waste Management Association*. Volume 62, Issue 6, June 2012, pages 662-670. (SCI)
8. **Ming-Chien Su**, Nien-Hsin Kao. The fate of nitrogen compounds and heavy metals in studied semi-closed organic paddy fields. *Desalination and Water Treatment*. 46(1-3), August 2012, 149-159 (SCI).
9. **Ming-Chien Su**, Shih-Ying, Li, Yi-Sian Yu, Chia-Ying Tsai and Nien-Hsin Kao, Distributions of Heavy Metals in Taroko National Park. (ISSN 10158413, *Journal of National Park*). December 2011, Vol. 21(4), p.p.32-41.
10. Nien-Hsin Kao, **Ming-Chien Su**. Kinetic Study of Pressurized Ozonation Reactor of Tap Water. *Water Practice and Technology*. Nov. 2009., 4(3) (IWA Publishing 2009 doi: 10.2166/WPT.2009.047)
11. Nien-Hsin Kao, **Ming-Chien Su**. "Statistical Study of Instantaneous Demand of Para-Chlorobenzoic Acid (pCBA) as an Ozone/Hydroxyl Radical Probe Compound". *Environmental Engineering Science (SCI)*, 2009, Vol 26, Issue 4, pp 791-798.
12. **Ming-Chien Su**, Chen-Pei Chou, Yi-Zih Chen. "A Study of Sustainable Material Management Approach in Taiwan". *Water Air Soil Pollut: Focus*, 2009. Vol. 9(4), pp499-505.
13. Wei-Chin Chang, Chih-Hsun Hsu, Shih-Min Chiang and Ming-Chien Su "Equilibrium and kinetics of metal biosorption by sludge from a biological nutrient removal system", *Environmental Technology(SCI)*, *Environmental Technology*, 2007, Vol. 28. (4), pp 453-462
14. W. C . Chang, G.S. Hsu, S.M. Chiang, M.C. Su. "Heavy Metal Removal from Aqueous Solution by Wasted Biomass from a Combined as-Biofilm Process", *Bioresource Technology (SCI)*, 2006, Vol. 97, 1503-1508.
15. T. -F. Lin, M.-C. Su, Performance of Gas Mixing in a Flux Chamber, *Energy Sources (SCI)*, Vol. 25, (6), June 2003, pp. 597-605.
16. C. M. Kao, S. C. Chen, M. C. Su. 2001. "Laboratory Column Studies for Evaluating a Barrier System for Providing Oxygen and Substrate for TCE Biodegradation", *Chemosphere (SCI)*. Vol. 44, pp. 925-934.

17. Ming-Chien Su, Erik R. Christensen, Jay F. Karls, Sailaja Kosuru , Ipek Imamoglu. 2000." Apportionment of Polycyclic hydrocarbon Sources in Lower Fox River, USA, Sediments by a Chemical Mass Balance Model ". Environmental Toxicology and Chemistry (SCI). Vol. 19, No. 6, pp. 1481-1490.
18. Ming-Chien Su, Erik R. Christensen, and Jay F. Karls. 1998. " Determination of PAH Sources in Dated Sediments from Green Bay, Wisconsin by a Chemical Mass Balance Model". Environmental Pollution (SCI).Vol. 99(3), pp.411-419.
19. Ming-Chien Su, Erik R. Christensen. 1997. "Apportionment of Polychlorinated Dibenzo-p-dioxins and Dibenzofurans by a Chemical Mass Balance Model". Water Research (SCI). 31, pp. 2935-2948.
20. Ming-Chien Su, Daniel K. Cha K. , Paul R. Anderson. Influence of selector technology on heavy metal removal by activated sludge: secondary effects of selector technology, Water research Vol. 29 (3), March, 1995, pp.971-976.

## **Conference Proceedings (Peer Reviewed Articles, 2007-2016)**

1. **Ming-Chien Su**, Hideaki Shibata, James N Galloway, Allison M Leach, "Evaluating the Taiwanese Nitrogen Footprint of Food Production". 7th International Nitrogen Initiative Conference (INI 2016). December 4-8, 2016. Melbourne Ground, Victoria, Australia.
2. Nien-Hsin Kao and **Ming-Chien Su**, "Application of Biomarker Identification Methods in the Investigations of the Contaminated Soil and Sediments". The 7<sup>th</sup> Korea-Taiwan International Conference on Soil and Groundwater. August 30, 2016. The Plaza Hotel, Seoul, Korea.
3. **Ming-Chien Su**, Yi-Zih Chen and Nien-Hsin Kao (2016, Aug). Developing a Regional Water Resilience Capacity Index for A Forest Park Catchment in Taiwan . 2016 the 5th Asia-Pacific International Congress on Engineering & Natural Sciences (APICENS 2016), Okinawa, Japan.
4. Chen, Y. Z., **M. C. Su**, E. Hsu, S. Y. Wang, C. M Tu and M. T. Koh., 2016. Issues of manure management for material recycling and energy recovery in Taiwan. 2016 Bio-Industry Academic Conference. Jun 3, 2016. National Chung Hsing University, Taichung, Taiwan.
5. **Ming-Chien Su**, Yi-Zih Chen, & Nien-Hsin Kao, & Hideaki Shibata, "Developing a Roadmap by Integrating of Environmental Indicators with the Nitrogen Footprint in an Agriculture Region, Hualien, Taiwan". World Academy of Science, Engineering and Technology, International Science Index, Bioengineering and Life Sciences (2015), 2(8), 1204. ICBE 2015: 17th International Conference on Biological and Environmental Engineering on August, 6-7, 2015 at Amsterdam, The Netherlands.
6. **Ming-Chien Su**, Yi-Zih Chen, & Nien-Hsin Kao, Estimating the N-footprint of agriculture products in Taiwan: A Preliminary Study. International workshop of nitrogen footprint: Local reality and global connection, March 16-18 2015, Field Science Center for Northern Biosphere, Hokkaido University, Japan.

7. **Ming-Chien Su**, Development of Environmental Performance index for Danongdafu Forest Park and nearby Watershed in Hualien , 2014 **Towards our Common Future: Environmental Education and Interdisciplinary Links. November 14-16**, National Museum of Marine Biology and Aquarium, Pingtung, Taiwan.
8. **Ming-Chien Su**, Yi-Zih Chen, & Nien-Hsin Kao, Developing an Environmental Performance index Framework for the Watershed of Danongdafu Forest Park in Hualien, Taiwan, 2014. 2014 Asia Global Land Project Conference in Taipei, Taiwan. Poster. pp.110-111.
9. Nien-Hsin Kao, **Ming-Chien Su**, Wei-Po Chiu & Yi-Zih Chen, Estimating Hazard Quotient of Heavy Metals in Small Mammals at Taroko National Park, Taiwan, Asian Conference on Civil, Material and Environmental Sciences (ACCMES). July, 22-24, 2014, pp. 1211-1222. Sapporo, Japan.
10. Jheng-Rong Fan, Nien-Hsin Kao & **Ming-Chien Su**, Chemical Fingerprinting of Low Boiling Point Biomarker in Petroleum Products, Asian Conference on Civil, Material and Environmental Sciences (ACCMES). July, 22-24, 2014, pp. 172-173. Sapporo, Japan.
11. **Ming-Chien Su**, Yi-Zih Chen & Nien-Hsin Kao, Developing an Environmental Performance index Framework for the Watershed of Danongdafu Forest Park in Hualien, Taiwan, Asian Conference on Civil, Material and Environmental Sciences (ACCMES). July, 22-24, 2014, pp. 1209-1210. Sapporo, Japan.
12. Yi-Zih Chen, **Ming-Chien Su** & Nien-Hsin Kao, Organic Waste Recycling and Greenhouse Gas Emission Reduction in Eastern Taiwan, Asian Conference on Civil, Material and Environmental Sciences (ACCMES). July, 22-24, 2014, pp. 170-171. Sapporo, Japan.
13. **Ming-Chien Su**, Yi-Zih Chen, & Nien-Hsin Kao, Developing a sustainable management framework of organic waste in Taiwan, 2013. Workshop on Development of Model Project for Green Productivity Topic on “Ecological Agriculture Innovation and Management Model”, Nov 6<sup>th</sup>, National Dong Hwa University, Hualien, Taiwan.
14. **Ming-Chien Su**, Nien-Hsin Kao & Yi-Zih Chen, Developing a Sustainable Management Framework of Organic Waste in Eastern Taiwan, 2013. 106th Annual Conference and Exhibition Air and Waste Management Association's (A&WMA) Conference & Exposition, June 25-28, 2013, Hyatt Regency Chicago in Chicago,USA.
15. **Ming-Chien Su**, Nien-Hsin Kao & Chia-Ying Tsai, Source Apportionment of Polycyclic Aromatic Hydrocarbons in the High Altitude Mountains of Taiwan, 2013. 106th Annual Conference and Exhibition Air and Waste Management Association's (A&WMA) Conference & Exposition, June 25-28, 2013, Hyatt Regency Chicago in Chicago, USA.
16. Nien-Hsin Kao & **Ming-Chien Su**, Preliminary Study of Screening-Level of Ecological Risk Assessment of Polycyclic Aromatic Hydrocarbons in the Sediments of Harbors, 2013. 106th Annual Conference and Exhibition Air and Waste Management Association's (A&WMA) Conference & Exposition, June 25-28, 2013, Hyatt Regency Chicago in Chicago, USA.

17. Yi-Zih Chen & **Ming-Chien Su**, Developing an Enhancing Awareness Policy of Electronic Waste Recycling in Taiwan, 2013. 106th Annual Conference and Exhibition Air and Waste Management Association's (A&WMA) Conference & Exposition, June 25-28, 2013, Hyatt Regency Chicago in Chicago, USA.
18. Dalibor Mlčák, & **Ming-Chien Su**, 2013, Influence Factors of Safe Drinking Water Distribution in Particular Slum Manila., NDHU, Taiwan. International Workshop on Economic Sociology of Water. March 27-28, 2013. National Dong Hwa University, Hualien, Taiwan.
19. **Ming-Chien Su**, Nien-Hsin Kao, Wen-Chun Huang. 2012. Engineering application of MBR in treating the fiberglass wastewater. International Conference on Membranes in Drinking and Industrial Water Production Leeuwarden, The Netherlands, 10–12 September 2012.
20. Nien-Hsin Kao, **Ming-Chien Su**, Wen-Chun Huang. 2012. Treatability study of MBR in treating the cold-rolled steel wastewater. International Conference on Membranes in Drinking and Industrial Water Production Leeuwarden, The Netherlands, 10–12 September 2012.
21. **M.-C., Su**, Y.-Z., Chen, C.-P., Chou and N.-H., Kao. 2011. Sustainable Material Management of Renewable Resource from Organic Waste in Eastern Taiwan. 2011 Air and Waste Management Association's (A&WMA) Conference & Exposition, June 21-24, 2011, Disney's Coronado Spring Resort, Orlando, Florida, USA.
22. N.-H., Kao, W.-J, Huang, Y.-Z., Chen and **M.-C., Su**. 2011. Assessing the Opportunities for Renewable Energy Plants in Hualien, Taiwan. 2011 Air and Waste Management Association's (A&WMA) Conference & Exposition, June 21-24, 2011, Disney's Coronado Spring Resort, Orlando, Florida, USA.
23. C.-P., Chou, **M.-C., Su**, Y.-Z., Chen and N.-H., Kao. 2011. Developing the Analytic Framework for Sustainable Material Management Policy: A Case Study of Construction and Demolition Waste in Taiwan. 2011 Air and Waste Management Association's (A&WMA) Conference & Exposition, June 21-24, 2011, Disney's Coronado Spring Resort, Orlando, Florida, USA.
24. M.-C. Su, N.-H. Kao, and C.-P. Chou, 2010. Developing a Conceptual Model of Sustainable Material Management for Construction and Demolition Waste in Taiwan,"5th International Conference on Environmental Science and Technology 2010, July 12-16, 2010, Hilton Houston North Hotel, Houston, USA.
25. N.-H., Kao, **M.-C., Su**, and S.-Y., Li. A Preliminary Study of Ecological Risk Assessment of Polycyclic aromatic hydrocarbons in Hoping Harbor, Taiwan. "5th International Conference on Environmental Science and Technology 2010, July 12-16, 2010, Hilton Houston North Hotel, Houston, USA.
26. **M.-C. Su**, 2009. A Study of Sustainable Material Management Achievements in Taiwan: Practical Experience and a Conceptual Model. 2009 International Conference on Sustainable Material Management. 15 September 2009. Taipei, Taiwan.

27. **M.-C. Su**, C.-P. Chou, Y.-Z. Chen, 2009. A Study of Sustainable Material Management Approach in Taiwan. Conference on the Challenges in Environmental Science & Engineering (CESE-2009). 14-17 July 2009. Townsville, Australia.
28. **M.-C., Su**, N.-H., Kao, C.-P., Chou, 2009. A Study of Nitrogen Cycle in an Organic Rice Paddy Farm in Taiwan. Conference on the Challenges in Environmental Science & Engineering (CESE-2009). 14-17 July 2009. Townsville, Australia.
29. **Ming-Chien Su**, Harvey J. Houg. Sustainable Material Management in Chinese Taipei. 2nd OECD Workshop on Sustainable Materials Management (SMM). 7-9 April 2008. Tel-Aviv, ISRAEL.
30. Ming-Chien Su, Reviewing the Implementation of Plastic Containers Recycling in Taiwan, Resource Recycling Forum,-Taiwan'07, Recycling Fund Management Board Environmental Protection Administration, 2007. 10. 03~10.05. Taipei World Trade Center.

## Teaching Courses

### Graduate Program

- **Sustainable Environment & Development: A Global Perspective**
- **Climate Change and Sustainability**
- **Environmental Measuring and Monitoring**
- **Special Topics on Environmental Governance**
- **Research Methods in Natural Resources**
- **資源再生管理與策略(Resource Conservation, Recovery, and Management Strategy)**
- **環境管理專題(Special Topics on Environmental management)**
- **環境風險評估與管理專論(Special Topics on Environmental Risk Assessment and Management)**

### Undergraduate Program

- **環境科學概論(introduction of Environmental Science)**
- **水資源管理(Water Resource Management)**

## Research Projects

Research Project	Year	Founding by
Social-Ecological System Resilience in Central East Rift Valley: The Role of Danungdafu Forestation Area	2016/08/01~ 2017/07/31	Ministry of Science and Technology
Social-Ecological System Resilience: Promoting Adaptation and Transformation of Danungdafu Forestation Area Social-Ecological System	2015/08/01~ 2016/07/31	Ministry of Science and Technology
Potential Assessment for International Markets of Dried Poultry Litter	2016/01/01~ 2016/12/31	Council of Agriculture
Reviewing and Improving Laws and Regulations of	2015/01/01~	Council of

Animal Industry Act to Enhancing Material Recycling and Energy Recovery(II)	2015/12/31	Agriculture
Resilient Water Management and Social-Eco System Resilience: Developing a Regional Water Resilience Capacity Index for Forest Park Catchment	2014/08/01~ 2015/07/31	Ministry of Science and Technology
Reviewing and Improving Laws and Regulations of Animal Industry Act to Enhancing Material Recycling and Energy Recovery(I)	2014/01/01~ 2014/12/31	Council of Agriculture
A Preliminary Ecological Risk Assessment of the Persistent pollutants in Taroko National Park (III).	2014/01/01~ 2014/12/31	Taroko National Park
Development of Environmental Performance index for Danongdafu Forest Park and nearby Watershed in Hualien.	2013/08/01~ 2014/07/31	National Science Council
A Preliminary Ecological Risk Assessment of the Persistent pollutants in Taroko National Park (II).	2013/02/07~ 2013/12/31	Taroko National Park
The Effect of Organic Nanofertilizer on Environment and Disease Resistance of Crops, and the Analysis of Trace of Toxic Substances ( I ).	2012/12/01~ 2013/10/31	National Science Council
A Case Study of Regional Livestock Waste Recycling and Greenhouse Gas Emission Reduction In Germany.	2012/03/01~ 2012/12/31	Council of Agriculture
A Preliminary Ecological Risk Assessment of the Persistent pollutants in Taroko National Park (I).	2012/01/12~ 2012/12/31	Taroko National Park
Preliminary Ecological Risk Assessment of the Persistent pollutants on the High Altitude Mountains, Taroko National Park Taiwan.	2011/01/01~ 2011/12/31	Taroko National Park
Enhancing the Pollution Prevention and Waste Recycling Programs for Livestock Industry in Eastern Taiwan.(2011).	2011/01/01~ 2011/12/31	Council of Agriculture
An Environmental Monitoring and Ecological Risk Assessment of the Persistent pollutants on sensitive area, Taroko National Park Taiwan.	2010/01/01~ 2010/12/31	Taroko National Park
Enhancing the Pollution Prevention and Waste Recycling Programs for Livestock Industry in Eastern Taiwan.(2010).	2009/01/01~ 2009/12/31	Council of Agriculture
A Preliminary Study of Sustainable Material Management in Taiwan and Germany: Construction and Demolition (C&D) Waste and Municipal Solid Waste (MSW).	2009/12/01~ 2010/11/30	National Science Council
A Sustainable Material Management Approach---Policy	2009/08/01~	National Science

and Strategy.	2010/07/31	Council
Enhancing the Pollution Prevention and Waste Recycling Programs for Livestock Industry in Eastern Taiwan.(2009).	2009/01/01~ 2009/12/31	Council of Agriculture
A Study of International Land Application Policy and Guideline for Livestock Waste.	2009/05/01~ 2009/12/31	Council of Agriculture
Monitoring and Ecological Risk Management of Marine and Costal Area, Ho-Ping Industrial Harbor Taiwan.	2008/01/01~ 2010/12/31	Hoping Industrial Port Corporation
Applied Water Management Indicators for Development of Organic Farming.	2008/08/01~ 2009/07/31	National Science Council
Enhancing the Pollution Prevention and Waste Recycling Programs for Livestock Industry in Eastern Taiwan.(2008).	2008/01/01~ 2008/12/31	Council of Agriculture
An Application Study of the International Manure.	2008/01/01~ 2008/12/31	Council of Agriculture
Management of Transboundary Movement of Solid Waste: under the framework of international practice and domestic waste management (2008).	2008/03/28~ 2008/12/31	Institute of Environment and Resources
Applied Sustainable Indicators for Water Resources Management in a Local Community (I). (NSC96-2621-Z259-001)	2007/08/01~ 2008/07/31	National Science Council
The 7th Year Plan of Environmental Marine Ecological Survey for Ho-Ping Power Company	2007/01/01~ 2007/12/31	Ho-Ping Power Company
Enhancing the Pollution Prevention and Waste Recycling Programs for Livestock Industry in Eastern Taiwan.(2007).	2007/01/01~ 96/12/31	Council of Agriculture
An Application Study of the International Manure.	2007/01/01~ 2007/12/31	Council of Agriculture
A study of the Animal Waste Management in Japan.	2007/05/01~ 2007/12/31	Council of Agriculture
Applied Sustainable Indicators for Water Resources Management in a Local Community(I). (NSC95-2621-Z259-003)	2006/08/01~ 2007/07/31	National Science Council
A Study of the International Management Strategies to the Swine Manure and Disposal of Swine Mortality.	2006/05/01~ 2006/12/31	Council of Agriculture
Study on the Pollution Status of Coastal Fishery Environments.(III)	2006/04/01~ 2006/12/31	Fisheries Agency, Council of Agriculture