Kai Wang

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Personal info

- Date of birthday: 1986/10/7
- Nationality: Taiwan
- Marital Status: Married

Language

- English, Mandarin Chinese, Taiwanese

Software

- Ansys, Matlab, COMSOL, ArcGIS, GMS, SRH, After effects, CCHE3D, Sonar, Joomla, Microsoft office

Hobbies

- Photography, Swimming, Electric guitar

Mottos

- Carpe diem, Happiness consists in contentment

Honor and Award

- The Taiwan Geotechnical Society 2016 excellent paper award. Paper title: "Laboratory evaluation of soil-nailing quality inspection by an improved TDR method" in *Journal of Geoengineering*. Mar. 2017
- Obtained three-year full subsidy of the Recruitment of Visiting Science and Technology Personnel with Subsidies from the Ministry of Science and Technology, 2020
- INSTITUTE Of PHYSICS reviewer recognition of an exceptionally high level of peer review competency. (2021 Trusted reviewer from IOP)

Education

National Chiao Tung University — Hsinchu, Taiwan
M.Eng. and Ph.D. in Civil Engineering — Sep. 2009 - Oct. 2019
Thesis: " Improved Time Domain Reflectometry Measurement for Monitoring of Bridge Scour "

National Taiwan Ocean University — Keelung, Taiwan
B.Eng. in Harbor and River Engineering — Sep. 2005 - Jun. 2009

Research Experience

• Long-range Inspection, Prospecting, Monitoring, and Geospatial Data Integration for Levee Risk Assessment

Postdoctoral fellow - Implemented and managed the project — Aug. 2021 – Present

• Integrated Automatic Monitoring Technologies, Data Assessments, Mobile-Bed Simulations, and Hydraulic Experiments for Overall Basin-based Composite Disaster Management and Impact Assessment (3/3)

Postdoctoral fellow - Implemented and managed the project — Aug. 2021 – Present

• Development of Smart Models and Techniques for Managing Regional Groundwater (4/4)

Postdoctoral fellow - Implemented and operated the project — Aug. 2020 – Present

• Assessments of Fluvial Sedimentation and Environmental Sustainability Management on a Whole Disaster River under Climate and Environment Changes (3/3)

Postdoctoral fellow - Implemented and operated the project — Jan. 2020 – Jul. 2020

• Research of Monitoring Suspended Sediment Transportation in Shimen Reservoir

Research assistant - Fieldwork coordination — Jul. 2012 - Jun. 2017

• Study on Watershed's Sediment Resources Management Topics

Research assistant - Analyzed measured data, Wrote report, Submitted journal papers — Dec. 2013 - Nov. 2016

Teaching Experience

• Soil Mechanics and Soil Mechanics Laboratory Test

Teaching Assistant - planned test procedures, assisted students in conducting experiments, and graded courses — Sep. 2014 - Feb. 2015

• Engineering Mathematics

Course assistant - Assisted students in handling problems and tutored them after class — Feb. 2014 - Jul. 2014

Certificate

- Obtained certificate on "OUTSTANDING REVIEWER" from institute of physics, IOP publishing, United Kingdom — Apr. 2022
- Obtained certificate on "TRUSTED REVIEWER" from institute of physics, IOP publishing, United Kingdom — Mar. 2021
- Obtained certificate on "English Presentation and Meeting" from a technical English class at Language teaching and Research Center in National Chiao Tung University, Taiwan — Aug. 2015
- Received certificate on "COMSOL Multi-physics Classical Training Course" from the Advanced Knowledge Provider PITOTECH CO.,LTD. — Jan. 2013

Service

- Reviewer in Structural Health Monitoring (SAGE Journals, IF: 5.71)
- Reviewer in Smart Materials and Structures (IOP science, IF: 4.13)
- Reviewer in Sustainability (MDPI Journals, IF: 3.89)
- Reviewer in Sensors (MDPI Journals, IF: 3.85)
- Reviewer in Energies (MDPI Journals, IF: 3.25)
- Reviewer in Journal of Hydrology (Elsevier Journals, IF: 6.71)
- Reviewer in Water (MDPI Journals, IF: 3.53)
- Reviewer in Engineering Research Express (IOP science, IF: 1.21)

Research and Interests

- Hydraulic and geotechnical disaster prevention
- Civil engineering monitoring
- Sensors develop and digital signal analysis
- Groundwater research
- Scour monitoring and simulation
- Structural health monitoring

Publications

Journal papers：

[1] Shih, D. S. Shih, S. S., Hsu, S. Marko, Lin., S. Y. , Lin., Y. C., Hung., C.T., and **Wang, K.*** (2022). A framework for the sustainable risk assessment of in-river hydraulic structures: a case study of Taiwan's Daan river. *Journal of Hydrology*, 129028. DOI: 10.1016/j.jhydrol.2022.129028 (SCI, IF : 6.71)

[2] **Wang, K.** and Shih, D. S.* (2022). A method combining seepage theory and model simulation for the identification of potential groundwater resources. *Journal of Hydrologic Engineering* – ASCE, *27*(12), 04022030. ASCE. (SCI, IF : 2.44)

[3] Shih D. S., Chiu Y. C., and **Wang, K.*** (2022). Combined numerical simulation and groundwater depletion sensitivity analysis for dynamic pumping management. *Journal of Water Resources Planning and Management* – ASCE, *148*(3), 04022002. (SCI, IF : 3.25)

[4] **Wang, K.**, Lin, C. P., and Jheng, W. H. (2020). A new tdr-based sensing cable for improving performance of bridge scour monitoring. *Sensors*, *20*(22), 6665. (SCI, IF : 3.27)

[5] **Wang, K.**, and Lin, C. P. (2020). Applicability and limitations of time domain reflectometry bridge scour monitoring system in general field conditions. *Structural Health Monitoring*. DOI: 10.1177/0123456789123456 (SCI, IF : 4.87)

[6] **Wang, K.**, Lin, C. P., and Chung, C. C. (2019). A bundled time domain reflectometry-based sensing cable for monitoring of bridge scour. *Structural Control and Health Monitoring*, e2345. (SCI, IF : 3.74)

[7] Lin, C. P., **Wang, K.**, Chung, C. C., and Weng, Y. W. (2017). New types of time domain reflectometry sensing waveguides for bridge scour monitoring. *Smart Materials and Structures*, *26*(7), 075014. (SCI, IF : 2.96)

[8] Chung, C. C., Lin, C. P., Ngui, Y. J., **Wang, K.**, and Lin, C. H. (2016). Laboratory Evaluation of Soil-nailing Quality Inspection by an Improved TDR Method. *Journal of GeoEngineering*, *11*(3), 143-149. (**2017 excellent paper award**) (SCI, IF : 0.64)

[9] Chung, C. C., Lin, C. P., **Wang, K.**, Lin, C. S., and Ngui, Y. J. (2015). Improved TDR method for quality control of soil-nailing works. *Journal of Geotechnical and Geoenvironmental Engineering*, *142*(1), 06015011. (SCI, IF : 1.69)

Conference papers：

[1] **Wang, K.**, Lin, C. P., and Jheng, W. H. (2018). Development of TDR-based Scour Sensing Cable. *Scour and Erosion IX: Proceedings of the 9th International Conference on Scour and Erosion (ICSE 2018), November 5-8, 2018, Taipei, Taiwan*. CRC Press.

[2] Lin, C. P., **Wang, K.**, Chung, C. C., and Weng, Y. W. (2012, August). Development of a durable bridge scour monitoring system based on time domain reflectometry. In *6th International Conference on Scour and Erosion*, Paris.

[3] 林志平, 魏殷哲, 王凱, 林婉婷, 吳采容, 鐘志忠（2020），地工電磁波導監測技術之新近發展，中華民國第十八屆大地工程學術研討會，屏東。

[4] 鄭瑋皞, 王凱, 林志平,林婉婷（2020），TDR沖刷監測技術改良研究，中華民國第十八屆大地工程學術研討會，屏東。

[5] 林志平、王凱、鐘志忠(2012)，新式時域反射沖刷量測裝置與其方法，2012岩盤工程研討會論文集

[6] 鐘志忠、林志平、王凱、林志昇、吳瑋晉、羅錫墩、蕭景槐、林九安(2011)，時域反射法於土釘工程品質檢測之改善與應用，中華民國第十四屆大地工程學術研討會。

[7] 鐘志忠、林志平、王凱、翁玉紋(2011)，時域反射鋼索式沖刷量測裝置與演算法研發，中華民國第十四屆大地工程學術研討會。

Books and thesis：

[1] 林志平, 魏殷哲, 王凱, 林婉婷, 吳采容, 鐘志忠（2020），地工電磁波導監測技術之新近發展，地工技術，第166期，25-34頁。

[2] 王凱 (2019)，改良式時域反射量測技術在橋墩沖刷監測之應用. 國立交通大學土木工程學系，博士論文。

Technical reports and others：

[1] 王凱， 林志平(2015)，TDR沖刷深度量測之導波設計與資料分析. 行政院國家科學委員會補助專題研究計畫。

[2] 林志平，王凱（2014），河道多功能沖蝕監測纜之研發與應用，行政院國家科學委員會專題研究成果報告（報告編號：NSC 102－2625－M－009－003－），未出版。

[3] 林志平，王凱(2012)，傳輸線式自動化沖蝕監測技術研發，行政院國家科學委員會專題研究成果報告(報告編號:NSC 98－2221－E－009－149－)，未出版。

Activities and Leadership Experience

- The 20th Annual Meeting of Asia Oceania Geosciences Society (AOGS2023) — Aug. 2023
- The 40th International Association for Hydro-Environment Engineering and Research, IAHR World Congress Vienna, Austria. Served as one of the international scientific organizing committees. — July 2023
- The 18th Conference on Current Researches in Geotechnical Engineering in Taiwan — Sept. 2020
- The 9th International Conference on Scour and Erosion (ICSE 2018) — Aug. 2018
- Matlab® Academic Day Campus Tour Seminar — Oct. 2016
- COMSOL Multi-physics coupling simulation workshops in geology and water conservancy — Sept. 2014
- The National Science Council Research Outcomes in Areas of Landslide Dam and Bedrock Erosion — Aug. 2013