Stanford



Tianyang Guo (###)

Postdoctoral Scholar, Geological Sciences

CONTACT INFORMATION

- **Alternate Contact**

  Email guoty@connect.hku.hk

Bio

BIO

Dr. Tianyang Guo earned his Ph.D. degree in Rock Mechanics from the Department of Earth Sciences, the University of Hong Kong in 2020. He earned his bachelor's and master's degree from Wuhan University (WHU) in 2013 and 2016, respectively. He was awarded the National Scholarship for Graduate in 2015 and graduated from WHU as an outstanding graduate. Before joining Stanford, he was a Postdoctoral Fellow in the Department of Civil and Environmental Engineering at the Hong Kong Polytechnic University (PolyU) under PolyU Distinguished Postdoctoral Fellowship Scheme 2021.

His research interests include (1) Cracking mechanisms and induced microseismicity during the injection of CO2 into reservoir rocks. (2) Application of machine learning in acoustic emission (AE) data interpretation. (3) Microcracking mechanisms of granite based on AE and microscopic observation.

HONORS AND AWARDS

- The Excellent Reviewer Award 2021, Journal of Rock Mechanics and Geotechnical Engineering (Feb. 22, 2022)
- Postgraduate Scholarship, The University of Hong Kong (Sep., 2016-Aug., 2020)
- Outstanding Graduate Award, Wuhan University (May, 2016)
- National Scholarship for Graduate, Ministry of Education, PRC. (Dec. 2015)
- First-class Academic Scholarship, Wuhan University (Sep., 2013-Jun., 2016)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Geophysical Union (2019 - present)
- Member, American Rock Mechanics Association (2021 - present)
- Member, International Society for Rock Mechanics and Rock Engineering (2021 - present)
- Member, Chinese Society for Rock Mechanics & Engineering (2021 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, The University of Hong Kong , Rock Mechanics (2020)
- Master of Engineering, Wuhan University , Hydraulic Structure Engineering (2016)
- Bachelor of Engineering, Wuhan University , Water Conservancy and Hydropower Engineering (2013)

PATENTS

- Ming Chen, Tianyang Guo, Wenbo Lu, Peng Yan. "China P.Rep. Patent 1 0294135.8 A Loading and Unloading Device Based on Explosion Self-destruction Effect", Jan 1, 2015

LINKS

- LinkedIn profile: https://www.linkedin.com/in/tianyang-guo-54a6a9189/
- Google scholar profile: https://scholar.google.com/citations?user=vE2MLeYAAAAJ&hl=en
- ResearcGate profile: https://www.researchgate.net/profile/Guo-Tianyang
- Web of Science profile: https://www.webofscience.com/wos/author/record/GSI-6082-2022

Research & Scholarship

RESEARCH INTERESTS

- Data Sciences

Publications

PUBLICATIONS

- **The effects of CO2-rock interaction on the failure mode of clay-rich sandstone** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Guo, T., Vanorio, T.
  2026; 155

- **Impact of velocity evolution on AE event location and fracture process interpretation** *SCIENTIFIC REPORTS*
  De Landro, G., Guo, T., Vanorio, T.
  2026; 16 (1)

- **A fully coupled thermo-hydro-mechanical model for investigating heat extraction mechanisms in enhanced geothermal systems** *APPLIED THERMAL ENGINEERING*
  Liu, W., Zhang, S., Chen, Z., Zhu, X., Guo, T.
  2025; 280

- **The recurrence of geophysical manifestations at the Campi Flegrei caldera.** *Science advances*
  Vanorio, T., Geremia, D., De Landro, G., Guo, T.
  2025; 11 (18): eadt2067

- **A Deep-Learning P-Wave Arrival Picker for Laboratory Acoustic Emissions: Model Training and Its Performance** *ROCK MECHANICS AND ROCK ENGINEERING*
  Guo, T., Vanorio, T., Ding, J.
  2024

- **Frictional behavior and micro-damage characteristics of rough granite fractures** *TECTONOPHYSICS*
  Meng, F., Wong, L., Guo, T.
  2022; 842

- **Experimental Investigation of Thermal Strengthening in Sichuan Marble** *ROCK MECHANICS AND ROCK ENGINEERING*
  Wong, L., Cui, X., Zhang, Y., Wu, Z., Guo, T.
  2022

- **Acoustic Emission Characteristics During the Microcracking Processes of Granite, Marble and Sandstone Under Mode I Loading** *ROCK MECHANICS AND ROCK ENGINEERING*
  Guo, T., Zhao, Q.
  2022

- **Microcracking mechanisms of cyclic freeze-thaw treated red sandstone: Insights from acoustic emission and thin-section analysis** *CONSTRUCTION AND BUILDING MATERIALS*

Chen, G., Guo, T., Serati, M., Pei, B.
2022; 329

- **How do thermally induced microcracks alter microcracking mechanisms in Hong Kong granite?** *ENGINEERING GEOLOGY*
  Wong, L., Guo, T., Wu, Z., Xiao, X.
  2021; 292
- **Cracking mechanisms of a medium-grained granite under mixed-mode I-II loading illuminated by acoustic emission** *INTERNATIONAL JOURNAL OF ROCK MECHANICS AND MINING SCIENCES*
  Guo, T., Wong, L.
  2021; 145
- **Microcracking behavior transition in thermally treated granite under mode I loading** *ENGINEERING GEOLOGY*
  Guo, T., Wong, L., Wu, Z.
  2021; 282
- **Microcracking behavior of three granites under mode I loading: Insights from acoustic emission** *ENGINEERING GEOLOGY*
  Guo, T., Wong, L.
  2020; 278
- **The Role of Load Control Modes in Determination of Mechanical Properties of Granite** *ROCK MECHANICS AND ROCK ENGINEERING*
  Wong, L., Meng, F., Guo, T., Shi, X.
  2020; 53 (2): 539-552
- **Experimental Study of Cracking Characteristics of Kowloon Granite Based on Three Mode I Fracture Toughness Methods** *ROCK MECHANICS AND ROCK ENGINEERING*
  Wong, L., Guo, T., Lam, W., Ng, J.
  2019; 52 (11): 4217-4235
- **Microcracking behavior of two semi-circular bend specimens in mode I fracture toughness test of granite** *ENGINEERING FRACTURE MECHANICS*
  Wong, L., Guo, T.
  2019; 221