

Di-Cheng Zhu – Curriculum Vitae

1. Personal Details

Born on July 7, 1972, Guang'an, Sichuan, China; Married to Liping Duan (born on Sept. 20, 1977 in Shangqiu, Henan, China) with one child, Jiarui Zhu (born on Feb. 19, 2004 in Chengdu, China).

2. Education

PhD (2003), Magmatism and Geodynamics, Chinese Academy of Geological Sciences, Beijing, China; Advisors: Guitang Pan and Xuanxue Mo

MS (2000), Bio-mineralization, Chengdu University of Technology, China; Advisor: Li Lin

BSc (1997), Geology, Chengdu University of Technology, China



3. Professional Appointments

12/2009 – Professor of Earth Sciences, China University of Geosciences, Beijing, China

12/2004 – 12/2009, Associate Professor of Earth Sciences, China University of Geosciences, Beijing, China

07/2003 – 12/2004, Lecturer of Earth Sciences, China University of Geosciences, Beijing, China

4. Professional Affiliations

Editorial Board Member: Lithos (2015.07–), Geodinamica Acta (2015.11–)

5. Awards and Honors

November, 2013, Recipient of Changjiang Scholars Distinguished Professor, Ministry of Education of China

September, 2012, Recipient of National Science Fund for Distinguished Young Scholars

October, 2011, Sun Shen-Su Award

October, 2011, Golden Hammer Award, the China Geological Society

April, 2010, Awarded for the Excellent Young Scientists of the Ministry of Land and Resources

6. Research Interests and regions

Interests: a) Magmatism in SE Tibet, SE India, and SW Australia and its possible link with the Kerguelen mantle plume, b) Mesozoic tectonomagmatism in southern Tibet and its implications for tectonomagmatic evolution of ancient orogenic belts worldwide, and c) Paleogeographic reconstruction in the northern margin of Gondwana during the Paleozoic: Magmatic and detrital zircon perspectives.

Regions: microcontinents in southern Tibet (e.g., the Lhasa, Qiangtang, and Himalaya) and other associated continents (e.g., Turkey, Iran, and Australia) in the northern margin of Gondwana.

7. Research Experience

The following is a brief outline of major research topics and projects that I have undertaken.

Topic 1: Early Cretaceous igneous rocks in SE Tibet and the Kerguelen plume activity: Implications for the breakup of eastern Gondwana and the development of the Weissert Oceanic Anoxic Event

Topic Outline: The relationship between the breakup of eastern Gondwana and the Kerguelen plume activity remains enigmatic. This answer awaits two matters in progress, including a new deep drilling program on the Southern Kerguelen Plateau and a detailed investigation on associated poorly known continental margin (e.g., southern Tibet). I reported the presence of the 132 Ma Comei large igneous province (LIP) in SE Tibet, which correlates in time and space with the Bunbury basalt in SW Australia. They may represent the erosional and/or deformational remnants of a large igneous province, which we call the Comei-Bunbury LIP. This newly identified LIP was likely caused by the Kerguelen plume that started in the Early Cretaceous (ca. 132 Ma) and may have played a role in the breakup of eastern Gondwana and the development of the coeval Weissert oceanic anoxic event.

Topic 2: Magmatic origin and lithospheric architecture of the Lhasa Terrane: Implications for the petrogenesis and geodynamic setting of magmatism in ancient orogenic belts

Topic Outline: A genuine understanding of the origin and evolution of the Greater Tibetan Plateau requires the knowledge of the nature, history and lithospheric architecture of the Lhasa Terrane prior to the India–Asia collision, yet such knowledge has been lacking. As a result, the geodynamic setting of magmatism in the Lhasa Terrane and the nature of its northern suture with Eurasia via the Qiangtang Terrane continue in dispute. My work indicates that the central portion of the Lhasa Terrane was once a microcontinent with Precambrian basement as old as Archean age (i.e., the Lhasa microcontinent) although it has not been directly sampled. This microcontinent had acted as a nucleus to which juvenile crust has been accreted in the northern and southern subterrane in the Phanerozoic during its journey of drift across the Tethyan Ocean basins and ultimate continental collisions.

Topic 3: Paleogeographical reconstruction of the northern margin of Gondwana during the Paleozoic

Topic Outline: Our state-of-the-art understanding of continental geodynamics in the context of plate tectonics owes much to the geological research into the Greater Tibetan Plateau, especially the Qiangtang, Lhasa and Himalayan Terranes in southern Tibet. This is because these terranes best record the entire history of continental drift, collision and collision-related tectonism, magmatism and metamorphism. However, the provenance of the Lhasa Terrane remains enigmatic. My work indicates that the Lhasa Terrane is actually exotic to the widely accepted “Greater Tibetan Plateau system”, and correlated paleogeographically with Australia. It follows that the Lhasa Terrane experienced its late Precambrian–early Paleozoic evolution as part of Australia in a different paleogeographical setting, and evolved independently since then.

8. Teaching Experience

3-5/2013: Igneous Petrology for undergraduates

7-8/2009: Lecturer and course in field geological mapping for undergraduate from China University of Geosciences

5/2009: Lecturer and course in field geological mapping for graduate from Chinese Academy of Geological Sciences

6-7/2008: Lecturer and course in field geological mapping for undergraduate from China University of Geosciences

9. Selected publications

- 1) Xie, J.C., **Zhu, D.C.**, Dong, G.C., Zhao, Z.D., Wang, Q., Mo, X.X., 2016. Linking the Tengchong Terrane in SW Yunnan with the Lhasa Terrane in southern Tibet through magmatic correlation. *Gondwana Research*, doi: 10.1016/j.gr.2016.02.007.
- 2) **Zhu DC**, Chung SL, Niu YL., 2016. Recent advances on the tectonic and magmatic evolution of the Greater Tibetan Plateau: A special issue in honor of Prof. Guitang Pan. *Lithos* 245, 1-6.
- 3) **Zhu, D.C.**, Li, S.M., Cawood, P.A., Wang, Q., Zhao, Z.D., Liu, S.A., Wang, L.Q., 2016. Assembly of the Lhasa and Qiangtang terranes in central Tibet by divergent double subduction. *Lithos* 245, 7-17.
- 4) **Zhu D.C.**, Wang, Q., Zhao, Z.D., Chung, S.L., Cawood, P.A., Niu, Y.L., Liu, S.A., Wu, F.Y., Mo, X.X., 2015. Magmatic record of India-Asia collision. *Scientific Reports* 5, 14289, doi: 10.1038/srep14289. (This article is also posted at <http://www.mantleplumes.org/IndiaAsiaSlabBreakoff.html>).
- 5) Wang, Q., **Zhu, D.C.**, Cawood, P.A., Zhao, Z.D., Liu, S.A., Chung, S.L., Zhang, L.L., Liu, D., Zheng, Y.C., Dai, J.G., 2015. Eocene magmatic processes and crustal thickening in southern Tibet: Insights from strongly fractionated ca. 43 Ma granites in the western Gangdese Batholith. *Lithos* 239, 128-141.
- 6) Wang, Q., **Zhu, D.C.**, Zhao, Z.D., Liu, S.A., Chung, S.L., Li, S.M., Liu, D., Dai, J.G., Wang, L.Q., Mo, X.X., 2014. Origin of the ca. 90 Ma magnesia-rich volcanic rocks in SE Nyima, central Tibet: Products of lithospheric delamination underneath the Lhasa-Qiangtang collision zone. *Lithos* 198-199, 24-37.
- 7) Li, S.M., **Zhu, D.C.**, Wang, Q., Zhao, Z.D., Sui, Q.L., Liu, S.A., Liu, D., Mo, X.X., 2014. Northward subduction of Bangong-Nujiang Tethys: Insight from Late Jurassic intrusive rocks from Bangong Tso in western Tibet. *Lithos* 205, 284-297.
- 8) Chen, Y., **Zhu, D.C.**, Zhao, Z.D., Meng, F.Y., Wang, Q., Santosh, M., Wang, L.Q., Dong, G.C., Mo, X.X., 2014. Slab breakoff triggered ca. 113 Ma magmatism around Xainza area of the Lhasa Terrane, Tibet. *Gondwana Research* 26, 449-463.
- 9) Xia, Y., **Zhu, D.C.**, Wang, Q., Zhao, Z.D., Liu, D., Wang, L.Q., Mo, X.X., 2014. Picritic porphyrites and associated basalts from the remnant Comei Large Igneous Province in SE Tibet: records of mantle-plume activity. *Terra Nova* 26, 487-494.
- 10) **Zhu, D.C.**, Zhao, Z.D., Niu, Y.L., Dilek, Y., Hou, Z.Q., Mo, X.X., 2013. The origin and pre-Cenozoic evolution of the Tibetan Plateau. *Gondwana Research* 23 1429-1454.
- 11) **Zhu, D.C.**, Zhao, Z.D., Niu, Y.L., Dilek, Y., Wang, Q., Ji, W.H., Dong, G.C., Sui, Q.L., Liu, Y.S., Yuan, H.L., Mo, X.X., 2012. Cambrian bimodal volcanism in the Lhasa Terrane, southern Tibet: Record of an early Paleozoic Andean-type magmatic arc in the Australian proto-Tethyan margin. *Chemical Geology* 328, 290-308.
- 12) **Di-Cheng Zhu**, Zhi-Dan Zhao, Yaoling Niu, Yildirim Dilek, Xuan-Xue Mo. 2011. Lhasa Terrane in southern Tibet came from Australia. *Geology* 39, 727-730.
- 13) **Di-Cheng Zhu**, Zhi-Dan Zhao, Yaoling Niu, Xuan-Xue Mo, Sun-Lin Chung, Zeng-Qian Hou, Li-Quan Wang, Fu-Yuan Wu. 2011. The Lhasa Terrane: Record of a microcontinent and its histories of drift

- and growth. [Earth and Planetary Science Letters](#) 301, 241–255.
- 14) [Di-Cheng Zhu](#), Xuan-Xue Mo, Zhi-Dan Zhao, Yaoling Niu, Li-Quan Wang, Qiu-Hong Chu, Gui-Tang Pan, Ji-Feng Xu, Chang-Yong Zhou. 2010. Presence of Permian extension- and arc-type magmatism in southern Tibet: Paleogeographic implications. [GSA Bulletin](#) 122, 979–993.
 - 15) [Di-Cheng Zhu](#), Sun-Lin Chung, Xuan-Xue Mo, Zhi-Dan Zhao, Yaoling Niu, Biao Song, Yue-Heng Yang. 2009. The 132 Ma Comei–Bunbury large igneous province: Remnants identified in present-day SE Tibet and SW Australia. [Geology](#) 37, 583–586.
 - 16) [Di-Cheng Zhu](#), Xuan-Xue Mo, Yaoling Niu, Zhi-Dan Zhao, Li-Quan Wang, Yong-Sheng Liu, Fu-Yuan Wu. 2009. Geochemical investigation of Early Cretaceous igneous rocks along an east-west traverse throughout the central Lhasa Terrane, Tibet. [Chemical Geology](#) 268, 298–312.
 - 17) [Di-Cheng Zhu](#), Gui-Tang Pan, Zhi-Dan Zhao, Hao-Yang Lee, Zhi-Qiang Kang, Zhong-Li Liao, Li-Quan Wang, Guang-Ming Li, Guo-Chen Dong, Bo Liu. 2009. Early Cretaceous subduction-related adakite-like rocks in the Gangdese, south Tibet: Products of slab melting and subsequent melt-peridotite interaction? [Journal of Asian Earth Sciences](#) 34, 298–309.
 - 18) [Di-Cheng Zhu](#), Xuan-Xue Mo, Yaoling Niu, Zhi-Dan Zhao, Yue-Heng Yang, Li-Quan Wang. 2009. Zircon U-Pb dating and in-situ Hf isotopic analysis of Permian peraluminous granite in the Lhasa Terrane, southern Tibet: Implications for Permian collisional orogeny and paleogeography. [Tectonophysics](#) 469, 48–60.
 - 19) [Di-Cheng Zhu](#), Xuan-Xue Mo, Gui-Tang Pan, Zhi-Dan Zhao, Guo-Chen Dong, Yu-Ruo Shi, Zhong-Li Liao, Chang-Yong Zhou. 2008. Petrogenesis of the earliest Early Cretaceous basalts and associated diabases from Cona area, eastern Tethyan Himalaya in south Tibet: Interaction between the incubating Kerguelen plume and eastern Greater India lithosphere? [Lithos](#) 100, 147–173.