

# LI-WEI KUO

## EDUCATION

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2009 - 2011,	Ph.D., Geosciences,
2004 - 2007	National Taiwan University, Taiwan
2001 - 2004	M.S., Geosciences,
	National Taiwan University, Taiwan
1997 - 2001	B.S., Geology,
	National Taiwan University, Taiwan

## APPOINTMENTS

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2018 - present	Associate Professor,
	National Central University, Taiwan
2015 - 2018	Assistant Professor,
	National Central University, Taiwan
2015	Post-doctoral fellow,
	National Taiwan University, Taiwan
2014 - 2015	Visiting researcher,
	University of Padova, Italy
2011 - 2014	Post-doctoral fellow,
	National Taiwan University, Taiwan
2009	On-site geologist, Wenchuan Earthquake Fault Scientific Drilling Project, China

## PROFESSIONAL ACTIVITIES

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Invited Speaker	2020 & 2019	NSRRC 25 <sup>th</sup> &26 <sup>th</sup> User's Meeting & Workshops , Taiwan
	2019	American Geophysical Union Fall Meeting, United States
	2018	Drilling Investigation of Seismogenic Crust in Oklahoma (DISCO), USA
Journal Reviews		Nature Geoscience, Geology, Scientific reports, EPSL, GSA bulletin, GRL, JGR-Solid, G-cubed, Tectonics, Tectonophysics, JSG, JAES, Minerals and EPS

## INFO



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## EQUIPMENT SKILL

### Analytical instrument

Synchrotron X-ray diffraction

Synchrotron Laue diffraction

Synchrotron Transmission X-ray

Microscopy

X-ray powder Diffraction (XRD)

X-ray Fluorescence (XRF)

Thermogravimetric Analyzer (TGA)

Scanning Electron Microscope (SEM)

Transmission Electron Microscope

Micro-Raman

### Simulated fault instrument

Slow to High Velocity Apparatus  
(SHIVA)

Rotary-shear high-velocity frictional  
testing apparatus (LHVR)

## RESEARCH PROJECTS

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- 2021-2023 Ministry of Science and Technology Project -  
“OBTAIN” Different deformation styles of faults  
(MOST 110-2116-M-008-002-MY2)
- 2019 - 2021 Ministry of Science and Technology Project -  
Revealing the contrast in deformation styles  
between fault core and damage zone throughout  
the seismic cycle, Taiwan (MOST 108-2116-M-008-  
0021-MY2)
- 2017 - present Bulk rheology of fault damage zone materials and  
its implication for interseismic fault mechanics at  
Chelungpu fault in Taiwan: with Hiroki Sone at  
University of Wisconsin-Madison, USA
- 2016 - 2019 Ministry of Science and Technology Project -  
Deciphering the seismically active faults from  
natural and experimental fault rocks,  
Taiwan(MOST 105-2628-M-008-002-MY3)
- 2011 - present Wenchuan Earthquake Fault Scientific Drilling  
(WFSD) project with Chinese Academy of  
Geological Sciences, China

## HONORS AND AWARDS

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- 2021 2021 President Jia-Lun Luo Outstanding Research  
award for Junior Research Investigators, Taiwan
- 2020 Ta-You Wu Memorial Award, Taiwan
- 2019 The academia Sinica Research Award for Junior  
Research Investigators-Division of Mathematics  
and Physical Sciences
- 2019, 2020,  
2021 Outstanding research award in National Central  
University, Taiwan
- 2018, 2019 Good Teaching Faculties of the College of Earth  
Sciences by National Central University in Taiwan
- 2018 Outstanding reviewer award in the journal “Earth  
and Planetary Science Letters”

## PUBLICATION

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- **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
- Chen, B. C., T. Perdana, **L. W. Kuo\***, 2021. Fluid flow and fault-related subsurface fractures in slate and metasandstone formations: A case study of the Jentse Geothermal Area, Taiwan. *Geothermics*, 89, p.1-15, doi: 10.1016/j.geothermics.2020.101986
- Wu, W. J., **L. W. Kuo\***, C. S. Ku, C. Y. Chiang, H. S. Sheu, T. D. Aprilniadi and Jia-Jyun Dong, 2020. Mixed-Mode Formation of Amorphous Materials in the Creeping Zone of the Chihshang Fault, Taiwan, and Implications for Deformation Style. *JGR Solid Earth*, doi: 10.1029/2020JB019862
- Hung, C. C., **L.-W. Kuo\***, E. Spagnuolo, C. C. Wang, G. Di Toro, W. J. Wu, J. J. Dong, W. Lin, H. S. Sheu, E. C. Yeh and P. S. Hsieh, 2019. Grain fragmentation and frictional melting during initial experimental deformation and implications for seismic slip at shallow depths. *JGR Solid Earth*, doi: 10.1029/2019JB017905.
- **Kuo, L. W.\***, J. R. Huang, J. N. Fang, J. Si, H. Li and S. R. Song, 2018. Carbonaceous materials in the fault zone of the Longmenshan Fault belt: 1. Signatures within deep Wenchuan earthquake fault zone and its implication. *Minerals*, 8, 385, doi: 10.3390/min8090385.
- **Kuo, L. W.\***, J. R. Huang, J. N. Fang, J. Si, S. R. Song, H. Li and E. C. Yeh, 2018. Carbonaceous Materials in the Fault Zone of the Longmenshan Fault Belt: 2. Characterization of Fault Gouge from Deep Drilling and Implications for Fault Maturity, 8, 393, doi: 10.3390/min8090393.
- J. Si\*, H. Li, **L. W. Kuo**, J. R. Huang, S. R. Song, J. Pei, H. Wang, L. Song, J. N. Fang and H. S. Sheu. Carbonaceous Materials in the Longmenshan Fault Belt Zone: 3. Records of Seismic Slip from the Trench and Implications for Faulting Mechanisms. *Minerals*, 8(457),

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doi:10.3390/min8100457

- **Kuo, L. W.\***, F. Di Felice, E. Spagnuolo, G. Di Toro, S. R. Song, S. Aretusini, H. Li, J. Suppe, J. Si and C. Y. Wen, 2017. Fault gouge graphitization as evidence of past seismic slip. *Geology*, 45, p.979-982, doi: 10.1130/G39295.1.
- **Kuo, L. W.\***, S. R. Song, J. Suppe and E. C. Yeh, 2016. Fault mirrors in seismically active fault zones: A fossil of small earthquakes at shallow depths. *Geophysical Research Letters*, 43, p.1950-1959.
- **Kuo, L. W.\***, Y. F. Song, C. M. Yang, S. R. Song, C. C. Wang, J. J. Dong, J. Suppe and T. Shimamoto, 2015. Ultrafine spherical quartz formation during seismic fault slip: Natural and experimental evidence and its implications. *Tectonophysics*, 664, p.98-108.
- Wang, H., H. Li, J. Si, Z. Sun, X. Fu, D. Liu, J. Pei, C. Li, J. Zhang, S. R. Song, **L. W. Kuo**, J. Mori, L. Xue, E. E. Brodsky, K. Yun and Z. Gong, 2015. Progress in the study of the Wenchuan Earthquake Faulting. *Acta Geoscientica Sinica*, 36(3), p.257-269, doi: 10.3975/cagsb.2015.03.01
- **Kuo, L. W.\*** and S. R. Song, 2014. Characteristics of clay minerals in principal slip zone of an active fault: A case study from the Taiwan Chelungpu fault Drilling Project: Invited chapter in Jorge Sanjurjo-Sánchez, eds., hardcover edited collection "Clays and Clay Minerals: Geological Origin, Mechanical Properties and Industrial Applications": Nova Science Publishers Inc., p.297-333. ISBN: 978-1-63117-779-8.
- Si, J., H. Li, **L. W. Kuo**, J. Pei, S. R. Song and H. Wang, 2014. Clay mineral anomalies in the Yingxiu-Beichuan fault zone from the WFS-1 drilling core and its implication for the faulting mechanism during the 2008 Wenchuan earthquake (Mw 7.9). *Tectonophysics*, 619-620, p. 171-178.
- **Kuo, L. W.\***, H. C. Hsiao, S. R. Song, H. S. Sheu and J. Suppe, 2014. Coseismic thickness of principal slip zone from the Taiwan Chelungpu fault Drilling Project-A (TCDP-A) and correlated fracture energy. *Tectonophysics*, 619-620, p.29-35.
- **Kuo, L. W.\***, H. Li, S. Smith, G. Di Toro, J. Suppe, S. R. Song, S. Nielsen, H. S. Sheu and J. Si, 2014. Gouge graphitization and dynamic fault weakening during the 2008 Mw 7.9 Wenchuan earthquake. *Geology*, 42, p.47-50, doi: 10.1130/G34862.1.