MING **TANG**

School of Earth and Space Sciences, Peking University
mingtang@pku.edu.cn

EXPERIENCE

2023-2 TO PRESENT
PROFESSOR, PEKING UNIVERSITY

2022-8 TO 2023-1
ASSOCIATE PROFESSOR, PEKING UNIVERSITY

2019-12 TO 2022-7
ASSISTANT PROFESSOR, PEKING UNIVERSITY

2016-10 TO 2019-12
POST-DOC, RICE UNIVERSITY
Advisor: Cin-Ty A. Lee

2016-6 TO 2016-9
POST-DOC, UNIVERSITY OF MARYLAND, COLLEGE PARK
Advisors: Roberta L. Rudnick, William F. McDonough

EDUCATION

2016-5
PH.D., UNIVERSITY OF MARYLAND, COLLEGE PARK
Supervisors: William F. McDonough, Roberta L. Rudnick

2011-6
B.S., NANJING UNIVERSITY

GRANTS

NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA (42125302)
Geochemical processes in continent evolution, ¥4,000,000 ($615,385), 2022-2026, PI

NATIONAL TALENT PROGRAM (2021002979)
¥3,000,000 ($461,538), 2021-2024, PI

NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA (42073026)

Endogenic oxidation during continental crust formation and its impact on early Earth surface environment, ¥620,000 ($95,385), 2021-2024, PI

PEKING UNIVERSITY START-UP FUND (7101302669)

¥2,000,000 ($307,692), 2021, PI

NATIONAL SCIENCE FOUNDATION, USA (EAR-1850832)

Synmagmatic crustal thickening and the importance of garnet fractionation in making continental crust, $172,684, 2019-2021, co-I

NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA (41888101)

Co-evolution of the continents and monsoon system, ¥187,500,000 ($28,846,154), 2019-2023, participant

STATE KEY LABORATORY OF LITHOSPHERE EVOLUTION, CAS (Z201706)

Carbon flux in Gangdese arc, southern Tibet—constraints from petrology, structure geology and numerical modelling, ¥1,450,000 ($223,077), 2018-2021, participant

AWARDS

2024
Shen-Su Sun Award

2023
F.G. Houtermans Award (EAG)

2021

- National Science Fund for Distinguished Young Scholars (highly prestigious in China, < 8% approval rate)
- AGU Hisashi Kuno Award for early career scientists in the field of volcanology geochemistry and petrology (first Chinese awardee)
- Xplorer Prize (with a grant of ¥3,000,000, a non-governmental and public interest award for scientists and technicians aged 45 or below)

2019
GAO SHAN Early Career Scientist Award

2017
Charles A. Caramello Distinguished Dissertation Award

2015
Ann G. Wylie Dissertation Fellowship

INVITED TALKS

2021

- University of Washington
- Jadavpur University

2019
- Carnegie Institution of Science
- AGU Fall Meeting invited talk

2018
- Goldschmidt Meeting Keynote talk
- GSA Fall Meeting invited talk
- Stanford University
- Florida University
- University of Southern California

2017
Woods Hole Oceanographic Institution

2016
- Harvard University
- University of California, Santa Barbara
- Geological Society of Washington

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union (AGU)
- Geological Society of America (GSA)
- Geochemical Society (GS)

PROFESSIONAL SERVICES

2023
- Earth and Planetary Science Letter, editorial board
- Acta Petrologica Sinica, editorial board

2021
- Goldschmidt Meeting, session convener
- China Youth Forum for Geosciences, session convener
- China Society for Mineralogy Petrology and Geochemistry, fall meeting session convener
- National Science Review, editorial group member

2020
Goldschmidt Meeting, session convener

2019
Goldschmidt Meeting, session convener

SUPERVISED STUDENTS AND POST-DOCS

- Runwu Li (post-doc)

- Hao Chen (Ph.D. candidate)
- Xuanyu Liu (MS. candidate)

- Dongwei Guo (Ph.D. candidate)
- Ziyi Guo (Ph.D. candidate)
- Jiazhen Wang (Ph.D. candidate)
- Zi Ye (Ph.D. candidate)

- Yichen Jiang (undergraduate student)
- Weizhe Qin (undergraduate student)
- Xuyang Zheng (undergraduate student)
- Jiaxi Wang (undergraduate student)
- Ziqi Yang (former undergraduate student, now at University of Michigan)
- Zitong Xue (former undergraduate student)
- Jiahou Sun (former undergraduate student)
- Danqiu Chen (former undergraduate student, now at University of Washington)

PUBLICATIONS

2024

Tang, M., Chen, H., Lee, C-T., Cao, W. (2024). Subaerial crust emergence hindered by phase-driven lower crust densification on early Earth. *Science Advances*, 10, adq1952.

Tang, M., Guo, Z., Cao, W., Chu, X. (2024). Revisiting zircon Eu anomaly as a proxy for crustal thickness: A case study of the Sierra Nevada Batholith. *Earth and Planetary Science Letters*, 643, 118897.

Tang, M., Chen, H., Song, S-G., Sun, G-Z., Wang, C. (2024). Zircon Eu/Eu* in Archean TTGs with implications for the role of endogenic oxidation in Archean crustal differentiation. *Geochimica et Cosmochimica Acta*, 378, 259-269.

Tang, M., Wang, J., Lee, C-T. (2024). Reevaluating the oxidation effect of garnet crystallization. *Lithos*, 470-471, 107537.

Chen, H., **Tang, M.**, Wu, S-T., Liu, X. (2024). Determination of ultra-trace rare earth elements in olivine by laser ablation-sector field-inductively coupled plasma-mass spectrometry. *Journal of Analytical Atomic Spectrometry*, 39, 1571. (**STUDENT PAPER**)

Liu X., **Tang, M.**, Cao, W., Ji, W., Chen, H. (2024). Sluggish rise of the western Gangdese mountains after India-Eurasia collision. *Lithos*, 478-479, 107640. (**STUDENT PAPER**)

Zhou, Z., Chu, X., **Tang, M.**, Leybourne, M. (2024). Exploring hindered decarbonation in contact metamorphism: A glimpse into marble aureoles in Southern Tibet. *Earth and Planetary Science Letters*, 626, 118519.

2023

Tang, M., Liu, X-Y., Chen, K. (2023). High Mg# of the continental crust explained by calc-alkaline differentiation. *National Science Review*, 10, nwac258.

Chen, K., **Tang, M**., Hu, Z-C., Liu, Y-S. (2023). Generation of tholeiitic and calc-alkaline arc magmas and its implications for continental growth. *Geochimica et Cosmochimica Acta*, 355, 173-183.

Chen, H., **Tang, M**., Song, S-G. (2023). Catastrophic craton destruction via wholesale lithosphere delamination. *Geology*, 51, 460-464. (**STUDENT PAPER**)

Wu, G.H., Chu, X., **Tang, M**., Li, W. and Chen, F. (2023). Distinct tectono-magmatism on the margins of Rodinia and Gondwana. *Earth and Planetary Science Letters*, 609, p.118099.

2022

Chen, J., Jiang, H., **Tang, M.**, Hao, J., Tian, M., Chu, X. (2022). Venus' light slab hinders its development of planetary-scale subduction. *Nature Communications*, 13, 1-9.

Wang, X., **Tang, M**., Moyen, J., Wang, D., Kröner, A., Hawkesworth, C., Xia, X., Xie, H., Anhaeusser, C., Hofmann, A. and Li, J. (2022). The onset of deep recycling of supracrustal materials at the Paleo-Mesoarchean boundary. *National Science Review*, nwab136.

Du, D-H., **Tang, M.**, Li, W., Kay, S.M., Wang, X-L. (2022). What drives Fe depletion in calc-alkaline magma differentiation: Insights from Fe isotopes. *Geology*, 50, 552-556.

Brudner, A., Jiang, H., Chu, X., **Tang, M.** (2022). Crustal thickness of the Grenville orogen: A Mesoproterozoic Tibet? *Geology*, 50, 402–406.

Chen, Y., Meng, J., Liu, H., Wang, C., **Tang, M.**, Liu, T., Zhao, Y. (2022). Detrital zircons record the evolution of the Cathaysian Coastal Mountains along the South China margin. *Basin Research*, 34, 688-701.

2021

Tang, M., Chu, X., Hao, J-H., Shen, B. (2021). Orogenic quiescence in Earth's middle age. *Science*, 371, 728-731.

Tang, M., Ji, W-Q., Chu, X., Wu, A., Chen, C. (2021). Reconstructing crustal thickness evolution from europium anomalies in detrital zircons. *Geology*, 49, 76-80.

Li, J.Y., **Tang, M**., Lee, C.T.A., Wang, X.L., Gu, Z.D., Xia, X.P., Wang, D., Du, D.H. and Li, L.S. (2021). Rapid endogenic rock recycling in magmatic arcs. *Nature Communications*, 12(1), 1-7.

Shu, X., Liao, S., **Tang, M**., Hong, W., Li, J. (2021). Different water contents lead to contrasting magmatic differentiation pathways: A case study of two coeval rock suites. *Lithos*, 386-387, 10600.

Sun, G., Liu, S., Cawood, P., **Tang, M**., Hunen, Jv, Gao, L., Hu, Y., Hu, F. (2021). Thermal state and evolving geodynamic regimes of the Meso- to Neoarchean North China Craton. *Nature Communications*, 12: 3888.

2020

Tang, M. (2020). Composition of the Earth's Crust, in Reference Module in Earth Systems and Environmental Sciences, Elsevier.

Marschall, H., **Tang, M**., (2020). High-Temperature Processes: Is it Time for Lithium Isotopes? *Elements*, 16(4), 247-252.

Tang, M., Lee, C-T., Ji, W-Q., Wang, R., Costin, G. (2020). Crustal thickening and endogenic oxidation of magmatic sulfur. *Science Advances*, 6, eaba6342.

Tang, M., Lee, C-T., Rudnick, R., Condie, K. (2020). Rapid mantle convection drove massive crustal thickening in the late Archean. *Geochimica et Cosmochimica Acta*, 278, 6-15.

Chen, K., **Tang, M**., Lee, C-T., Wang, Z., Zou, Z., Hu, Z., Liu, Y. (2020). Sulfide-bearing cumulates in deep continental arcs: The missing copper reservoir. *Earth and Planetary Science Letters*, 531, 115971.

Lee, C-T., **Tang, M**. (2020). How to make porphyry copper deposits. *Earth and Planetary Science Letters*, 529, 115868.

Chen, K., Rudnick, R.L., Wang, Z., **Tang, M**., Gaschnig, R.M., Zou, Z., He, T., Hu, Z., Liu, Y. (2020). How mafic was the Archean upper continental crust? Insights from Cu and Ag in ancient glacial diamictites. *Geochimica et Cosmochimica Acta*, 278, 16-29.

Chen, C., Lee, C. T. A., **Tang, M**., Biddle, K., Sun, W. (2020). Lithium systematics in global arc magmas and the importance of crustal thickening for lithium enrichment. *Nature communications*, 11, 1-8.

2019

Tang, M., Lee, C-T., Costin, G., Höfer, H. (2019). Recycling reduced iron at the base of magmatic orogens. *Earth and Planetary Science Letters*, 528, 115827.

Tang, M., Lee, C-T., Chen, K., Erdman, M., Costin, G., Jiang, H. (2019). Nb/Ta systematics in arc magma differentiation and the role of arclogites in continent formation. *Nature Communications*, 10, 235.

Liu, H., Sun, WD., Zartman, R., **Tang, M**., (2019). Continuous plate subduction marked by the rise of alkali magmatism 2.1 billion years ago. *Nature Communications*, 10, 3408.

Chen, X., Lee, C.-T. A., Wang, X.-L., **Tang, M.**, (2019). Influence of water on granite generation: modeling and perspective, *Journal of Asian Earth Sciences*, 174, 126-134.

2018

Tang, M., Erdman, M., Eldridge, G., Lee, C-T. (2018). The redox "filter" beneath magmatic orogens and the formation of continental crust. *Science Advances*, 4, eaar4444.

2017

Tang, M., Rudnick, L.R., McDonough, F.W., Bose, M., Goreva, Y. (2017). Multi-mode Li diffusion in natural zircons: evidence for diffusion in the presence of step-function concentration boundaries. *Earth and Planetary Science Letters*, 474, 110-119.

Tang, M., McDonough, F.W., Ash, R. (2017). Europium and strontium anomalies in the MORB source mantle. *Geochimica et Cosmochimica Acta*, 197, 132-141.

2016

Tang, M., Chen, K., Rudnick, L.R. (2016). Archean upper crust transition from mafic to felsic marks the onset of plate tectonics. *Science*, 351(6271), 372-375.

Chen, K., Walker, J.R., Rudnick, L.R., Gao, S., Gaschnig, M.R. Puchtel, S.P., **Tang, M.**, Hu, Z.C. (2016). Platinum-group element abundances and Re–Os isotopic systematics of the upper continental crust through time: Evidence from glacial diamictites. *Geochimica et Cosmochimica Acta*, 191, 1-16.

2015

Tang, M., Arevalo, R. Jr., Goreva, Y., McDonough, F.W. (2015). Elemental fractionation during condensation of plasma plumes generated by laser ablation: a ToF-SIMS study of condensate blankets. *Journal of Analytical Atomic spectrometry*, 30(11), 2316-2322.

Sauzeat, L., Rudnick, R.L., Chauvel, C., Garçon, M. and **Tang, M.** (2015) New perspectives on the Li isotopic composition of the upper continental crust and its weathering signature. *Earth and Planetary Science Letters*, 428, 182-191.

Tang, M., Rudnick, L.R., McDonough, F.W., Gaschnig, R.M., Huang, Y. (2015). Europium anomalies constrain the mass of recycled lower continental crust. *Geology*, 43(8), 703-706.

2014

Tang, M., Rudnick, L.R., Chauvel, C. (2014). Sedimentary input to the source of Martinique lavas: a Li perspective. *Geochimica et Cosmochimica Acta*, 144, 43-58.

Tang, M., McDonough, F. W., Arevalo, R., Jr. (2014) High-precision measurement of Eu/Eu* in geological glasses via LA-ICP-MS analysis. *Journal of Analytical Atomic spectrometry*, 29(10), 1835-1843.

Tang, M., Wang, X. L., Shu, X. J., Wang, D., Yang, T., & Gopon, P. (2014). Hafnium isotopic heterogeneity in zircons from granitic rocks: Geochemical evaluation and modeling of "zircon effect" in crustal anatexis. *Earth and Planetary Science Letters*, 389, 188-199.

2012

Tang, M., Wang, X. L., Xu, X. S., Zhu, C., Cheng, T., & Yu, Y. (2012). Neoproterozoic subducted materials in the generation of Mesozoic Luzong volcanic rocks: Evidence from apatite geochemistry and Hf–Nd isotopic decoupling. *Gondwana Research*, 21(1), 266-280.

Wang, X. L., Shu, X. J., Xu, X., **Tang, M.**, Gaschnig, R. (2012). Petrogenesis of the Early Cretaceous adakite-like porphyries and associated basaltic andesites in the eastern Jiangnan orogen, southern China. *Journal of Asian Earth Sciences*, 61, 243-256.

Wang, X. L., Shu, L. S., Xing, G. F., Zhou, J. C., **Tang, M.**, Shu, X. J., ... & Hu, Y. H. (2012). Post-orogenic extension in the eastern part of the Jiangnan orogen: Evidence from ca 800–760Ma volcanic rocks. *Precambrian Research*, 222–223, 404–423.