



LI-WEI KUO

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EDUCATION

2011	Ph.D. Geology, National Taiwan University
2004	M.S. Geosciences, National Taiwan University
2001	B.S. Geology, National Taiwan University

APPOINTMENT

2025-	Visiting Scholar, Geological Engineering, University of Wisconsin-Madison, USA
2022-	Full Professor, National Central University, Taiwan
2018-22	Associate Professor, National Central University, Taiwan
2015-18	Assistant Professor, National Central University, Taiwan
2015	Post-doctoral Fellow, National Taiwan University, Taiwan
2014-15	Visiting Researcher, University of Padova, Italy
2011-14	Post-doctoral Fellow, National Taiwan University, Taiwan

PROFESSIONAL EXPERIENCES

2021-22	Core Characterization Team Leader, The Milun Fault Drilling and All-Inclusive Sensing Project (MiDAS)
2011	On-site Geologist, China Wenchuan Earthquake Fault Scientific Drilling Project (WFSD)
2006	Student Trainee, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
2004	On-site Geologist, Taiwan Chelungpu Fault Drilling Project (TCDP)

PROFESSIONAL SERVICE

Journal Editor	Associate Editor, New Zealand Journal of Geology and Geophysics
Journal Reviews	Nature Geoscience, Nature Communications, Geology, Earth and Planetary Science Letters, GSA Bulletin, GRL, JGR-Solid, G-cubed, Tectonics, Tectonophysics, JSG, JAES, EPS
Proposal Reviews	NSF (EAR - Petrology and Geochemistry), ANR (France), NWO (Netherlands)
Conference Session	AGU (2019)
University Service	Deputy Director of the Department of Earth Science (2021-24)

SELECTED RESEARCH PROJECTS

2023-26	Taiwan National Science and Technology Council Project: Artificial rapid earthquake slips in incohesive rocks (NSTC 112-2628-M-008-003-MY3)
2023-26	Collaboration Project: Why is pounamu tough? Using materials science and mātauranga Māori to explain the special physical properties and uses of nephrite jade (with Dr. Nicholas Mortimer and Dr. Simon Cox at GNS, New Zealand) (New Zealand Marsden Fund Grants 22-GNS-012)
2023-25	Taiwan National Science and Technology Council Project: Feasibility Study of High-Power mm-Wave Geothermal Drilling (NSTC 112-2119-M-213-001, NSTC 113-2119-M-213-001)
2021-23	Taiwan Ministry of Science and Technology Project: "OBTAIN" Different deformation styles of faults (MOST 110-2116-M-008-002-MY2)
2019-21	Taiwan Ministry of Science and Technology Project: Revealing the contrast in deformation styles between fault core and damage zone throughout the seismic cycle (MOST 108-2116-M-008-0021-MY2)
2016-19	Taiwan Ministry of Science and Technology Project: Deciphering the Seismically Active Faults from Natural and Experimental Fault Rocks (MOST 105-2628-M-008-002-MY3)
2017-21	Collaboration Project: Bulk rheology of fault damage zone materials and its implication for interseismic fault mechanics (with Dr. Hiroki Sone at University of Wisconsin-Madison, USA) (NSF Award 1727661)
2015-16	Taiwan Ministry of Science and Technology Project: Inferring Deformation Mechanics of Active Faults using an integrated field and laboratory approach (MOST 104-2116-M-008-026)

HONORS & AWARDS

2024	The Academia Sinica Scholar Award from Taiwan, recognizing individual research projects in the field of mathematics and physical sciences
2021	President Jia-Lun Luo Outstanding Research Award from Taiwan for Junior Research Investigators, recognizing young scholars for significant research
2020	The Ta-You Wu Memorial Award from Taiwan, recognizing young, outstanding researchers for long-term dedication to science
2019	The Academia Sinica Research Award from Taiwan for junior research investigators in the field of mathematics and physical sciences
2018	Outstanding Reviewer Award, Earth and Planetary Science Letters (Elsevier)

RESEARCH AREA

Experimental Rock Physics, Petrology and Mineralogy, Tectonophysics, Geomaterial Science, Fault-related rocks and Microtectonics

COURSES TAUGHT

Mineralogy, Gem Talks, Taiwan Regional Geology, Geology Field Excursion, Advanced Geology Field Excursion, Fault-related rocks and Microtectonics, Instrumental analysis, Theory and Identification of Polarizing Microscope

PUBLICATIONS IN FIVE YEARS

- **Kuo, L.-W.***, W.-H. Wu, M. S. Tarling, S. A.F. Smith, T. T. Nguyen, W.-J. Wu and J. Si, 2026. Dehydroxylation and amorphization of wet serpentinite gouges during experimental seismic slip and implications for coseismic fluid drainage. *Journal of Structural Geology*, 203(105591), doi: 10.1016/j.jsg.2025.105591.
- Chen, T.-T., **L.-W. Kuo*** and M. A. Pasek, 2026. Alteration Evolution of Lightning Fossils: Insights from Natural Fulgurites Scars and Hydrothermal Experiments. *American Mineralogist*, 111(1), P.87-99, doi: 10.2138/am-2025-9815.
- Nguyen, T. T., **L.-W. Kuo***, Q.-E. Kong, C.-W. Kuo, J.-J. Dong, D. Brown, H. Wang, S.-T. Kuo, H. Li and J. Si, 2024. Fluid Drainage Leads to Thermal Decomposition of Wet Gouge During Experimental Seismic Slip. *Geophysical Research Letters*, 51(18), doi: 10.1029/2023GL106879
- Kuo, S.-T.*, Larry S.-H. Lai, E.-C. Yeh, Y.-L. Tsai and **L.-W. Kuo**, 2024. Damage asymmetry of the Chimei Fault, eastern Taiwan, and implications for deformation evolution. *Journal of Structural Geology*, 186, doi: 10.1016/j.jsg.2024.105218.
- Ma, K.-F.*, S. von Specht*, **L.-W. Kuo**, H.-H. Huang, C.-R. Lin, C.-J. Lin, C.-S. Ku, E.-S. Wu, C.-Y. Wang, W.-Y. Chang, and P. Jousset, 2024. Broad-band strain amplification in an asymmetric fault zone observed from borehole optical fiber and core. *Communications Earth & Environment*, 5, 402, doi: 10.1038/s43247-024-01558-6.
- Chen, W.-L. Chen, J.-C. Kang, K. Kimoto, Y.-F. Song, G.-C. Yin, R. Swisher, C.-H. Lu, **L.-W. Kuo**, J.-J. Huang and Li Lo*, 2023. μ -computed tomographic data of fossil planktonic foraminifera from the western Pacific Ocean: a dataset concerning two biostratigraphic events during the Early Pleistocene. *Frontiers in Ecology and Evolution*, 11, doi: 10.3389/fevo.2023.1171891.
- Chen, B.-C., T. Perdana and **L.-W. Kuo***, 2023. Geophysical characteristics of a fault system in the northern Central Range of Taiwan and its applications for geothermal energy exploration. *Geothermal Energy*, 11:22, doi: org/10.1186/s40517-023-00265-3.
- Wang, H., H.B. Li, G. Di Toro, **L.-W. Kuo**, E. Spagnuolo, S. Aretusini, J.L. Si and S.-R. Song, 2023. Melting of fault gouge at shallow depth during the 2008 MW 7.9 Wenchuan earthquake, China. *Geology*, 51(4), p.345-350, doi: org/10.1130/G50810.1.
- Tran, T.-D., K.-L. Wang*, V. Kovach, A. Kotov, S. Velikoslavinsky, N. Popov, S. Dril, Z.-Y. Chu, D.-C. Lee, **L.-W. Kuo**, Y. Iizuka and H.-Y. Lee, 2023. Plate tectonics in action in the Mesoarchean: Implication from the Olondo greenstone belt on the Aldan Shield of Siberian Craton. *Earth and Planetary Science Letters*, 603, doi: 10.1016/j.epsl.2022.117975.
- Chen, T. Y., **L. W. Kuo***, D. Brown, J. Si, T. J. Meng, H. S. Sheu, Y. F. Song and G. C. Yin, 2022. Lightning-induced features on granitic gneiss and its implication for rare lightning scars from the geological record. *Contributions to Mineralogy and Petrology*, 177:111, doi: 10.1007/s00410-022-01973-y.
- **Kuo, L. W.***, H. Sone, V. Luzin, E.-C. Yeh, Y. J. Hsu and E. Tan, 2022. Gouge fabrics reset by thermal pressurization record stress on faults after earthquakes, *Geology*, doi: 10.1130/G50217.1.
- Tarling, M. S., S. A. F. Smith, M. Negrini, **L.-W. Kuo**, W.-H. Wu and A. F. Copper, 2022. An evolutionary model and classification scheme for nephrite jade based on veining, fabric development, and the role of dissolution–precipitation. *Scientific Reports*, 12(7823), doi: 10.1038/s41598-022-11560-7.
- **Kuo, L. W.***, C. C. Hung, H. Li, S. Aretusini, J. Chen, G. Di Toro, E. Sapagnuolo, F. Di Felice, H. Wang, J. Si and H. S. Sheu, 2022. Frictional properties of the Longmenshan-fault-belt gouges from WFS-3 and implications for earthquake rupture propagation. *JGR-Solid Earth*, 127(5), doi: 10.1029/2022JB024081.
- Talukdar, M.*, H. Sone and **L. W. Kuo**, 2022. Lithology and Fault-Related Stress Variations Along the TCDP Boreholes: The Stress State Before and After the 1999 Chi-Chi Earthquake. *JGR Solid Earth*, 127(2), doi: 10.1029/2021JB023290.
- **Kuo, L. W.***, S. A. F. Smith, C. C. Chen, C. S. Ku, C. Y. Chiang, D. Brown, M. Negrini, W. J. Huang and T. Y. Chen, 2021. Lightning-induced high temperature and pressure microstructures in surface and subsurface fulgurites. *Scientific Reports* 11:22031, p. 1-14, doi: 10.1038/s41598-021-01559-x.
- **Kuo, L. W.***, W. J. Wu, C. W. Kuo, S. A. F. Smith, W. T. Lin, W. H. Wu and Y. H. Huang, 2021. Frictional strength and fluidization of water-saturated kaolinite gouges at seismic slip velocities. *Journal of Structural Geology*, 150, p. 1-17, doi: 10.1016/j.jsg.2021.104419.