

Sections	Ages(Ma)	Stratum(Formation)	Lithology	Methods	Source	Secondary source ^a	Standard	Procedure	Raw data	Recalculation ^d	MSWD	Comment ^e
Nanka 1	247.5±0.3	5213 m	Dacite	K-Ar	Nanka 1 drill well report*	Chen <i>et al.</i> 1998	N	N	N	UE		4
Shengli 1	259.63	5003 m	Andesite	K-Ar	Yao <i>et al.</i> 1991*	Chen <i>et al.</i> 1998	N	N	N	UE		4
Shengli 1	259.64	5667 m	Andesite	K-Ar	Yao <i>et al.</i> 1991*	Chen <i>et al.</i> 1998	N	N	N	UE		4
Keping	292.4±0.5	Kupukuziman	Basalt	K-Ar	Liu & Li 1991*	Chen <i>et al.</i> 1997a; Yang <i>et al.</i> 2006a,2007	N	N	N	UE		4
Keping	259.8±0.9	Kaipaizileike	Basalt	K-Ar	Liu & Li 1991*	Chen <i>et al.</i> 1997a; Yang <i>et al.</i> , 2006,2007	N	N	N	UE		4
Keping	259.8±0.9	Unknown	Basalt	K-Ar	Liu & Li 1991*	Yang <i>et al.</i> 2006a, 2007	N	N	N	UE		4
Keping	278	Kupukuziman	Basalt	K-Ar	Jia <i>et al.</i> 1992*	Yang <i>et al.</i> 2006a	N	N	N	UE		4
Kuche River	285.7±17	Xiaotiekanlike	Granite	Rb-Sr	Lu <i>et al.</i> 1994*	Chen <i>et al.</i> 1998	N	N	N	UE		4
Bachu	259±57	Dyke	Diabase	Sm-Nd	Jia <i>et al.</i> 1995*	Yang <i>et al.</i> , 2005	N	N	N	UE		4
Keping	292.0±0.5	Unknown	Basalt	K-Ar	Jia <i>et al.</i> 1995*	Chen <i>et al.</i> 1997a	N	N	N	UE		4
Bachu	259	Dyke	Diabase	Sm-Nd	Jia <i>et al.</i> 1995*	Chen <i>et al.</i> 1997a	N	N	N	UE		4
Kuche River	278±23	Xiaotiekanlike	Rhyolite	⁴⁰ Ar- ³⁹ Ar ^b	Yang <i>et al.</i> 1996		N	N	N	UE		4
Xiaohaizi	277.7±1.3	Syenite body	Syenite body	⁴⁰ Ar- ³⁹ Ar	Yang <i>et al.</i> 1996		N	N	Y	valid plateau		4
Keping	278.5±1.4	Kupukuziman	Basalt	⁴⁰ Ar- ³⁹ Ar	Yang <i>et al.</i> 1996	Yang <i>et al.</i> 2006a, 2007	N	N	N	UE		4
Yingmai 9	287.6±2.8	Unknown	Alkali granite	K-Ar	Yang <i>et al.</i> 1996		N	N	N	UE		4
Keping	278.5±1.4	Unknown	Basalt	WR(?) ⁴⁰ Ar- ³⁹ Ar	Chen <i>et al.</i> 1997a		N	N	N	UE		4
Keping	276.5±1.3-282.3±1.4	Kaipaizileike	Basalt	⁴⁰ Ar- ³⁹ Ar	Chen <i>et al.</i> 1997b		N	N	Y	no plateau		2, no clear position
Kuche River	278.0±1.3	Xiaotiekanlike	Rhyolite	WR(?) ⁴⁰ Ar- ³⁹ Ar	Chen <i>et al.</i> 1998		N	N	N	UE		4
Yingmai 9	287.6±2.8	5421 m	Syenite	K-Ar	Chen <i>et al.</i> 1998		N	N	N	UE		4
Wajilitag	357.9-306	Intrusive complex	?	WR Rb-Sr & Zircon U-Pb	Li <i>et al.</i> 2001		N	N	N	UE		4
Wajilitag	252.7	Breccia pipe	Mica-olivine pyroxenite	phlogopite ⁴⁰ Ar- ³⁹ Ar	Li <i>et al.</i> 2001		N	N	N	UE		4
Wajilitag	231.3	Dyke	Alkalic dike	WR K-Ar	Li <i>et al.</i> 2001		N	N	N	UE		4
Keping	272.9±4.0	Kupukuziman	Basalt	K-Ar	Zhang <i>et al.</i> 2003	Yang <i>et al.</i> 2006a	N	N	N	UE		4
Keping	288.4±4.4	Kupukuziman	Basalt	K-Ar	Zhang <i>et al.</i> 2003	Yang <i>et al.</i> 2006a	N	N	N	UE		4
Keping	289.0±6.1	Kupukuziman	Basalt	K-Ar	Zhang <i>et al.</i> 2003	Yang <i>et al.</i> 2006a	N	N	N	UE		4
Keping	248.3±3.8	KP	Basalt	K-Ar	Zhang <i>et al.</i> 2003	Yang <i>et al.</i> 2006a	N	N	N	UE		4
Tahe	245±1-276±3	Unknown	Dacite	LA-ICP-MS ^c	Luo <i>et al.</i> 2003*	Luo <i>et al.</i> 2006	N	N	N	UE		4

Keping	287.2±5.6	Kaipaizileike	Basalt	K-Ar	Yang <i>et al.</i> 2006a	Unpublished data	N	N	N	UE		4
Taxinan	289.6±5.6	Qipan	Basalt	K-Ar	Yang <i>et al.</i> 2006a	Unpublished data	N	N	N	UE		4
Keping	281.8±4.2	Kupukuziman(3/4 basalt)	Basalt	WR ⁴⁰ Ar- ³⁹ Ar	Yang <i>et al.</i> 2006a		ZBH-25	Y	Y	no plateau		4
Taxinan	290.1±3.5	Qipan (inter layer of damusi section)	Basalt	WR ⁴⁰ Ar- ³⁹ Ar	Yang <i>et al.</i> 2006a		ZBH-25	Y	Y	no plateau		4
Xiaohaizi	277±4	Syenite body	Syenite body	SHRIMP	Yang <i>et al.</i> 2006b		N	N	Y	272.3 ± 7.3	4.0	incomplete data
Wajilitag	350	Intrusive complex	Alkaline gabbro	U-Pb	Liu <i>et al.</i> 2004		N	N	N	UE		4
Wajilitag	231.3	Intrusive complex	Lamprophyre	K-Ar	Liu <i>et al.</i> 2004		N	N	N	UE		4
Wajilitag	252.7	Intrusive complex	Kimberlite hornblende	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2004		N	N	N	UE		4
Xiaohaizi	310.1	Syenite body	syenite	K-Ar	Liu <i>et al.</i> 2004		N	N	N	UE		4
Keping	275±13	Unknown	Basalt	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	Basalt zircon		4
Keping	291±10	Unknown	Tuff	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	291.5 ± 9.9	11.4	2, scattered
Yijianfang	274±15	Dyke	Gabbro	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	5 scattered spots	10.1	3
Xiaohaizi	272±6	Dyke	Diabase	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	271.8 ± 5.8	12	3
Xiaohaizi	282±3	Syenite body	Syenite body	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	282.4 ± 2.7	2.8	1
Xiaohaizi	281±4	Syenite body	Syenite body	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	280.4 ± 4.7	7.2	2, big span
Shun 1	286±4	3461-3465 m	Dacite-porphry	LA-ICP-MS	Li <i>et al.</i> 2007	NIST610, 91500*		Y	Y	287.6 ± 4.5	11.3	2, big span
Taxinan	289.6±5.6	Qipan	Basalt	WR K-Ar	Li <i>et al.</i> 2008		N	N	N	UE		4
Xiaohaizi	273.7±1.5	Syenite body	Syenite body	LA-ICP-MS	Zhang <i>et al.</i> 2008	TEMORA417		Y	Y	All negative RHO		4
Xiaohaizi	285.9±2.6	Syenite body	Syenite body	SHRIMP	Sun <i>et al.</i> 2008	TEMORA417		Y	Y	285.2 ± 3.6	1.4	1
Keping	287±20	Unknown	Basalt	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	Basalt zircon		4
Keping	294±21	Unknown	Basalt	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	Basalt zircon		4
Yijianfang	283±1.3	Dyke	Diabase	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	5 scattered spots	10.1	3
Xiaohaizi	283.1±3.2	Dyke	Gabbro	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	282.4 ± 2.8	3.2	2, big span
Bachu	281.7±4.8	Syenite body	Syenite body	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	281.4 ± 4.6	7.5	2, big span
Wajilitag	265±16	Intrusive complex	Gabbro	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	268 ± 14	21	3
Shun 1	285±11	3461.1-3463.2 m	Dacite-porphry	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	285±11	8.7	2, big span
Wajilitag	295.9±2.1	Intrusive complex	Granodiorite	LA-ICP-MS	Zhang <i>et al.</i> 2009		N	Y	Y	295.8 ± 1.8	2.1	2, no clear position
Fang 1	264.5±16.6	4749.01 m	Diabase	WR ⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2009		N	Y	Y	no plateau		4
Zhong 1	205±4.3	50 ⁴⁰ m	Basalt	WR ⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2009		N	Y	N	UE		4

Xiaohaizi	283.3±1.8	Syenite body	Pyroxene syenite	LA-ICP-MS	Sun <i>et al.</i> 2009	NIST612	Y	Y	283.3±1.8	0.34	1
Xiaohaizi	281.2±3.7	Dyke Quartz syenitic porphyry	granite vein	LA-ICP-MS	Sun <i>et al.</i> 2009	NIST612	Y	Y	282.0 ± 3.7	1.8	1
Xiaohaizi	278.4 ±2.2		Quartz syenitic porphyry	porphyry	SHRIMP	Yu 2009	TEMORA, M257	Y	Y	279.2 ± 2.5	2.0
Nanka 1	277.3±2.5	5207 m	Rhyolite	SHRIMP	Tian <i>et al.</i> 2010	Temora 2, R33	Y	Y	277.3±2.5	1.5	1
Mana 1	271.7±2.2	5166 m	Rhyolite	LA-ICP-MS	Tian <i>et al.</i> 2010	Temora 2, R33	Y	Y	271.7±2.2	3.7	1
Yingmai 16	282.9±2.5	5195 m	Rhyolite	LA-ICP-MS	Tian <i>et al.</i> 2010	Temora 2, R33	Y	Y	282.9±2.5	8.8	1
Yingmai 30	290.9±4.1	6330 m	Rhyolite	LA-ICP-MS	Tian <i>et al.</i> 2010	Temora 2, R33	Y	Y	290.9±4.1	3.0	1
Yingmai 5	286.6±3.3	5484 m	Dacite	LA-ICP-MS	Tian <i>et al.</i> 2010	Temora 2, R33	Y	Y	286.6±3.3	9.9	1 3, incomplete data
Xiaohaizi	273.0±3.7	Dyke m	Quartz syenitic porphyry	SHRIMP	Chen <i>et al.</i> 2010	TEM 2	Y	Y ^b	UE		
Keping	279.0±4.5	Top Kaipazileike ultramafic-mafic complex	Basalt	SHRIMP	Chen <i>et al.</i> 2010	TEM 2	Y	Y	Basalt zircon		4
Piqiang	276±4		Gabbro	SHRIMP	Zhang <i>et al.</i> 2010a	TEMORA, SL13	Y	Y	278.5 ± 5.9	7.6	2, big span
Halajun	278±3	Halajun plutons 1	Granite	SHRIMP	Zhang <i>et al.</i> 2010a	TEMORA, SL13	Y	Y	274.6 ± 2.2	1.1	1
Halajun	278±3	Halajun plutons 2 Bottom	Granite	SHRIMP	Zhang <i>et al.</i> 2010a	TEMORA, SL14	Y	Y	All negative RHO		4
Keping	291.9±2.2	Kupukuziman	Basalt	LA-ICP-MS	Zhang <i>et al.</i> 2010b	NIST610, 91500	Y	Y	Basalt zircon		4
Keping	297.4±5.6,293.9±4.6	Top Kupukuziman	Dolerite	LA-ICP-MS	Zhang <i>et al.</i> 2010b	NIST610, 91500	Y	Y	Basalt zircon		4
Keping	274.08±2.35	Kaipazileike	Basalt	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Keping	271.93±3.67	Kaipazileike	Basalt	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Keping	282.90±1.55	Kupukuziman	Basalt	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	altered		4
Tangwangcheng	262.30±4.05	Dyke	Diabase	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Xiaohaizi	285.38±8.47	Dyke	Diabase	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Z 1	268.88±4.15	Unknown	Diabase	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Z 16	271.05±3.47	Unknown	Diabase	⁴⁰ Ar- ³⁹ Ar	Zhang <i>et al.</i> 2010c	Bern4M	Y	Y	no plateau		4
Piqiang	265.5±1.2	Gabbroid Bottom	Gabbroid	plagioclase ⁴⁰ Ar- ³⁹ Ar	Zhou <i>et al.</i> 2010	N	Y	Y	no plateau		4
Keping	289.5±2.0	Kupukuziman	Basalt	SHRIMP	Yu <i>et al.</i> 2011a	TEMORA, M257	Y	Y	Basalt zircon		4
Keping	288±2.0	Top Kaipazileike Dyke(coarse- grained)	Basalt	SHRIMP	Yu <i>et al.</i> 2011a	TEMORA, M257	Y	Y	Basalt zircon		4
Bachu	311.4±6.9		Diabase	K-Ar	Li <i>et al.</i> 2011	N 91500,	N	N	UE		4
Xiaohaizi	279.7±2.0	Syenite body	Syenite body	SIMS	Wei & Xu 2011	Qinghu	Y	Y	279.7±2.0	0.26	1
S79-3	279.6±3.0	4876.5 m	Dacite	LA-ICP-MS	Yu <i>et al.</i> 2011b	N	Y	Y	279.6±3.0	0.37	1

S99	273.7±3.2	5263 m	Dacite	LA-ICP-MS	Yu <i>et al.</i> 2011b		N	Y	Y	273.7±3.2	0.28	1
S102-1	281.0±3.0	4908 m	Dacite	LA-ICP-MS	Yu <i>et al.</i> 2011b		N	Y	Y	281.0±3.0	0.53	1
S114	276.6±2.7	4649.5 m	Dacite	LA-ICP-MS	Yu <i>et al.</i> 2011b		N	Y	Y	276.6±2.7	0.81	1
Xiaohaizi	284.3±2.8	Dyke	Quartz syenitic porphyry	SHRIMP	Li <i>et al.</i> 2011	TEMORA		Y	Y	282.6 ± 2.2	1.05	1
Yangta 6	261.1±4.89	5788 m	Basalt	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2012		N	Y	Y	no plateau		4
Yangta 6	252.32±3.47	5785 m	Basalt	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2012		N	Y	Y	no plateau		4
Yangta 6	367.44±3.01	5783 m	Basalt	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2012		N	Y	Y	no plateau		4
Yingmai 16	266.92±1.73	5195 - 5204 m	Rhyolite	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2012		N	Y	Y	no plateau		4
Yudong 2	248.84±4.75	5890 - 5091 m Bottom	Metamorphic diabase	⁴⁰ Ar- ³⁹ Ar	Liu <i>et al.</i> 2012		N	Y	Y	no plateau		4
Keping	291.9±2.2	Kupukuziman	Basalt	LA-ICP-MS	Zhang <i>et al.</i> 2012	91500, GJ-1		Y	Y	Basalt zircon		4
Keping	297.4±5.6, 293.9±4.6	Top Kupukuziman	Dolerite	LA-ICP-MS	Zhang <i>et al.</i> 2012	91500, GJ-1		Y	Y	Basalt zircon		4
Keping	295.3±4.1, 291.9±4.4	2nd flow of KZ	Basalt	LA-ICP-MS	Zhang <i>et al.</i> 2012	91500, GJ-1		Y	Y	Basalt zircon		4
Halajun	272.7±1.1	Kezi'ertuo plutons	Granite	LA-ICP-MS	Huang <i>et al.</i> 2012	Plesovice		Y	Y	272.7±1.1	0.74	1
Wajilitag	282	NA	NA	Cameca	Huang <i>et al.</i> 2012	Unpublished data	N	N	N	UE		4
Halajun	268.6±1.5	Halajun plutons 3	Granite	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	268.6 ± 2.0	1.6	1
Halajun	268.8±1.7	Halajun plutons 4	Granite	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	268.7 ± 1.6	0.94	1
Halajun	271.0±2.2	Halajun plutons 5	Granite	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	No concordant		4
Halajun	276.7±0.9	Guerlale plutons	Granite	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	271.4 ± 1.6	5.5	2, big span
Halajun	272.4±1.1	Kezile plutons ultramafic-mafic complex	Granite	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	275.3 ± 1.1	3.6	2, big span
Piqiang	262.3±2.1	ultramafic-mafic complex	Gabbro	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	262.3±2.1	0.6	1
Piqiang	261.7±1.8	ultramafic-mafic complex	Leucogabbro	LA-ICP-MS	Zhang & Zou 2013	91500		Y	Y	261.5±1.8	0.14	1
Wajilitag	299.8 ± 4.3	kimberlitic pipe	Kimberlite	Perovskite SIMS	Zhang <i>et al.</i> 2013	Ice River perovskite		Y	Y	Huge span, too big RHO, unclear origin	0.61	3
Wajilitag	300.8 ± 4.7	kimberlitic dyke	Kimberlite	Baddeleyite SIMS	Zhang <i>et al.</i> 2013	Phalaborwa baddeleyite		Y	Y	Huge span, grouped	2.5	3
Wajilitag	300.5 ± 4.4	kimberlitic dyke	Kimberlite	Baddeleyite SIMS	Zhang <i>et al.</i> 2013	Phalaborwa baddeleyite		Y	Y	Huge span	2.5	3
Wenquan	286.8 ± 0.5	Wenquan	Rhyolite	CA-TIMS	Liu <i>et al.</i> 2014	NBS-982		Y	Y	284.20 ± 1.60	0.074	1
Keping	287.3±4.0	Kaipaizileike	Basalt	⁴⁰ Ar- ³⁹ Ar	Wei <i>et al.</i> 2014	ZBH-2506		Y	Y	no plateau		4
Keping	287.9±4.1	Kaipaizileike	Basalt	⁴⁰ Ar- ³⁹ Ar	Wei <i>et al.</i> 2014	ZBH-2506		Y	Y	no plateau		4
Halahatang	287.2±2.0	overlying basalt	trachydacite	SIMS	this paper	Plesovice, Qinghu		Y	Y		0.87	
Wajilitag	283.2±2.0	Layered intrusion	clinopyroxenite	SIMS	this paper	Plesovice, Qinghu		Y	Y		0.36	

Note: a, secondary source: data mentioned in the secondary source, but the original source is inaccessible (marked as *, and we do not list them in reference) or cannot be found in the original source; b, all ^{40}Ar - ^{39}Ar data are whole rock ^{40}Ar - ^{39}Ar data, if not specifically labeled; c, all the LA-ICP-MS, SHRIMP, SIMS, CA-TIMS dates are done on zircon, if not specifically labeled; d, UE: Unable to Evaluate; e, 1: robust, 2: with less precision and accuracy, for reference only, 3: with large error, 4: lack critical information, cannot be used. Also note that (1) all the raw data can be found in the Supplementary material, (2) the table contains 113 ages in total, including 2 ages of this paper, but not including the 5 detrital zircon data.

References

- Chen, H.L., Yang, S.F., Dong, C.W., Jia, C.Z., Wei, G.Q. & Wang, Z.G. 1997a. Confirmation of Permian basite zone in Tarim Basin and its tectonic significance. *Geochimica*, 26(6), 77-87. (in Chinese with English abstract)
- Chen, H.L., Yang, S.F., Dong, C.W., Zu, G.Q., Jia, C.Z., Wei, G.Q. & Wang, Z.G. 1997b. Geological thermal events in Tarim Basin. *Chinese Science Bulletin*, 42(7), 580-584.
- Chen, H.L., Yang, S.F., Jia, C.Z., Dong, C.W. & Wei, G.Q. 1998. Confirmation of Permian intermediate-acid igneous rock zone and a new understanding of tectonic evolution in the northern part of the Tarim basin. *Acta Mineralogical Sinica*, 18(3), 370-376. (in Chinese with English abstract)
- Huang, H., Zhang, Z.C., Kusky, T., Santosh, M., Zhang, S., Zhang, D.Y., Liu, J.L. & Zhao, Z.D. 2012. Continental vertical growth in the transitional zone between South Tianshan and Tarim, western Xinjiang, NW China: Insight from the Permian Halajun A1-type granitic magmatism. *Lithos*, 155, 49-66.
- Li, C.N., Lu, F.X. & Chen, M.H. 2001. Research on petrology of the Wajilitag complex body in north edge in the Tarim Basin. *Xinjiang Geology* 19 (1), 38-43. (in Chinese with English abstract)

- Li, Y., Su, W., Kong, P., Qian, Y.X., Zhang, K.L., Zhang, M.L., Chen, Y., Cai, X.Y. & You, D.H. 2007. Zircon U–Pb ages of the Early Permian magmatic rocks in the Tazhong–Bachu region, Tarim Basin by LA-ICP-MS. *Acta Petrologica Sinica*, 23 (5), 1097–1107. (in Chinese with English abstract)
- Li, Z.L., Yang, S.F., Chen, H.L., Langmiur, C.H., Yu, X., Lin, X.B. & Li, Y.Q. 2008. Chronology and geochemistry of Taxinan basalts from the Tarim Basin: evidence for Permian plume magmatism. *Acta Petrologica Sinica*, 24(5), 959–970. (in Chinese with English abstract)
- Li, Z.L., Chen, H.L., Song, B., Li, Y.Q., Yang, S.F. & Yu, X. 2011. Temporal evolution of the Permian large igneous province in Tarim Basin, Northwest China. *Journal of Asian Earth Sciences*, 42, 917–927.
- Liu, C.X., Xu, B.L., Zhou, T.R., Lu, F.X., Tong, Y. & Cai, J.H. 2004. Petrochemistry and tectonic significance of Hercynian alkaline rocks along the northern margin of the Tarim platform and its adjacent area. *Xinjiang Geology*, 22(1), 43-49. (in Chinese with English abstract)
- Liu, Y.L., Hu, X.F., Huang, Z.B., Wu, G.Y., Zheng, D.M., Shen, Y.M., Zhao, Y. & Liu, Y.J. 2012. ^{40}Ar - ^{39}Ar geochronology and geochemistry of the volcanic rocks from the west segment of Tabei uplift, Tarim Basin. *Acta Petrologica Sinica*, 28(8), 2423-2434. (in Chinese with English abstract).
- Liu, H.Q., Xu, Y.G., Tian, W., Zhong, Y.T., Mundil, R., Li, X.H. & Shangguan, S. M. 2014. Origin of two types of rhyolites in the Tarim Large Igneous Province: Consequences of incubation and melting of a mantle plume. *Lithos*, in press.
- Sun, L.H., Wang, Y.J., Fan, W.M. & Zi, J.W. 2008. A further discussion of the petrogenesis and tectonic implication of the Mazhashan syenites in the Bachu area. *Journal of Jilin University (Earth Science Edition)*, 38(1), 8-20. (in Chinese with English abstract)
- Sun, Y., Xiao, Y.F., Zhao, X.K., Qian, Y.X., Xiao, G.W. & Liu, H.Q. 2009. The zircon U-Pb age of Mazha'erTage alkalic complex in the Tarim Basin and its geologic significance. *Acta Geologica Sinica*, 83(6), 775-781. (in Chinese with English abstract)
- Tian, W., Campbell, I.H., Allen, C., Guan, P., Pan, W., Chen, M.M., Yu, H. & Zhu, W. P. 2010. The Tarim picrate-basalt-rhyolite suite, a Permian flood basalt from northwest China with contrasting rhyolites produced by fractional crystallization and anatexis. *Contributions to Mineralogy and Petrology*, 160 (3), 407-425.
- Wei, X. & Xu, Y.G. 2011. Petrogenesis of Xiaohaizi syenite complex from Bachu area, Tarim. *Acta Petrologica Sinica*, 27(10), 2984- 3004. (in Chinese with English abstract)
- Wei, X., Xu, Y.G., Feng, Y.X. & Zhao, J.X. 2014. Plume–lithosphere interaction in the generation of the Tarim large igneous province, NW China: geochronological and geochemical constraints. *American Journal of Science*, 314, 314–356.

- Yang, S.F., Chen, H.L., Dong, C.W., Jia, C.Z. & Wang, Z.G. 1996. The discovery of Permian syenite inside Tarim Basin and its geodynamic significance. *Geochimica*, 25(2), 121-128. (in Chinese with English abstract).
- Yang, S.F., Chen, H.L., Ji, D.W., Li, Z.L., Dong, C.W., Jia, C.Z. & Wei, G.Q. 2005. Geological process of early to middle Permian magmatism in Tarim Basin and its geodynamic significance. *Geological Journal of China Universities*, 11(4), 504-511. (in Chinese with English abstract).
- Yang, S.F., Li, Z.L., Chen, H.L., Chen, W. & Yu, X. 2006a. $^{40}\text{Ar}/^{39}\text{Ar}$ dating of basalts from Tarim Basin, NW China and its implication to a Permian thermal tectonic event. *Journal of Zhejiang University - Science A* 7 (Supp. II), 170–174.
- Yang, S.F., Li, Z.L., Chen, H.L., Xiao, W.J., Yu, X., Lin, X.B. & Shi, X.G. 2006b. Discovery of a Permian quartz syenitic porphyritic dyke from the Tarim Basin and its tectonic implications. *Acta Petrologica Sinica*, 22 (5), 1405–1412. (in Chinese with English abstract)
- Yang, S.F., Li, Z.L. & Chen, H.L. 2007. Permian bimodal dyke of Tarim Basin, NW China: Geochemical characteristics and tectonic implications. *Gondwana Research*, 12, 113-120.
- Yu, X. 2009. Magma evolution and seep geological processes of Early Permian Tarim Large Igneous Province. Ph.D. Dissertation. Hangzhou: Zhejiang University, 1-136. (in Chinese with English summary)
- Yu, X., Yang, S.F., Chen, H.L., Chen, Z.Q., Li, Z.L., Batt, G.E. & Li, Y.Q. 2011a. Permian flood basalts from the Tarim Basin, Northwest China: SHRIMP zircon U-Pb dating and geochemical characteristics. *Gondwana Research*, 20(2-3), 485-497.
- Yu, J.C., Mo, X.X., Dong, G.C., Yu, X.H., Xing, F.C., Li, Y. & Huang, X.K. 2011b. Felsic volcanic rocks from northern Tarim, NW China: Zircon U-Pb dating and geochemical characteristics. *Acta Petrologica Sinica*, 27(7), 2184-2194. (in Chinese with English abstract)
- Zhang, C.L., Li, X.H., Li, Z.X., Ye, H.M. & Li, C.N. 2008. A Permian layered intrusive complex in the Western Tarim Block, northwestern China: product of a Ca. 275–Ma mantle plume? *Journal of Geology*, 116(3), 269–287.
- Zhang, H.A., Li, Y.J., Wu, G.Y., Su, W., Qian, Y.X., Meng, Q.L., Cai, X.Y., Han, L.J., Zhao, Y. & Liu, Y.L. 2009. Isotopic geochronology of Permian igneous rocks in the Tarim Basin. *Chinese Journal of Geology*, 44 (1), 137–158. (in Chinese with English abstract).
- Zhang, C.L., Xu, Y.G., Li, Z.X., Wang, H.Y. & Ye, H.M. 2010a. Diverse Permian magmatism in the Tarim Block, NW China: Genetically linked to the Permian Tarim mantle plume? *Lithos*, 119 (3-4): 537-552.

- Zhang, D.Y., Zhou, T.F., Yuan, F., Fan, Y., Liu, S. & Du, H.X. 2010b. LA-ICPMS U-Pb ages, Hf isotope characteristics of zircons from basalts in the Kupukuziman Formation, Keping area, Tarim Basin. *Acta Petrologica Sinica*, 26(3): 963- 974. (in Chinese with English abstract)
- Zhang, S.B., Ni, Y.N., Gong, F.H., Lu, H.N., Huang, Z.B. & Lin, H.L. 2003. A Guide to the Stratigraphic Investigation on the Periphery of the Tarim Basin. Petroleum Industry Press, Beijing, p. 280. (in Chinese and English).
- Zhang, Y.T., Liu, J.Q. & Guo, Z.F. 2010c. Permian basaltic rocks in the Tarim basin, NW China: implications for plume–lithosphere interaction. *Gondwana Research*, 18, 596–610.
- Zhou, L.X., Hu, S.L., Wang, L.G., Li, Y.J., Huang, Z.B., Zhu, H.Y., Zhao, Y. & Liu, Y.L. 2010. The age of Piqiang gabbroid, NW margin of Tarim Basin, NW China. *Chinese Journal of Geology*, 45(5), 1057-1065. (in Chinese with English abstract)
- Zhang, D.Y., Zhou, T.F., Yuan, F., Jowitt, S.M., Fan, Y. & Liu, S. 2012. Source, evolution and emplacement of Permian Tarim Basalts: evidence from U–Pb dating, Sr–Nd–Pb–Hf isotope systematics and whole rock geochemistry of basalts from the Keping area, Xinjiang Uygur Autonomous region, northwest China. *Journal of Asian Earth Sciences*, 49, 175–190.
- Zhang, D.Y., Zhang, Z.C., Santosh, M., Cheng, Z., He, H. & Kang, J. 2013. Perovskite and baddeleyite from kimberlitic intrusions in the Tarim large igneous province signal the onset of an end-Carboniferous mantle plume. *Earth and Planetary Science Letters*, 361, 238–248.
- Zhang, C.L. & Zou, H.B. 2013. Permian A-type granites in Tarim and western part of Central Asian Orogenic Belt (CAOB): Genetically related to a common Permian mantle plume? *Lithos*, 172, 47-60.